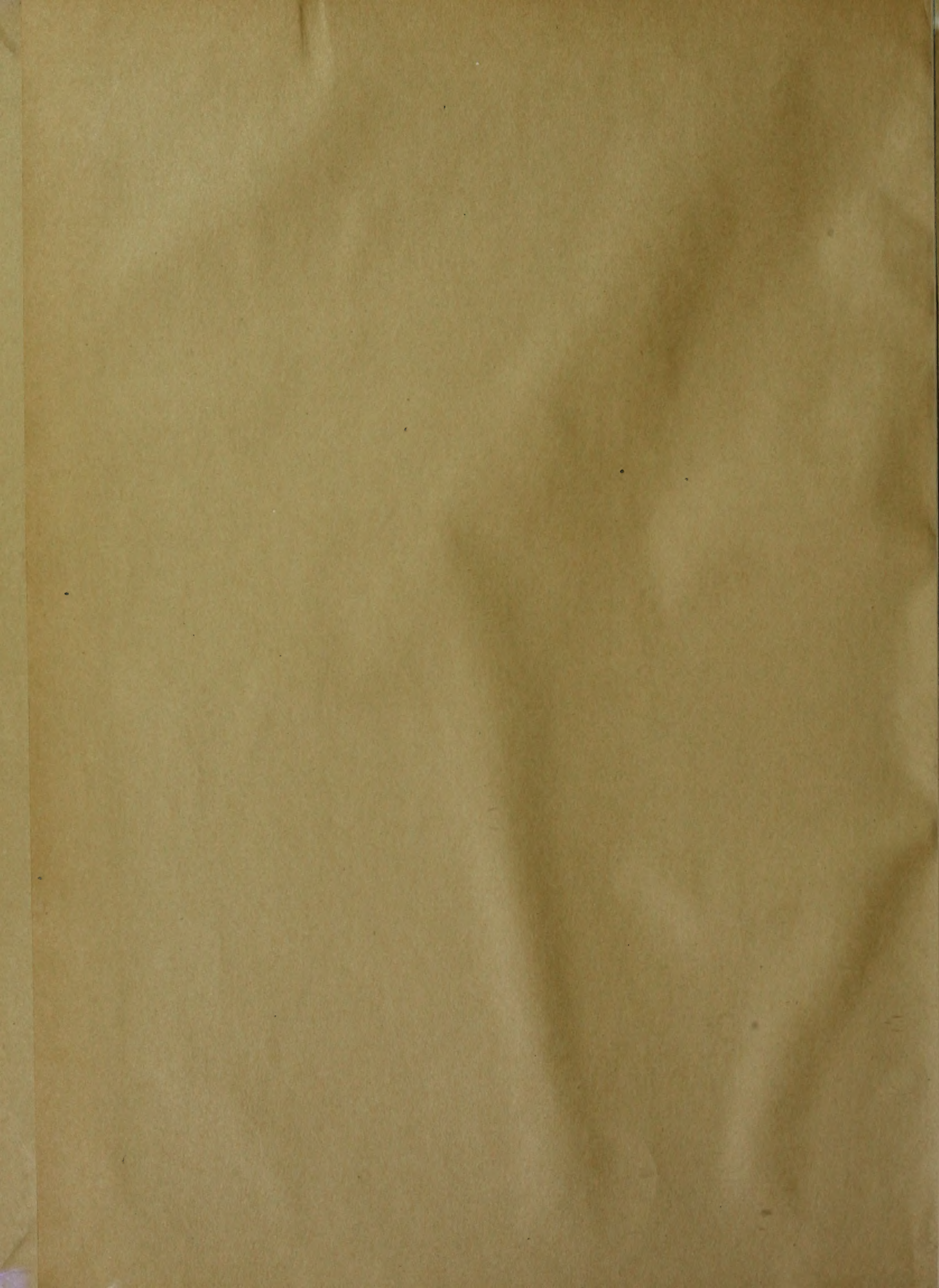




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THE PACIFIC RURAL PRESS

SAN FRANCISCO

JANUARY 6, 1917.

LOS ANGELES

Barley: California's Greatest Grain.

Seventeenth of a Series of Sketches in Which the Editor Presents Suggestions, Drawn from Long Experience, of What Californians Have Done and May Do for the Advancement of California Agriculture.

IF ONE had knowledge of the facts and insight to discern their full significance he might go into a barley field and read in this one common farm crop the history of California and the characters and achievements of Californians. For though barley is counted small from a broad American view and though it has to be grouped with rye, buckwheat, sorghum grains and spelt to make up the "minor cereals" to which statisticians allot only about one-fourteenth of the cereal acreage of the United States, barley is the greatest cereal of California and it illustrates the uniqueness of the State and the originality of its achievements quite as well as do some other products which are popularly received as indicators of novelty and greatness.

Barley's Paradise Regained.—It is of course strange to think of barley illustrating novelty in any way for it was the chief bread grain of mankind long before Pharaoh's barley was shattered out by the hailstones of Moses or Ruth drew smiles through the beards of Boaz and his barley. It is interesting, however, to remember that though barley did consent to go 12,000 feet high on the Himalayas, and north to Scotland on the map of Europe, it always manifested preference for semi-tropical salubrity and was the chief bread grain around the Mediterranean until the ancient Romans brought wheat from Egypt and took to feeding the barley to their horses as they are doing in Italy and Spain to the present day. Now out from Spain came the Spaniards, holy and otherwise, to uplift the savages by noble toil and themselves by the products of it, and brought barley with them—to Lower California in 1697 and to our California in 1769. But barley had previously reached the Atlantic coast, presumably from points in Northern Europe whence came the Pilgrims and their fore-running prospectors, for barley is recorded on Martha's Vineyard in 1602; in Virginia in 1611—becoming abundant there by 1648, when it was smoked out by tobacco. Barley was grown where now stand the sky-scrapers of Manhattan island as early as 1626, and in 1796 was counted the most important farm product of Rhode Island.

Thus the Atlantic colonies had the start of the California missions with barley and they tried to make it conform to their conditions by the stern discipline which they practiced on everything, without success. Barley kept sighing for the deep warm soil of the Nile valley, for the blue skies of Italy, for the dry summer air of Spain, and the Eastern coasters cast it out because they could only get about twenty bushels per acre and only then on land rich, early, warm, and mellow and a better chance than oats would be grateful for. All the things it sighed for barley found in California and yielded incredibly, even under the rude husbandry of the padres—who simply allowed it to help itself to sky, air and rainfall as it liked. Thus before American occupation barley had made itself at home in California.

At the East people took to growing oats as easier: in California the

movement was reversed, for barley was easier because of favoring soil and climatic conditions. Thus one can find the uniqueness of California history and California nature in a barley field.

What American Pioneers Did with Barley.—Perhaps the first thing they did was to lie about it: however, the reader must judge. At the first fair ever held in California, which was in San Francisco in 1851, a sample of barley was shown from San Jose valley of which it was said: "This sample represents a crop of 965 bushels from less than five acres." As this would be 200 bushels per acre, we do not pass upon its credibility. Can any reader support it from experience or good report? At the same fair another sample was shown "representing a crop of 53,000 lbs. from 12 acres, grown by Madame Scoofy of Sonora." As this would be about 100 bushels per acre, it is reasonable, for such a crop has been frequently reported at that date and since then, also.

At the same fair there were mentioned stools of wheat and barley "with 150 and 200 mammoth stalks from one root—the product of single seeds": which is also credible. And the free-stooling of barley during our long winter-growing season is matched by the succession of



Barley, Sacked and Stacked Where Threshed, Is Safe Outdoors in California for Two or Three Months. A More Up-to-date Method of Harvesting Is Illustrated on Page 10. Tractors and Combined Harvesters Thresh the Grain and Spread the Straw Without Handling It. The Latest Is to Haul Grain from Harvester to Elevator Without Sacking It.

volunteering. In 1856 a committee of judges for the State fair made this memorandum: "Near Santa Clara on the road to Alviso we saw a field of fifty acres of volunteer barley. This is the fifth crop from a single sowing and the yield this year has averaged 43 bushels to the acre. It has received no special care."

It is difficult now to appreciate the sensations of pioneer farmers who came from parts of the country where barley was abandoned because it required the best land and best care to get even 20 bushels to the acre! Here was a man reaping annually more than twice that much barley from seed he sowed in 1851 and had never given the field anything but a little harrowing since that date. He must have thought he had discovered perpetual motion in barley!

But the greatest thing the pioneers did with barley was to quickly make California the chief producer of the grain in the Union, for the California product in 1857 was 5,980,485 bushels, while the whole United States in 1850 produced only 5,167,000 bushels.

Why So Much Barley?—We have stated that early Californians, both Spanish and American, took to barley instead of oats because the former was easier to grow in the more arid parts of the State, where the early agriculture was undertaken. This was owing both to acceptance

(Continued on page 9.)

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EDITORIALS

LOCATION OF FEDERAL LAND BANKS.

FULFILLING its promise of prompt action the Federal Farm Loan Board has attained the first great transaction devolving upon it by the Federal Farm Loan Act of Congress, approved July 17, 1916. It has visited all parts of the country and taken testimony therein. It has carefully considered its findings and hearings, in the light of its original conception of the purposes which the new national legislation desired to attain, and it has located the twelve Federal Land Banks as follows:

First—New York, Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, and New Jersey—at Springfield, Mass.

Second—Pennsylvania, Delaware, Maryland, Virginia, West Virginia and District of Columbia—at Baltimore, Md.

Third—North Carolina, South Carolina, Georgia, and Florida—at Columbia, S. C.

Fourth—Ohio, Indiana, Kentucky, and Tennessee—at Louisville, Ky.

Fifth—Alabama, Mississippi, and Louisiana—at New Orleans, La.

Sixth—Illinois, Missouri, and Arkansas—at St. Louis, Mo.

Seventh—Michigan, Wisconsin, Minnesota, and North Dakota—at St. Paul, Minn.

Eighth—Iowa, Nebraska, South Dakota, and Wyoming—at Omaha, Neb.

Ninth—Oklahoma, Kansas, Colorado, and New Mexico—at Wichita, Kansas.

Tenth—Texas—at Houston, Texas.

Eleventh—California, Nevada, Utah, and Arizona—at Berkeley, Cal.

Twelfth—Washington, Oregon, Montana, and Idaho—at Spokane, Wash.

The law provides that each of these district land banks shall include in its title the name of the city in which it is located and it shall be organized, and "temporarily managed" by five directors appointed by the Federal Loan Board. After the subscriptions to the stock in the district bank shall have reached the sum of \$100,000, the bank shall be given permanent form by the election of six directors, to be known as "local directors," by the stockholders and by the appointment of three directors by the Federal Loan Board—constituting a permanent board of nine directors: the terms of one government and two local directors expiring each year. The local directors will be chosen by the national farm loan associations from lists of candidates furnished them by the Farm Loan Commissioner at Washington, and these lists shall present the names submitted by the farm loan associations in response to a request for nominations which the Commission shall send to each of them at least two months before such election is held. In this way the loan associations make the nominations and elect the local directors of the district bank as their representatives. The stockholders in the district banks will be chiefly the borrowers who are members of the loan associations, who are required to subscribe for such stock to an amount equal to 5 per cent of the loan made, and which will be deducted from the face of the loan made to each. Other subscriptions to stock in the district bank shall be open to individuals, firms or corporations, approved by the Federal Loan Board, or to the government of any State or of the United States. At least one director of a district bank shall be a practical farmer, and no director shall be,

during his continuance in office, an officer, director, or employee of any institution, association, or partnership engaged in banking or in the business of making or selling land mortgage loans. The management of the land banks is to be kept from association with other banking institutions, and presumably out of the sphere of influence of such institutions.

Thus it appears that the organization of the twelve Federal Land Banks awaits the appointment of "temporary directors" by the Federal Loan Board for each of them. It has been announced from Washington that such appointments will not be long delayed.

* * *

WHY AT BERKELEY?

COURSE the Federal Farm Loan Board could not be reasonably expected to give the data determining its choice of locations, after having studied situations for months as its members have done. Such an undertaking would not soothe contention, but simply give it a fresh run. Therefore, everyone is at liberty to comment upon the reasons for a selection as he sees fit, and to win others to his view if he can. To us it seems clear that Berkeley was chosen for several reasons, which may include the following:

First, its enclosure in the greatest financial center of its district, to which some of its transactions must stand closely related.

Second, its possession of sources of accurate knowledge of soils, climates, production, and producing problems beyond any other city in its district. This is secured not alone through the agricultural and related departments of the University of California, but through the local habitation in Berkeley of branches of the United States Department of Agriculture which have to do with research and administration throughout its district and through proximity to other branches, with similar wide scope, which are established in San Francisco, of which Berkeley is a prominent suburb. As the land bank will be concerned directly with what land is and what land can do, not alone in a single farming region, but throughout a district of four very large States, which Berkeley knows better than any other city in any of them, it seems natural that administration should proceed from a point thus qualified to administer.

Third: Berkeley and San Francisco give domicile and activity to more men who have made rural credit a subject of systematic study and traveled observation for years than any other point in the district. These men have been widely accepted as leaders of public opinion on the subject in the district. It includes both men and institutions committed to making this type of banking, which is new to this country, widely influential and successful. They are of this mind because land banking of this type is not banking for what can be made out of it, but banking for what it can help rural men and rural institutions to do for themselves and for the public at large.

We say these things, not, of course, from any knowledge of the reasons upon which the Federal Farm Loan Board acted, for neither we nor anyone else may ever know those reasons, but simply from our own conception of the relation of things.

* * *

WHAT IS A LAND BANK LIKE?

WE FEEL quite tender toward Sacramento in her manifestation of disappointment over vanished expectations of securing the location of the District Land Bank. It usually does not comfort a lover to tell him that the unwilling object of his adoration is neither a Venus nor a Minerva; but we must ease our conscience of the facts. A land bank is not much of a municipal ornament, nor a great gratification of civic pride. As financial and other institutions go, it is not even a good-looker. It will build no steel-frame skyscraper veneered with marble; it will not even build a warehouse of reinforced concrete. It will have no polished brass plates on granite plinths to flash its name in the public eye. It will have no ponderous mahogany doors, disclosing tessellated tiles, as the directors intrude their 1917-model tail coats, with flashing watch-seals swinging tangential to their frontal curves. It will open to the

visitor's eye no perspective of onyx, sustaining glittering grill-work, through the wickets of which glad-handing tellers dispense sweet smiles to depositors from beneath their polished pates or bristling pompadours. There will be no lackeys in onree katz liveries, bowing lady clients to consultations with investment experts, no perfume of roses clouding forth from lady's parlors, no aromas of Partagas stealing from directors' rooms, no jingle of coin, no laughter over well-worn financial repartee—in fact, nothing which constitutes a great city bank a thing of metropolitan joy and satisfaction.

A central or district land bank has no depositors, no checking accounts, no short loans as favors to those well introduced, no generous gifts to purposes of public benefit—nothing whatever of personal interest. Its silence is broken only by the shuffling foot-falls of mail carriers and other transportation emissaries. It deals with no man individually; it is simply a deep, dark financial mud-flat, through the sloughs of which millions ebb and flow from distant sources where there may be blue waves playing upon sunlit sands. After quite a study of central land banks in Europe we concluded that the establishments were combinations, in various ways, of two elements: an undertaking parlor and a bookkeeping school. The managers sit glum between caskets of reports on titles, values, mortgages and bonds. The clerks sit everlastingly with their fingers on the books and their eyes on the clocks. Really a land bank has not even the human interest of a sand bank, for that may sometimes resound with the notes of traffic, the straining of the steam shovel, the rattle of gravel, the hooting of the switch engine, and the cries of workmen. Not so with the land bank; its traffic is only spectral; it is the perch for ghosts of transactions enacted elsewhere. Why does Sacramento mourn the loss of such a sepulchre?

* * *

CHANCE FOR LIGHT IN A DARK PLACE.

A FEW days ago a traveling representative of the Pacific Rural Press reported to us that he had met a grower of fruits in Sacramento county who complained that he was not getting honest returns from a San Francisco commission merchant; that he had shipped fruit which was sold on a certain day, and returns made to him on a basis of 50c per box. Afterwards a visitor told him that he had bought the fruit with his brand on that day for \$1.25 per box. This is a very old trouble, and this is not the most dramatic phase of it, for growers have chased their own shipments into the market and have bought the stuff themselves (incognito) for much more than the price the seller afterwards reported to them. Against such dishonesty, which is more or less frequent, the grower has had no practicable remedy. There has been, of course, a remedy at law, but the plaintiff would have to hire a lawyer, pay the costs of testimony, etc., etc., and come up against a defendant who had nothing subject to recovery. This expensive form of vain relief does not commend itself to a grower, and so he has had to vent his feelings as best he could; change his commission merchant and go through the same experience again perhaps. This has long been a very sore spot on the marketing end of production in nearly all food lines. It has been carried to the Legislature from time to time, and efforts have been made to require receivers to report prices and names of purchasers to their consignors, but receivers have convinced the Legislature that such recourses are impracticable. It is very fortunate that a proposition now comes forward which we believe will receive the enthusiastic support of producers. Colonel Weinstock, State Market Director, will request the Legislature to pass a law which will give him power to inspect the books of any commission house wherever the shipper is not satisfied with the return from his produce. With the new law in effect the State Market Director will be able to make a thorough investigation of such cases, and decide each controversy on its merits. Such a law, with proper penalties, would doubtless force dishonest receivers into some other line of crookedness, against which the public may have less effective protection.

THE CHANCE IN THE NEXT BEST.

INQUIRY for fruit trees is very keen, and nurseries which are befriending the public with announcement of their offerings in our advertising columns are already meeting planters' drives which make them wish they had budded a lot more stock in 1915, or even last June. Of course, the demand is running unevenly and not always reasonably, for many planters are plungers on the basis of what they consider "straight tips," instead of thinking out for themselves and forgetting that experience has shown that during a run of years there is not very marked, if indeed there is any, superiority among our leading commercial fruits in the line of extreme and average profitability. All good standard varieties are good plantings in the proper places for them. For ourselves we should be a little scared of planting what everybody advised us to plant, for other things being equal, there is always a chance of reaction from what everybody advises, because of the very prevalence of the action

which it enjoins. If, then, of several fruits to which really good fruit soils and situations are usually adapted, we should find everyone else had emptied the nurseries of a certain tree, we would probably be just contrary-minded enough to plant something else—providing we kept well within the lines of cultural success and commercial suitability, as our best judgment discerned them. Of course we do not advise freak planting of untried and undemonstrated fruits, nor even unreasonable indulgence in novelties of standard fruits, because no one else is doing it, and is thus leaving open a great chance! What nobody else is planting has probably not yet been demonstrated to be worth planting. And yet here is still an opening with well-tested fruits which are not at a moment the best sellers at the nurseries, and to them planters should give due consideration. If the blondes are all snapped up, you may be even happier with a brunette. It is certainly a reasonable risk to take, for the world goes 50-50 that both are good.

By
the Editor

QUERIES AND REPLIES

Inquirers Must
Give Full Name
and Address

Rotation a Local Question.

To the Editor: You advise a rotation of crops and suggest several different ones for our more fortunately situated brothers in the valley districts. Is there a rotation of crops you could recommend for this section?—C., Amador county.

Rotation is not only a local question as to kind of land you have but also local as to your own outfit for making use of the crops. The simplest rotation is to grow hay or grain one year and seed early with winter-growing forage plants and run stock on the land the following year. Of course if your land is naturally seeded with such forage plants, as is usually the case, you will save money and therefore make more by this alternation of grain and pasture. Another term of a longer rotation would be to get a rainfall crop of stock beets by planting right after the fall rains, unless you get too low December and January temperature. This depends upon your elevation. It can generally be done at least up to 1500 feet elevation. Or you can winter-work deeply and follow, after coldest weather is over, with early planting of potatoes. You can sell or eat the potatoes, but you need stock to make use of the beets. After a winter crop of stock beets you can get some sorghum unless your land is very dry. This running comment may serve to show that you must not expect very definite rotation prescriptions in this State. Think it out for yourself, keeping an eye on what your thinking neighbors are doing with good results.

Between Times for Hogs.

To the Editor: I would like to know what there is that I can grow, here in the foothills, to carry my hogs from the time the grass dries in the spring until barley is ready for them to hog down, and from the time the rains start in the fall, after the acorns are gone, until the new grass gets high enough for them to feed on.—Reader, Jackson.

You can probably grow stock beets in winter, from fall-sowing, and have them ready for spring feeding. If there is moisture enough you can plant them again in the spring for late fall feeding. Also, if you can get water even on a little good land, you can grow a lot of squash which can be kept for use after the acorns are gone. For green feed, to start after the fall rains and to come quicker than wild pasture, probably nothing is better than a sowing of rye.

Probably Only Winter Grazing.

To the Editor: Will you advise me which is the best seed mixture to sow on burnt-over foothill brush land lying two miles east of Jackson, in Amador county? We also have some land on which we are cutting the brush preparatory to running goats, and which we want to seed. I read your answer to "H. M., Amador Co." in your issue of July 22, 1916, in which you mention "bur clover, wild oats, filaree, etc." but do not state the proportions of each to sow. How would it do to include *Bromus inermis* and sweet clover? Could rye grass be included in the pasture mixture?—D. C., Jackson.

You can probably count on nothing but winter pasture on such land without irrigation. That you can get from bur clover, filaree and wild oats and you might get something from adding sweet clover which would hold verdure longer into the dry season than the others. *Bromus inermis* and rye grass would also make something of a fight but would die during the summer—unless irrigated. You can sow 5 lbs. of filaree, 10 lbs. of bur clover and 50 lbs. of wild oats to the acre. If you do not dry-feed them they will thickly reseed the land they occupy and a good deal of the rest of the ranch for the second year. You must not expect to get summer verdure on dry uplands without irrigation.

Catching-in on Unbudded Seedlings.

To the Editor: To use some almond seedlings not budded last summer I am wondering whether I can work them with a "pushing bud" (as described on page 76 of California Fruits) leaving them in nursery to form yearling trees next fall or bench-work with whip grafts and set out in place as fillers throughout the orchard. I experimented last spring with the latter method without success, due, I believe, to scions drying out before the sap flow from transplanted roots reached them. I am wondering if this method, which appears better than spring budding and losing chance of getting trees into place, would be surer if grafts were put immediately in callusing frame until ready to set out in orchard. Probably the budded trees in nursery would be a greater asset at the end of the season than the "overlooked," scattered results of the second method. What is your opinion?—Reader, Live Oak.

We would not use either of the methods you mention. The "pushing bud" is an interesting amateur method which takes a lot of time and gives a large percentage of failures. The root-graft we might try on the pear and apple (but not on the almond) and would plant in nursery and not in place. We would not put in orchard anything but a good yearling. The seedlings you mention we would June-bud; pinching the tips of some new shoots to get good plump buds earlier. Cut back and force growth on buds when seen to have taken.

Fertilizers for Inter-Crop Beans.

To the Editor: What kind of fertilizer can I sow to make beans grow better. The land is sandy and for years and years was sown to oats, barley, etc., till the land is not as fat as it ought to be. I have a lot of barnyard manure to put on. I know that is good but I have not enough to go over, and would like to sow a fertilizer that will help me get more for my work and if possible build the land by growing beans between pears. Some of this land has had beans, some alfalfa. I do not get enough to the acre of alfalfa to suit me, but beans seem to do pretty well.—E. L., Winton.

We would apply about half a ton per acre of a "complete fertilizer" and trust the trees to get the benefit of what the intercrop misses. If, however, you wish to figure on the crop's getting enough nitrogen from the manure and the wreckage of the preceding beans and alfalfa, you may use 500 lbs. of superphosphate and 200 lbs. of potash. Apply

this evenly after spreading the manure. It will help to grow a lot of green stuff, from the seed in the manure, and you can plow all in together in February or March and get it reduced by bean planting time. You have learned one good thing in the fact that beans like stable manure—when applied long enough before planting.

Beans on San Joaquin Plains.

To the Editor: Do you think the Lady Washington bean planted about July 1st would mature successfully on a rather heavy loam which holds the moisture all summer after being flooded and properly worked during June? The land is located near Ceres. In localities where the Lady Washington bean is grown how many pounds of seed per acre is planted and how deep should the planter be set: also for Pink beans?—D., Ceres.

It depends upon how many frost-free days you can count on after July 1 and whether you will run into too much fall rain for harvesting. You need something more than 110 good days to get a bean crop generally. Large white beans are rather treacherous on the plains and we should not try to start them in the fierce heat and drouth of midsummer—except in a well-tended garden or in a river bottom. Pink beans are much more apt to succeed. The depth of covering would be about one inch of well-pulverized loam and two inches of sandy soil—with a little more depth in both cases when planting as late as you propose. Large whites take about forty and Pinks about thirty pounds to the acre.

Double-Cropping for Fowls.

To the Editor: I have a 4-acre piece of land of sandy loam soil. What can I plant and have two good crops in one year and in what month to plant it? I am starting in the chicken business. Would you try cabbage for the first crop and Egyptian corn for the second? I have plenty of water.—P. R., Van Nuys.

Yes; cabbage makes a good winter-growing green feed. The plants should have been started with the seed two or three months ago to get results early. Perhaps you can find plants now which you can buy in quantity at reasonable prices. Why not put part of the land in barley and let the chickens harvest it next spring—breaking it down for them, if necessary? You ought to have no trouble growing milo, Kaffir or some other sorghum after you get the cabbage and barley off next May.

Manure and Alfalfa Sowing.

To the Editor: I have spread considerable stable manure on an old alfalfa field, intending to plow (soon) and reseed to alfalfa; but a friend tells me that he put some stable manure on a piece of land, sowed alfalfa seed and it burned up. Some he did not manure did fine.—G., Lakeport.

It is, of course, a mistake to plow under coarse manure just before sowing a fine seed like alfalfa and it will sometimes burn out grain to do that. As you probably have to sow alfalfa in your section rather late to escape frost it will be safe to plow in manure deeply now and work again fine and shallow just before sowing.

Red Spider on Beans.

To the Editor: I intend to plant some string beans in the spring but all vines around here for several years have their leaves turn rusty and fall off after bearing a few beans. What can I put on the vines early in the season to prevent it? They say it is red spider.—W. D., Middletown.

There is nothing you can do when planting the beans. Watch the plants closely and begin sulphuring the leaves as soon as you see the first signs of the spider. You can gather and burn or, better still, spread and plow under deeply now all the litter of the last crop.

California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau at San Francisco, for the week ending at 5 p. m., January 2, 1916.

STATIONS	Past Week	Rainfall Data		Temperature Data	
		To Date	Normal	Max'm	Min'm
Eureka	1.76	12.22	17.37	50	32
Red Bluff	2.20	9.96	10.33	48	28
Sacramento	1.78	6.13	7.30	48	32
San Francisco	1.51	9.11	8.56	50	40
San Jose	1.12	5.70	6.40	52	30
Fresno .....	.70	3.87	3.69	48	32
Independence .....	...	...	3.65	38	...
San Luis Obispo	2.10	13.70	6.16	60	30
Los Angeles .....	.38	7.20	5.40	62	36
San Diego .....	.23	2.35	3.28	62	40

Pointers on Cherry Varieties.

[Written for Pacific Rural Press.]

The struggle for survival of the fittest of cherry varieties in California, that has been going on since the days of gold, still shows no hope for the sour varieties except perhaps in Southern California, but much hope for the sweet varieties where growing and market conditions are favorable.

Cherries have been dried in Santa Clara Valley at least, but that industry is creating no comment, and is useful only for culls. Canning and shipping are the outlets for cherries.

The normal canned pack is about 1200 tons of Royal Annes and white varieties annually, and about 400 tons of the black varieties. The blacks are not popular because they color the syrup and become dull colored themselves. Cannery sometimes take them solely to get enough whites. A. E. Crabb of Alameda county, however, maintains that the Black Tartarian is the only variety for canning because it retains its rich flavor, while Royal Anne does not. But C. H. Bentley of the California Fruit Cannery Ass'n points out that the market demands a clear transparent syrup and a firm clear-colored cherry. Highly colored Royal Annes turn brown in processing and the consumer thinks they have been bruised. Nevertheless this variety commands about 50 per cent higher prices than the less firm and more poorly textured white varieties and the blacks for canning. However, one of the oldest and biggest cannery men in California once told us that it was a shame to put up cherries lacking in sugar, hard, and green as are demanded, and sell them to folks whose indigestion would be still further increased.

Growers of Royal Annes have the choice of picking early for canneries or later for shipment East. Most other varieties are less elastic in marketing opportunities. The soft whites are as hard to ship as to can, but since most of them are earlier, they bring high prices if in good condition.

In the shipping of cherries, California uniformly packs them in 10-pound faced boxes costing 10 to 15 cents a box for packing and a little more than that for the boxes. Some are put into pasteboard cartons at additional cost. These must compete, on the auctions, with northwestern cherries in pint boxes of veneering, packed only enough to put stems downward for the top layer, and 24 per crate. This is much cheaper and it avoids the pressure which in the California boxes often makes the face-cherries of white varieties turn brown. Royal Annes are more brittle and likely to burst under pressure in packing than those of more elastic skin and flesh like the Chapman.

Since cherries are the first deciduous fruit on Eastern markets, their prices are very high, wholesaling at over 20 cents per pound for some time. Thus it behooves the districts where early cherries can be produced to plant only the early varieties.

There is a keen rivalry between the Vacaville and Sacramento river districts to send the first shipment each season. Imperial Valley might

go earlier, but cherry trees do not seem to thrive there. In the Vacaville district, with no irrigation, only the early varieties seem profitable; and there are not many Royal Annes. E. H. Goepfert recently planted Chapmans and Burbanks because Bings are too late; and even Tartarians he figures would have to compete with the Chapmans from other districts. He notes that Chapmans and Rockports always have heavy crops, but the Burbank is a shy bearer. Fruit shipping records for one year kept by the Vacaville Fruit Growers' Ass'n show their shipments to have been: Belle d'Orleans April 21 to May 1, Chapman April 29 to May 13, Rockport April 28 to May 30, Purple Guigne May 4-12, Burbank May 6-23, Black Republican (Lewelling) May 15-31, "Bigarreau" May 16-25, Pontiac and Bing May 20-30.

Varieties recommended for Santa Clara Valley by G. W. Worthen, one of the most successful growers of the Willows district, are "Napoleon Bigarreau" (Royal Anne) like the old trees first planted here, for both

canning and shipping, Black Tartarian, Black Republican, and Bing for shipping." He defends the climate of Santa Clara Valley for these varieties; and warmer climates like Vacaville for the earlier varieties. Another successful grower there notes the regular bearing of Royal Annes, and heavy bearing but small size of Black Republicans in his district; though certain districts get size on this variety. He begins to pack May 10 to June 1, shipping his blacks to Eastern auction and his Royal Annes to auction or cannery, whichever pays best. When he ships Royal Annes, he waits till they are "red clear through."

In the Sebastopol section of Sonoma county, L. Hillis, one of the best growers, recommends Black Tartarians and Royal Annes, for canning only. Royal Anne predominates there, and "as a rule, Tartarians are planted for pollenization purposes only."

In Napa county, Royal Annes and Black Tartarians are recommended by County Horticultural Commissioner J. J. Fox for canning and eastern shipment. These varieties should be interplanted to get them to set well.

Distillate Spray for Black Scale.

[Written for Pacific Rural Press.]

Black scale is about the only insect pest on apricots in Ventura county according to Horticultural Commissioner A. A. Brock.

The usual means of control is a distillate-soda mechanical mixture with water, applied as a dormant spray. For this scale, distillate is considered better than crude oil; and crude oil would have to be emulsified with soap which would add to the expense.

Seven pounds caustic soda is dissolved in a small amount of water and added with 12 gallons of 28 degree distillate to about 185 gallons of water already in the tank. The distillate last fall was costing 5 cents in carlots at Los Angeles, though Ventura county got a carlot at 3½ cents according to Mr. Brock. Soda cost 6 cents a pound.

It is very necessary, in using such a mechanical mixture, to keep the agitator busy all the time while spraying. If it stops awhile, the oil separates and if not thoroughly

stirred before spraying again, comes out nearly pure, which damages the trees. It is known to have killed some trees by accumulating around their bases. Likewise the spray hoses should be emptied back into the machine.

One grower in Ventura county had an 180-gallon spray rig which he thought held 200 gallons. Mixing his spray for 200 gallons, he got it too strong and did considerable damage before a horticultural inspector found the trouble. The tank was then built up and a good agitator put in.

For black scale on olives, a distillate miscible oil or emulsion or mechanical mixture is the best and cheapest. A crude oil emulsion sticks to the leaves and makes them turn yellow and drop according to State Horticultural Commissioner G. H. Hecke, who has tried it. Distillate soon evaporates. It is more penetrating while it lasts, but does not clog the leaf pores too long.

Light Regular Pruning.

[Written for Pacific Rural Press.]

Out of the varied ideas of pruning orange trees will come a general system which will be recognized as best. At present one man believes in practically renewing his trees every three years, while another claims this is unnecessary, that they should be pruned and generously thinned out every year. Among the latter is Fred Arth of San Bernardino county, who has a most healthy orchard and gets good crops regularly, even from his Valencias. His regular crops are supposed to be due to his regular pruning, plus regular fertilization and other care.

He does not like to set back the tree by pruning the top off all at once, however necessary this may seem on some orchards previously

allowed to make "umbrella tops" from sucker wood. Moreover, he maintains that fruit which comes close to the trunk or main limbs is always coarser and does not pay for the cost of raising and picking it. This is at variance with the general opinion; but it leads him to keep the main branches clean. Anyhow, if inside fruit wood is allowed, the pruners are likely to leave suckers. He aims to get all the fruit in a thick blanket of foliage and fruit wood over the outside of the tree. He takes out all inside limbs which are dying back or not bearing. He wants to see through the trees.

Pruning is done in February after frost and before blooming, or else after fruit is well set.

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Uncultivated Hillside Apple Orchards.

To the Editor: Some of the apple growers of the Mendocino coast are giving up the idea of cultivating their orchards because orchards situated as they are, on hillsides or at least on sloping ground, wash too much with the winter rains; and the more intense the cultivation the more the wash and the greater the loss. The ruts usually start with the first rains, following the wheel tracks; and by spring they have grown into gullies. If these are leveled up by drawing in more good soil from the sides, the next winter will take it all out again. The only way to check this, then, is to haul in rocks and that will interfere with future cultivation.

A plan under consideration, and which has been adopted by some, is not to plow the orchards at all but allow them to grow up to grass and weeds. This crop is not mowed, but left standing. Then they work around every tree—with a hoe heavy enough to cut deep—for three or four feet in diameter. This loosens the tree in the collar, gives it a chance to breathe and allows the rain to penetrate the ground. When the leaves fall in a cleanly cultivated orchard, they blow off until they find lodgment somewhere. By this method they fall in the grass under the tree and stay to mulch and fertilize it. If a grass

fire should sweep through, the trunks of the trees are protected. As an illustration, there are numerous small abandoned orchards in these hills planted by the timber workers years ago. Most of these are never pruned or cultivated and yet they bear every year. Your comment on this will be highly appreciated.—C. Q., Gualala.

A winter cover crop is highly desirable in any orchard—much more so where the soil washes. But one of the legumes planted "a-purpose" would be far better than a natural growth of grass and weeds except whether bur clover or other legume takes practically complete possession.

Without irrigation, however, there is grave danger that cover crops of anything in summer would rob the trees and fruit of needed moisture. So the winter cover crop should be plowed under before the ground gets hard in spring, and a dust mulch or some other kind of a mulch maintained.

You would probably not try to make a living from the abandoned orchards you mention, without pruning, cultivation, etc.

Hoeing as you propose around old trees would be of doubtful value except perhaps for fire. A tree doesn't breathe around its collar, but it often gets crown gall and other troubles through injured spots.

Getting a Poor Kill of Insects.

[Written for Pacific Rural Press.]

Two prime causes of a poor kill of orchard insects are mentioned by Stanley James and J. D. Crummey of the Bean Spray Pump Co. The first is indifference to their presence and entire lack of spraying. The second is delay of spraying until conditions of work, weather, and ground are such that a thorough job of spraying is not done.

Methods, equipment, and materials are now so well standardized that only neglect can be given as the reason for pest-ridden, mossy, diseased orchards, except in case of bacterial and so-called "physiological" diseases.

One reason that delayed spraying is less effective, according to these gentlemen, is that time is required by crude oil sprays to do all of their work. According to Mr. Crummey, probably 80 per cent of the kill of insects is accomplished in the first two days after spraying. The volatile oils of the crude oil evap-

orate mostly by that time and suffocate the insects with their fumes. The rest of the kill extends over six weeks, killing by slow penetration and clogging of the pores.

According to this, there should be at least two days of good weather after a spraying, to get maximum benefit; and six weeks more before the spring activities of the bugs begin.

Pressure and Nozzle.—Plenty of pressure is especially important to get the "red spider" (brown mite) eggs; and a mist spray is not effective for winter use. Mr. James recommends a Bordeaux type nozzle which makes a fan-shaped sheet of spray. The fan of spray can be run vertically against the limbs with minimum waste; and should be applied directly to all sides of the limbs. Then it can be spread horizontally over the top of the tree to catch any tips which escaped the vertical spraying.

Cheap and Efficient Refrigeration.

[Written for Pacific Rural Press.]

The problem of refrigeration on a small whole milk dairy is often a vexing one because of the expensive equipment required.

On the Laurel Dairy in San Luis Obispo county this has been satisfactorily overcome by partitioning off a refrigerator room from the main milk room with concrete.

The refrigerator proper is seven feet high, five feet wide and six feet long, having two two-inch walls with a space between for air circulation.

The entire structure is of concrete having concrete floor, also tight-fitting thick door which opens

out into the milk room.

Cooling is accomplished by the use of ice, 300 pounds of the latter being required every 10 days in order to keep the temperature at the desired degree.

As the milk is drawn from the water cooler it is bottled and then put into crates, the latter are piled onto a small, iron-wheeled truck the proper length and width to fit snugly into the refrigerator, allowing space for the ice. It is held in this manner till time to put on the wagon for delivery and reaches the consumer at a satisfactory temperature.

TALKS ON Nitrogenous Fertilization

Number 6

When should Sulphate of Ammonia be applied?

SULPHATE OF AMMONIA

For ORANGE groves in regular bearing the ideal way is to divide the total amount, say 8½ to 10 pounds per tree, into several portions distributed over the growing season. One may be applied about six weeks before blossoming, one when the petals begin to fall, and subsequent ones in June and in September. If labor cannot be spared for this, the first and last periods will probably give the best result.

For LEMONS, as they are in continuous bearing, even more frequent applications are advised—say, six or even eight—after irrigation.

For GRAPEFRUIT, the special requirement is that they shall size up well, hence a large portion of the total amount may be applied when the fruit is half grown.

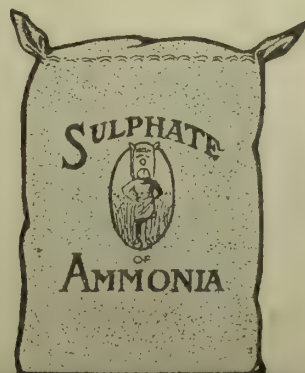
For TRUCK CROPS, broadcast Sulphate of Ammonia, 100 to 300 pounds per acre, before seeding or setting out the plants, or divide into two portions and apply one before planting, the other between the rows when the crop is well started.

For FIELD CROPS, apply broadcast by hand or machine at time of planting.

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Manzanillos are Favored for Orchard.

[By Frank Simonds, Sec. Los Angeles Olive Growers' Ass'n.]

Relative to our experience with the Manzanillo variety of olives, our orchard consisting of a few thousand acres, located at Sylmar, is about half planted to the Manzanillo variety and the results obtained from that portion of the grove have exceeded the results obtained from any other variety of olives we have planted. The advantages to be gained are as follows:

(1) This variety ripens about three weeks earlier in the season than any of the other pickling varieties, consequently the fruit can be put on the market a little earlier than the competing varieties and thus obtain any benefit that may be derived from having the fruit on the market before the bulk of the crop is ready.

(2) This variety on account of ripening a little earlier permits the packer to prolong his season of packing olives and thus permits him to utilize his machinery and equipment a greater number of months in the year than would be possible if the Mission variety only was grown.

(3) This variety, by ripening a little earlier in the season permits

the fruit to be harvested before any damage is done by frost, in those sections of the State where frost is likely to occur.

(4) We find the Manzanillo fruit can be more easily brought to the larger fancy sizes than the Mission variety and inasmuch as the larger sizes are in demand by the public, and bring the highest prices, the Manzanillo is favored in this respect.

(5) As to flavor of the fruit after it is processed and cured ready for the market, we find the Manzanillo fruit, if properly handled, has as good a flavor as any other variety of fruit grown.

(6) The Manzanillo for us is more regular in its crops under adverse conditions than any other variety of fruit grown for pickling purposes. We most always expect, if we have any fruit at all, that the Manzanillo olives will never fail us.

To any one planting an orchard, we advise a division of varieties, planting a portion of the trees to Manzanillo and another portion to Mission olives. by doing so they will not all ripen at the same time, thus allowing the farmer more time in which to harvest his crop.

Tragedies on Peach.

To the Editor: Last spring I grafted Tragedy plums to Muir peach trees. These trees were possibly seven years old. Early in the summer and fall many of the plum growths broke away from the graft, taking even the graft itself. That is, the entire growth would pull right out of the tree, indicating that no union had been made. Since then I have spoken to a number of fruit men, as well as nursery dealers, and am told that as a rule plum grafted to peach is not satisfactory, that is, a good union will not be made.

Some have suggested that we use what trees seem to have a perfect union and take out the others, entirely replacing them with new trees. Others recommend to take out all the trees, stating that though conditions at this time might seem favorable it would be necessary at best to prune closely so that there would not be too large a crop at any time, and even then the weight of the trees would be too much and would pull away on account of faulty union. Others recommend the necessity of tying the different limbs together within a year or two with wire so that the wind would be unable to play its force on any one particular part of the tree. The trees now seem to have a good top, and as

I examined them yesterday apparently the union seems to be all right, though after speaking to a number of men who ought to be well posted in matters of this kind, I hardly know just what to do. There are 216 trees, and it seems a shame to tear these up, but at the same time, if in the course of five or six years it is necessary to replant, it would be better to do this now.—I. C. A.

A number of European plums fail to make good union on peach; and from your experience, we should say that Tragedy is one of them. Did the grafts blow out in a big wind? Was the cambium of the grafts knit into that of the stock,

or just loosely attached? Let's hear from readers, not only on this sub-

ject but also on how to make Tragedies bear well and regularly.

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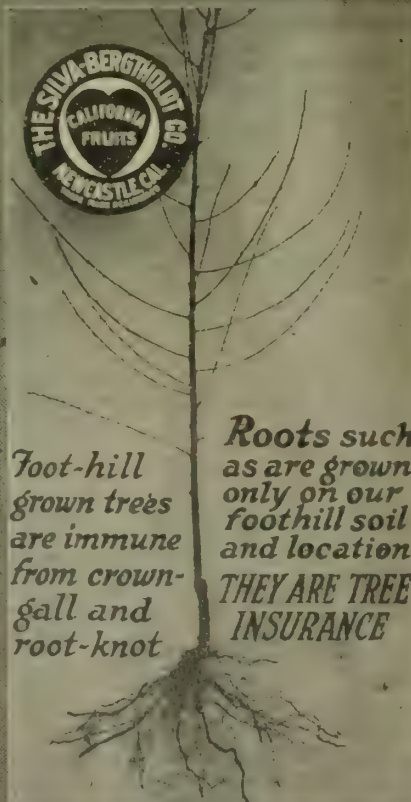
PEAR PRUNING TO CATCH THRIPS.

[Written for Pacific Rural Press.]

"Year before last we had an awful lot of thrips in our pears," says A. C. Tucker of the F. H. Buck Co. in Solano county. "They took the crop in one corner.

"We have so much pruning and winter spraying to do that now we leave our pear pruning until the buds are swelling and some in bloom. That catches thrips in the buds where we can burn them. To get still more of the insects, we leave the prunings on the ground a half day to trap those that are still coming up."

This does not overcome the need of spraying for thrips in spring, but it minimizes the number that might escape the spray and injure the crop.



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PEARS OR APRICOTS FOR WET PLACE.

To the Editor: Do you think the apricot would do well on this heavy soil where the almond seemed to die on account of sour-sap? What root-stock would you advise, also what variety of apricot? Do you think Bartlett pears would do successfully on that heavy soil? The hardpan has been blasted.—V. E. K., Sacramento.

Apricots on your heavy soil where the almonds die on account of sour sap will probably do very well if put on myrobalan root, which does not take well with the almond tree.

For apricots on well-drained soil, apricot or peach root would be most desirable. Apricot root is very well liked by gophers and peach root is not, so if you are much troubled with these rodents, it might be better to use peach root, if your drainage is good.

Bartlett trees are generally planted in the low wet places in orchards where other fruits would not grow, and the chances are you will be well satisfied.

NITRATE OF SODA SETS ORANGES.

"Three or four pounds nitrate of soda scattered around each tree when the blossoms are opening will set the fruit," said C. C. Chapman of Fullerton, speaking especially of Valencia oranges and especially of old trees which have been more or less starved.

"But my notion is that an orange tree ought to have enough inherent strength without such stimulation, to both continue its growth and set a heavy crop of fruit."

The Experiment Station has shown the danger of long-continued use of nitrate of soda alone, although they also say that perhaps some combination may be found which will neutralize its injurious effects.

SPRAYING FOR GRAPE MILDEW.

To the Editor: I have a spray outfit and am spraying trees for blight. What I want to know is what can I spray vines with for mildew? The vines are old and the mildew gets worse every year. I used sulphur several times during the season with poor results. I would deem it a great favor if you would tell me of something to use as a spray. What time of the season is best for spraying for mildew?—W. L., Fowler.

Winter spraying for grape mildew will be unsatisfactory because of the shaggy bark and because of infection during the growing season from neighbors. Spray with 12 pounds atomic sulphur per 100 gallons of water when shoots are about six inches long and repeat the spray when first signs of mildew recur.

TOPS CITRUS TREES EARLY.

[Written for Pacific Rural Press.]

We have occasionally seen trees and whole blocks of citrus orchards killed by cutting them back at the wrong time for the purpose of growing new sprouts in which to insert buds of better fruiting strains.

A warning not to cut the tops off too late in the season is given by J. C. Perry of San Bernardino county. He has noted that otherwise they sunburn more or less, and the

new growth is stunted, even though the stubs and trunks are white-washed. The best time for Navels, he thinks, is right after the fruit is off in March or April.

SPRING CARE OF GRAPES.

[Written for Pacific Rural Press.]

Making grapes leaf out quickly after frost danger is considered past is the practice of A. H. Hevener of Imperial county, who has three acres of Muscats and Malagas. He leaves them alone after pruning about mid-January until he is ready for them to grow. Then he plows a furrow as close as possible on each side of the vines. These furrows are then flooded, because winter rainfall here

is light. Then the dirt is turned back into them. Mr. Hevener says this brings the shoots out quick. He did it early in March last year.

If the weather is warm, they bloom in a week or 10 days. No more irrigation is given till the berries are the size of buckshot, as it is considered that irrigation during blooming prevents the fruit from setting. Suckers are rubbed off three or four times before the grapes are sized up, because they rob the fruit. It is easy to sucker three acres in less than a day, but if they are allowed to harden, they will have to be cut, and will be hard to find among the other growth.

Plant only rooted trees in place.

PEACH ROOTS AFFECTED BY DIFFERENT TOPS.

There is a difference in the growth of roots with different tops, according to C. W. Van Gelder of the Central Nurseries Co. in San Joaquin county. His observation is that a peach root with peach top grows straight down; while with an apricot top it spreads all over.

Tragedy on peach root stood more water than peach on peach root; and the same is true of any other fruit that makes a good union on peach, says Mr. Van Gelder. He had a block of peaches and a block of plums, both on peach roots in a low wet place. Every peach tree died; while the plum trees were not hurt.



Plant Apricot TREES

THE COMMERCIAL PLANTER—THE MAN WHO PLANTS IN LARGE QUANTITIES—KNOWS THAT HE MUST GET A PROFIT ON HIS CROP. THE HIGH PRICES PAID FOR APRICOTS THIS PAST SEASON IS BUT A MERE INDICATION OF WHAT IS ALMOST A CERTAINTY IN THE YEARS TO COME—AND THAT MEANS PROFIT IN A LARGE SENSE FOR EVERY GROWER. As California has practically a monopoly on Apricot culture—due to climatic and soil advantages—there are enormous possibilities before the man who plants now.

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Field Eradication of Bermuda Grass.

[Written for Pacific Rural Press by W. F. A. McIntyre, Thermal.]

I noticed in your paper that you are interested in methods of eradicating Bermuda grass. You may then care to hear of the essential features of the best practice in this part of the State.

I have been successful in totally destroying Bermuda grass in infested fields by the following method, which is advocated among the most up-to-date ranchers here as the best for this region.

First, as to certain characteristics of the grass which offer an opening for an attack: there are two things which Bermuda grass cannot stand; namely, exposure of its roots either to the heat of the summer sun or to the frosts of winter. Other points to be borne in mind are: 1, that the grass will stand prolonged submergence under water; 2, it will come to the surface from a considerable depth beneath the soil; 3, it will endure more white alkali than nearly all cultivated crops.

Remembering these characteristics, the procedure is as follows: The field containing the grass is pastured closely during the spring months, allowing it to dry out. This weakens the vitality of the grass and causes the rootstocks to grow nearer the surface. While the foregoing is not absolutely necessary, it helps materially by weakening the grip of the plant.

In early summer, or as soon as the ground is almost completely dried out, the field is plowed with a turning plow as shallowly as possible (about three inches), using care to

cut the furrow slice off clean and turn it completely over. The grass must be cut off below the underground rootstocks and cut off completely. By plowing so shallow, the next operations are made easier.

After plowing, the field is disked with heavily weighted discs, going over it often enough to cut the sod up thoroughly; or else a disc plow may be used, set very shallow, going crossways to the direction of the first plowing. The latter is only effective in light soils, however, as in heavy soil a disc harrow is necessary to loosen the dirt on the grass roots.

Following the disking, the field is gone over once with a spring-tooth harrow to bring the pieces of grass to the surface. This spring-toothing is repeated at intervals of two weeks during the summer to insure exposure of all the grass to the rays of the sun.

In the fall the land is plowed deeply (the deeper the better) and planted to barley, onions, or other winter-growing crops.

A cultivated crop the following spring, or else a summer-fallow with thorough cultivation, to kill what seed sprouts up, should mean the end of the Bermuda. Of course, the success of the method, as with every other method, depends on the thoroughness of the work.

Here on the desert, Bermuda grass is considered not an unmixed curse. The humus furnished when the Bermuda sod is killed out improves the soil amazingly. In bad

alkaline areas, where plenty of water (as a flowing well) is available, a recommended method of procedure to bring the land under cultivation is as follows: After leveling and checking as for alfalfa, the ground is kept thoroughly irrigated and the Bermuda (whose seed is brought in by the wind) allowed to grow. This forms a fine pasture (the alkali having small effect on the grass). If kept in pasture for several years and thoroughly irrigated meanwhile, the alkali is lessened to an extent that will permit

the growing of other less resistant crops. The irrigation washes the salts downward and away, while the sod prevents their re-accumulation at the surface by greatly reducing surface evaporation. This method can be followed on land that is too salty for alfalfa.

Due to the success of methods (such as the one described) or eradicating it, ranchers here have not only lost their fear of Bermuda grass, but actually sometimes lay at its door some bumper crops raised on land where it has been killed out.

Farm Values of American Crops Dec. 1.

[Written for Pacific Rural Press.]

The farm value of 24 crops for the United States on December 1, 1916, was \$7,642,000,000, as against \$5,891,000,000 a year ago, according to a telegram sent by the U. S. Dept. Agr. Statistician to the Geo. W. Herbert Co. of Chicago, and forwarded to Pacific Rural Press. Seven cereals, corn, wheat, oats, barley, rye, buckwheat, and rice, total \$4,246,000,000, as against \$3,426,000,000 a year ago. The hay crop, based similarly on farm prices Dec. 1, was \$1,162,000,000, as against \$1,056,000,000 a year ago; cotton lint, \$1,080,000,000, is against \$604,000,000; vegetables, potatoes, onions, cabbages, \$500,000,000, against \$289,000,000; fruits, apples, pears, peaches, oranges, cranberries, etc., \$301,000,000 against \$274,000,000; miscellaneous field crops, \$352,000,000 against \$245,000,000 a year ago.

Farmers should be great buyers of

farm supplies and machinery in this year of prosperity.

PROTECTED NEWLY-SET GRAPEVINES FROM RABBITS.

[Written for Pacific Rural Press.]

Rabbits got 2200 out of the 3500 grapevines B. H. Fisher of Kerman planted in the spring of 1914. He had almost a perfect stand at first, but replanted 2200. The rabbits took lots of these also; but they have not bothered the vines replanted in 1916. After replanting the rooted cuttings last spring, he set paper sacks down over them, tearing the bottoms, and leaving the open ends up. A little dirt thrown into the sacks held them in place, and the vines thrived; but the rabbits were afraid of them. Some of the sacks remained all summer and fall.

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Ascolano Olive Trees

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Thrifty, "stocky" trees; free from "blight" and other diseases; grown in rich sandy loam soil—producing the finest root system: Trees, that when planted, will make a quick start and vigorous growth. Write for prices on the number, size and variety desired.

Almond Trees

Extra fine stock: Clean, thrifty and well rooted.

Best Commercial Varieties
No Plus Ultra, Jordon, Nonpareil, Texas Prolific, I. X. L., Drake's Seedling, etc.

Will make you attractive prices on any quantity, size and variety. Write TODAY, stating your "wants." Can make immediate shipment.

The Ascolano (Queen) Olive, is the largest and best of all ripe pickling varieties: "large as a French prune and much like one in shape." On account of its desirable size, excellent quality, attractive appearance, it meets with ready sale at fancy prices. Ripens early.

Every Olive orchard should have, at least, one-third Ascolano trees; and, in time, will prove your best investment.

Can supply extra fine trees, scientifically propagated from the best producing "strain" of Ascolano trees in the State. Prices quoted on application.

MISSION AND MANZANILLO OLIVE TREES.

Propagated from the largest and best "strains." Trees that will make a quick start and a vigorous growth; will bear early and produce a maximum of highest quality fruit.

Can supply all sizes, in any quantity at lowest possible prices. Write, stating your "wants."

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Acacia and Eucalyptus trees in all varieties. Write for "special" prices.

If desired will advise with you relative to your proposed plantings, and make you a low estimate on cost of same.

1917 Descriptive Catalog and Price list FREE.

Barley: California's Greatest Grain.

(Continued from first page.)

of aridity and to the greater resistance of barley to rust. But this was not the full explanation of the California rush to barley, which rests chiefly on the superiority of barley to all naked grains for stock feeding. By virtue of its kernel contents and its adhering to chaff, barley is really the only rival of oats, both in nutritiveness and in digestibility. Although in this conclusion Californians merely add their experience to that of the ancient Mediterranean peoples, they had a long struggle to convince others of the stock-feeding value of barley. It took a full half century, for instance, to convince the quidnuncs of the U. S. Army that barley was a wholesome cereal food for a government mule and if it had not been for the accident of feeding this noble animal in the Philippines with supplies from the Pacific Coast, where barley was abundant and oats were shy, it is probable that to this day barley would be banished from the official mule menu. But the vindication of barley must now be considered indisputable, for both the victorious grand champions from the University of California Farm at the Chicago show last month had barley as their chief grain feed. In this respect the victory of barley is illustrative of the issue California has had to make against the other states in many matters in which they are stupidly conservative. Such victory has usually had to be reached by knocking them down.

Relations of Barley and Wheat in California.—The barley points in this rivalry are these: barley was great first; wheat was great last and in greatest product for a single year, wheat has but a small margin.

The production of bushels of barley and wheat in California in the years cited has been as follows:

	Barley	Wheat
1850	9,712	17,328
1852	2,973,734	271,763
1860	4,415,426	5,928,470
1870	8,783,490	16,676,702
1880	12,463,561	29,017,707
1890	17,548,386	40,869,337
1900	25,149,325	36,534,407
1910	26,441,954	6,203,206
1915	39,440,000	6,688,000

As compared with other states, as already stated, California took the leadership in barley before 1860 and maintained it for half a century. In 1909 the leadership went to Minnesota and in 1915 North Dakota advanced above Minnesota, making California third in the barley list; but the differences between these three states are small and the unfavorable season of 1916 in the Northwest restored the leadership to California.

How did the Northwest Get in on Barley?—But, the reader may think, if barley is so characteristically a California thing and California conditions so exceptionally suited to it, as you have claimed, how did those other states get into big business in barley? It is this way:

As already stated barley has quite wide adaptability—from two and a half miles high on the Himalayas to the north edge of the map of Europe and so on. In this country it has also a wide range west of the Mississippi

river. Splendid barley is grown in the Rocky Mountain States, and to the northeastward, in North Dakota, Minnesota, Wisconsin and in Canada. In this region barley succeeds, not because it likes hardship but because it is naturally very rapid, in its course and can therefore sprout in the gentle springtime and sprint to a harvest before the autumn rains and fogs dim its brightness. Under such conditions barley is sown from April 15 to May 25—about the time of its ripening in California. Growing in the California valleys from fall and early winter sowing, it advances more slowly during the rainy season, stools more amply and under favorable conditions makes its notable acre-yields in this State. But the relatively much greater advantages in California are, by themselves, not enough to secure supremacy. The advantage of the northwestern states of the Mississippi valley which gives them a call on California are commercial, not cultural. They have a home market in the great malting establishments of Milwaukee, Chicago, St. Louis, etc., at nominal cost for transportation. California barley has 2000 miles to cover to reach the same customers, when the railways make a rate which is not prohibitive and if it has to chase around by water and rail it has two or three times as much distance to kill to reach the same markets. For this reason California surplus barley has mostly made the long ship-run to European malsters. Of course this is not all of this interesting phase of the question, but it will do, to suggest that the incoming of

others does not dim the brilliance of California's capacity for barley. In fact it gives another illustration of the claim that all of California can be read in a barley field, for in no product for which we are famous

have we so far done much more than touch the edge of our producing capacity. If all the world does not go bone-dry California can tickle its ribs with refreshment of a minimum alcoholic content, along all its paral-

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- IN FREE STONE PEACHES, on Peach Root—Muir, Elberta, Foster, Lovell, etc.
- IN NECTARINES, on Peach Root—Stanwick, New White and Hardwick.
- IN PEARS, on both French and Jap Pear Root—Bartlett, Winter Nellis, Winter Bartlett, etc.
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But every farmer can't tell a real kerosene tractor from an imitation before he buys it. It takes an expert to do that.

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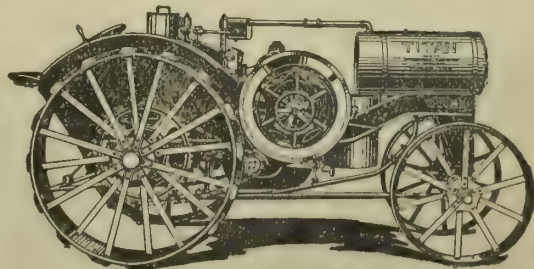
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Titan tractors are now built in three sizes, 10-20-H. P., the 3-plow outfit; 15-30-H. P., for 4 and 5 plows; and 30-60-H. P., for the heaviest work of the largest farms. All operate on kerosene.

The 10-20-H. P. size is recommended for all kinds of farm work within its capacity. It is a two-speed tractor, 1.85 and 2.50 miles per hour, with a smooth running twin cylinder engine, slow speed, mechanically oiled, starting and running on magneto. It can be used for any field work you would expect nine or ten horses to do, and it will run any machine that takes up to 20-H. P. at the belt.

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lels and meridians. The settlement of this question will determine the future of barley in California although its stock-feeding service will always give some greatness to the product.

A Pioneer Dream of Beer.—It is interesting to note in this connection that the pioneer barley growers of California had rather an ambitious dream of what they could do with the barley which, as we have seen, sprang to a surplus production almost as soon as they touched it. In 1866 from this surplus exports were made, chiefly to Australia, of 741,815 bushels which suggested this dream, recorded in that year:

What shall we do with our immense barley crops? We are growing hops of the very best quality and within two years the supply will exceed the local demand. We are annually importing millions of gallons of malt liquors for which we are exporting thousands of gold. Overburdened with barley and hops we should not go abroad for ales and porters, but should supply our own demand. This being accomplished we could save England the trouble and expense of doubling Cape Horn or the Cape of Good Hope to supply the immense quantities used by her colonies in the Indies and make money by the operation. The State offers a liberal premium

therefore a descendant of a Spanish or Mexican variety which the padres introduced about 150 years ago. This is a more reasonable belief, but we are not aware that it has been demonstrated. We can, so far, find no description of the barley grown at the missions preceding the coming of the early Americans. If any reader can cite such a description, we would deeply appreciate it. In the absence of this knowledge we present an inference that the mission barley, which was probably used as seed by the pre-argonauts, who came in the '40s, and was first used also in 1850 by the gold-seekers, made familiar a type of barley different from that which became prevalent later. The evidence of this is perhaps more interesting than strong. In 1858 there was growing on the farm of J. Adriance near Marysville a field of 80 acres of a "new variety of barley" and to it was awarded the first prize for barley in that year by the California State Agricultural Society. The judges give this account:

In 1855 Mr. Adriance discovered, in a field of ordinary barley, a cluster of thirty-two heads from one root; the heads of peculiar shape, and quite uniform in size and length.



for the first ale exported and proved to stand sea voyages and changes of climate.

In accordance with this offer the State of California offered \$375 for the first considerable shipment of sea-going beer, but we do not find record of payment thereof to a local brewer. However, California has contributed largely to the beer of the world, for exports of California barley in 1915 reached a total of 26,754,522 bushels or two-thirds of the total barley product of the State in that year—and this was for malting at distant points.

Whence Came California Barley?—Knowing that barley has been grown in California since 1769, and that the variety most abundant since the American occupation is different from varieties largely grown elsewhere, has led some Eastern writers to surmise that California had a native barley from which the locally cultivated variety had been developed. Two conclusive facts oppose this view: first, California has no indigenous barley or hordeum species; second, California had no aboriginal population sufficiently energetic and intelligent to accomplish such development. All stories, then, that California barley is developed from a wild species are themselves wild.

Another assumption is that the common California barley is a legacy from mission agriculture and is

The head is round as an ear of corn, having six rows of kernels, evenly arranged around and each containing fourteen grains of round full barley. He saved and planted in drills every kernel, and from it planted again in 1856, and in 1857 had seed enough to broadcast 80 acres. It was visited by the committee on awards and found to present a most beautiful appearance—the short, strong stalk holding upright the round straight head, with uniform, bristling beards and free from mixture of other grains. Ten acres of the crop, a fair average of the whole, yielded 675 bushels of thoroughly cleaned grain weighing 50 lbs. to the bushel.

The inference is strong that this six-rowed barley was different from the kind then common or the committee would not have so carefully described it. It is also interesting that the description fits so closely the six-rowed variety which subsequently became recognized as so peculiar to California that observers considered it a development from a different wild species—as already claimed to be impossible.

We have no evidence whatever that Mr. Adriance's preservation of a chance seedling really did give California the barley which has made her famous, but it may have strongly set the fashion for a six-rowed barley which prevails to this day and which experts now fairly agree must be the coming fashion in all Western States which have much

(Continued on page 18.)

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"The farmer," says an Experiment Station, "should use an explosive prepared especially for his work; one that stands all ordinary shocks of handling and transportation and does not easily freeze. He does not need and should not use the expensive nitroglycerine explosives." Thousands of farmers have taken this advice and have found that

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always save them money because they go further than any other stumping powders. Also, because they are made especially to suit *western* farm and orchard conditions and because they are always uniform in composition and action.

Giant Farm Powders—the product of the oldest manufacturer of high explosives in the United States—are the only genuine "giant powders" for agricultural use. They are made in two brands—Giant Stumping Powder and Eureka Stumping Powder.

Giant Stumping Powder is the ideal explosive for blasting stumps in wet ground. It keeps perfectly for months, resists water and chilling, and gets the stumps out economically.

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PORTABLE ENGINE DOES MANY JOBS.

[Written for Pacific Rural Press.]

A 5-h.p. gas engine is put to a multitude of uses on the Rancho Aptos in Santa Cruz county, where the chief business of some 2300 acres is to raise feed for beef cattle. They milk ten or twelve cows for ranch use and keep about 120 hogs on the side.

Perhaps the chief use of the engine is to grind, roll, and chop feed for horses, hogs, and cattle. Some 700 sacks of barley per year are rolled for horses and pig feed, according to R. M. Rhoades, who has charge of the engine. The roller has a capacity of 15 to 20 sacks per hour. No steam is available, so the rolling is not quite so nicely done as in big mills, for if too dry, the barley cracks instead of rolling. Barley and almost all feeds go a third farther if cracked or rolled, according to Mr. Rhoades, and butchers claim it goes one-half farther than whole grain if cracked and cooked. In winter the 14 horses being worked get barley three times a day.

Two feed grinders are used, one stationary, the other movable. About two tons of Indian corn were cracked last year for feed; and about 10 tons will be cracked this year when it is well dried. The machine crushes corn, cobs, and all, which are usually cooked in a boiler with other feed. It also grinds corn alone, which is run over a screen through which meal fine enough for house use is obtained.

At noon, the horses get chopped hay in equal quantities with the barley, to eat in the field. The hay is chopped as needed, for cows and horses, two men and the engine being able to get enough chopped in a day to last a week. Black oat hay is raised almost exclusively, though last year they cut about ten tons of lagoon grass hay. A bale is cut to 3/4-inch lengths in seven or eight

minutes. It is run into a box on three wheels in which it is mixed with grain and then run along in front of the mangers. Whether there is a saving of hay by chopping "depends on who is feeding it"; but there is opportunity for "quite a saving over whole hay."

While we were there, the engine was hitched to a fanning mill to clean beans. It had cleaned 6000 pounds of pinks in 2 1/2 hours.

It cleans grain for seed at 25 to 30 sacks per hour. About 600 or 700 sacks per year are cleaned, 250 of which are used on the ranch.

About a dozen cords of 4-foot wood per year are cut by the engine with a circular saw. Eight to ten cords are cut in a day of 10 hours, depending on how much bigger the sticks are than the radius of the saw.

The engine is mounted on two 4x8's with four iron wheels which are blocked while the engine is in use. One horse pulls it about the place and to different barns as much as a mile away. Which way it faces makes no difference, because the direction of rotation of any machine is changed by twisting the belt.

"We have used the engine three years," says Mr. Rhoades, "and we have never had trouble except when careless people handled it."

TRACTOR HELPS DEVELOP DAIRY.

[Written for Pacific Rural Press.]

For years Mrs. E. E. Clowes of San Joaquin county had been behind with the plowing on her 354-acre dairy and grain ranch. Her son of 17 years had been reading Pacific Rural Press, and last October convinced his mother that instead of buying three more horses besides the five already in use, a better investment would be a tractor. The clinching part of his argument was that they needed silage; and a tractor would avoid need of a gas engine to cut the corn. When seen in early November, 125 acres had already been plowed and as much more was still to be done. Oats and a winter-growing legume were to be planted on old alfalfa sod to prepare it for corn to be planted next spring after cutting the oats for hay. A hundred acres were to be planted to alfalfa for the 80 to 90 cows being milked all the time. This is to be chopped and blown into the barn by the tractor.

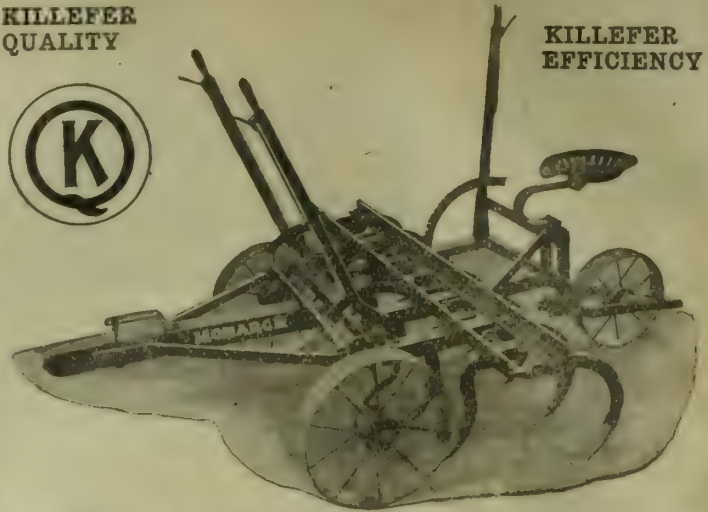
Certain parts of the place cannot be irrigated from the ditch water; so pumping plants are to be put in and run by the tractor in its spare hours. The aim is to keep the tractor busy the year around.

Auto trucks picked up 810 bags of beans one day in November, which had been left at the roadside by G. R. Fox of San Joaquin county to be hauled to market. That was much simpler for Mr. Fox than hitching up and spending his time hauling them slowly to town while an alfalfa crop was down.

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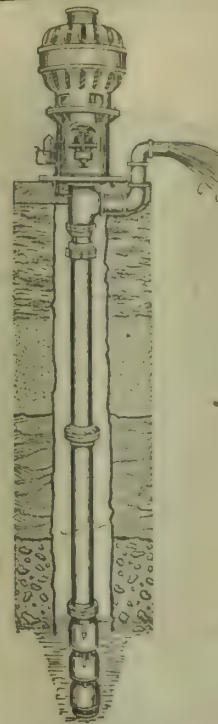
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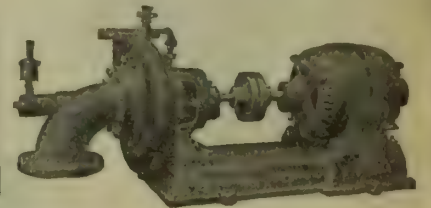


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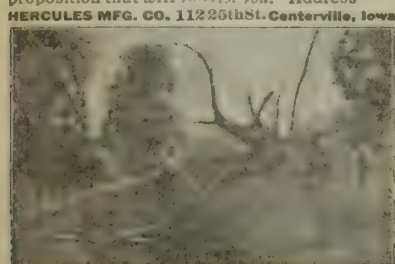
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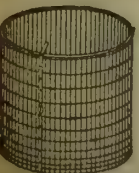
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Circular containing 100 mechanical movements mailed free.

WHAT SIZE PIPE FOR IRRIGATION.

To the Editor: I am planning to put in some concrete irrigation pipe and should like to know what size I should use. I have a five-inch centrifugal pump with an eight-inch discharge. I think that I have about 800 gallons per minute. Part of the pipe would be laid so that there would be a fall of 8 inches to a hundred feet; the rest on the level. Would ten-inch pipe be large enough?—K. S. H., Sunnyvale, Calif.

With a 10-inch pipe and 800 gallons per minute, a fall of 8 inches per 100 feet would just about overcome the pipe friction. Where it runs on the level, you would need to raise the water at the pump about 8 inches for each 100 feet of level pipe line, or get the same pressure in another way, to get your 800 gallons per minute at the other end. Thus, if you want that quantity delivered at the other end of 1000 feet of clean, smooth pipe, you will need to lift it at the pump about 80 inches above ground to overcome the friction. Smaller pipe would require a greater proportional lift. Larger pipe would require less lift but you can judge the economy of that.

TRACTOR REQUIREMENTS AND COSTS.

[Written for Pacific Rural Press.]

"If I were going to buy a new tractor for farm work, and knew nothing of the different makes, I would first investigate the part that runs on the ground. The bull-wheel or track is the first to give trouble," says S. L. Martin of Ventura county. He has used a tractor of eight h.p. drawbar pull for about 16 months, to plow, thresh, and bale hay. He keeps 14 head of work stock also for plowing and other farm work. Repairs have cost no more than he expected, being about \$50 in the first year. A dust trap should be put onto every carburetor to work in fields to save engine trouble and repairs.

He uses about 420 gallons distillate, 25 gallons gas, and 30 gallons lubricating oil in 30 days.

"The tractor is all right for the man who knows how to take care of it," says he.

TWO-HORSEPOWER IRRIGATION.

To the Editor: What amount of irrigation do you think a two h.p. gas engine would supply, forcing it through about 500 feet of pipe and upward about 20 feet?—W. H., Angels Camp.

We have to guess at the diameter of the pipe and how much lift you must make in the pump. If you were pumping out of a reservoir with the pump at the surface of the water, there would be the equal of a 20-foot lift plus the pipe friction which in a 3½-inch pipe carrying 100 gallons per minute would equal 7.5 feet lift for your 500 feet of pipe. This would total 27½ feet lift, which would require a 2 h.p. engine. One hundred gallons a minute would cover 2¼ acres an inch deep in 10 hours not counting what would soak in. Perhaps you had better get a bigger engine.

Co-operative motor trucks will haul nine-tenths of all the fruit in Placer county from farm packing sheds to shipping stations within 10 years, is the forecast of Mr. Francis. He urges that all new packing sheds be built close to the roads for convenience in loading the trucks.



LAYNE & BOWLER PUMPS

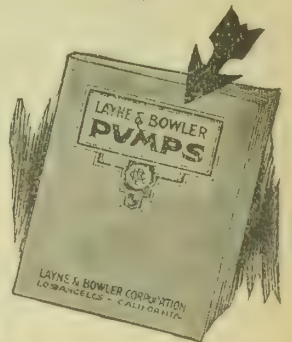
Make active preparations now for next year's dry season. Install the Layne & Bowler Pump and be absolutely assured of the most dependable water supply. Layne & Bowler assurance is crop insurance. Consult our Advisory Department.

Our irrigation booklet No. 25 is free for the asking. It is profusely illustrated and contains a wealth of information you should know.

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"WORLD'S LARGEST WATER DEVELOPERS."



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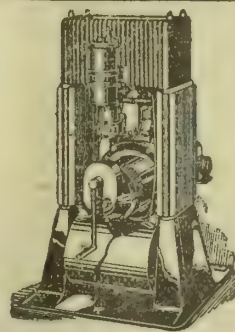
That's what every man does who owns Properly Irrigated, Ditched, Tile Drained or Terraced Land. And if you don't want to sell, your increased yearly profits are just like turning waste land into cash. Progressive land owners in every State and practically every county in the Union have discovered that the only way to bring their land up to the desired state of production is to get a

Bostrom \$15 Farm Level

and make spare days the most profitable days. Also fills the bill for Grading, Road Building, Foundation Work, etc.

The Bostrom Farm Level has been on the market over thirty years, the latest improved having a Telescope with Magnifying Lenses which enable you to see the cross on the Target a quarter of a mile away. Man Size Tripod, Leveling Rod, Target, Plum-Bob and full instructions included. Weight, 15 pounds. It is used and endorsed by Agriculture Schools and U. S. Farm Demonstration Agents, and you will endorse it, too, after using it—if not Your Money Back, including express both ways. Write today for description of Level and Telescope, details of our Money Back Guarantee, and names of Jobbers in San Francisco, Sacramento and Los Angeles who carry it in stock.

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Electricity for Farm Homes

At one-third cost of juice from Power Company (this includes interest on cost of plant). It is the simplest and most economical plant on the market.

No Batteries - No Switchboard - No Rheostat

Will operate 50 lights 7½ hours for 11c. Will also operate electric fans, irons, small motors, etc. If your buildings are not wired, send us plans and we will give you full instructions so that you can wire them yourselves. Material furnished at lowest cost.

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TO SACRAMENTO

Fast comfortable service through some of the prettiest spots in Central California.

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I. H. RODEBAUGH,
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Oakland, California

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PACIFIC RURAL PRESS
525 Market St., San Francisco

General Agricultural Review.

FIELD CROPS.

Livingston has shipped out 84 carloads of sweet potatoes to date.

California is now the fourth State in the Union in the production of rice.

Colusa invites any projector of a rice mill to take over a site for its establishment there.

The total output of wheat in the Porterville district for 1916 was 192,998 bags of a net value of \$496,255 to growers.

Strawberries which were grown on the mesa four miles east of Bakersfield were brought into that only last week.

An Arizona authority says that beans grown from hand-selected seed yielded 100 pounds more per acre than from seed not so selected.

According to reports of grain men in the Porterville district, the late rains have put the entire wheat district in the best condition in its history.

About 2,500 bags of beans were threshed around Visalia this season. They are valued at about \$13,000 and paid a profit to the growers of from \$50 to \$175 per acre.

Reports from El Centro say that the recent rain was a light one in that section but between there and San Diego the precipitation was heavy.

The Bureau of Crop Estimates, U. S. Dept. Agriculture, in a statement dated Dec. 18, estimates the area of autumn-sown wheat in California at 413,000 acres. This, of course, is only a preliminary statement.

Initial steps in the direction of forming a co-operative business organization for the purpose of obtaining financial backing for the hop-growing interests of the State, were taken at a meeting of hop growers held Dec. 28, at Sacramento.

Five thousand four hundred acres of sugar beets have been pledged by ranchers of Chico and along the line of the Colusa and Hamilton Railroad, to insure the operation of the Sacramento Valley Sugar Co.'s plant at Hamilton City.

A Japanese type of rice that will mature twenty days earlier than other varieties, and which it is claimed will produce a greater yield, is being put out by the Government's rice experiment station, five miles north of Biggs.

The Government experiment station north of Biggs has discovered no remedy for water grass on rice lands. Soil that is adapted to

nothing but rice, the farmers are advised to leave idle for a year. Where soil is good rotation of crops is suggested.

California lady bugs gathered in northern California are being sent to the big melon plantations in Southern California to combat destructive bugs. George H. Hecke, State Horticultural Commissioner, is anxious to know just how well they do the work.

The Spreckels Sugar Company at Salinas have donated the \$2000 necessary to send an expert to Australia to find a parasite for the beet leaf hopper that caused a million dollars damage last year. It is believed there is a parasite in the antipodes that lives on the beet leaf hopper.

Work is now under way on the sugar refineries at Manteca and Tracy. The Manteca plant is being erected by the Spreckels Sugar Company at a cost of \$2,000,000 and the one at Tracy is going up on the Whitehall Estate, financed by the Eccles interest, of Utah, at a cost of \$1,000,000.

Reports from the Imperial Valley say that 70,000 bales of the best cotton in the world is being picked. The crop, which is a big one, is being sold at a price far in excess of any ever before realized. Most of the crop has been contracted for at prices ranging from 18c to 24c per pound.

It is said that ranchers of Yucaipa Valley who planted potatoes this year have realized handsome returns from their investments and labor. Ranchers have found that potatoes of certain varieties do well in the soil of the valley. One rancher planted potatoes between the rows of his apple trees and the yield was enough to pay a large part of the expense of the year while he is waiting for the trees to bear.

CITRUS, NUTS, SEMI-TROPICAL.

It is estimated that the citrus crop of the Sacramento valley returned to the growers just about one million dollars.

Cull oranges that have been allowed to dry sufficiently are used locally for fuel purposes, says the Lindsay Gazette.

At the Board of Directors' meeting of the Lindsay Packing House Co., T. E. Anderson was selected as manager for a term of two years.

Fourteen thousand almond trees were shipped from Yolo county to Fresno county last week, the consignment making a full carload.

For the first time in recent years the entire walnut crop in the Santa Ana district has been entirely sold out. Local shippers are unable to fill orders on hand.

The Terra Bella News reports that a crop of Calimyrna figs from a 40-acre 10-year-old orchard east of Farmersville brought its owner \$8,500 gross, or \$212.50 per acre.

Orange men around Ontario are jubilant over the recent rains. It not only furnished much-needed moisture, but stove off killing frosts and generally helped the ripening of oranges.

The Sacramento Bee is authority for the statement that leading hotels in Chicago and New York are serving Sevillano olives to their guest at the fabulous price of three for 40 cents.

At a meeting of the stockholders of the Lindsay Fruit Exchange, Dec. 27, which has the largest packing house in the world, T. E. Anderson was re-elected as manager for the term of two more years.

On Dec. 28 it was reported that Corning and the surrounding country were covered with an inch and a half of snow. No fruit has been damaged. The orange crop has been mostly harvested. The olive crop

Japan Pear Seedlings

We have at San Jose, Cal., the following Japan and Kieffer pear seedlings. They are very good seedlings in first-class condition and will give splendid satisfaction. Write or wire your order to the SHENANDOAH NURSERIES, SHENANDOAH, IOWA, or RUEHL WHEELER NURSERY, SAN JOSE, CALIFORNIA. Terms, one-fourth cash with order; balance with Bill of Lading attached. Prices are f. o. b. San Jose. No charge for boxing. Please give second choice, in case box you order is sold.

Box	Containing Japan Pear	No. 1.	No. 2.	No. 3.	Containing Japan Pear	No. 1.	No. 2.	No. 3.
No. 551.	5,000	\$45.00			No. 545	5,000		\$16.25
" 552.	5,000	" 1. 45.00			" 546	5,000		" 3. 16.25
" 553	5,000	" 1. 45.00			" 547	5,000		" 3. 16.25
" 554	5,000	" 1. 45.00			" 548	5,000		" 3. 16.25
" 555	5,000	" 1. 45.00			" 549.	10,000		" 3. 32.50
" 551	5,000	" 2. 32.50			" 550	5,000		" 3. 16.25
" 552	5,000	" 2. 32.50						
" 555	10,000	" 2. 65.00			" 536	5,000		" 1. 45.00
" 556	10,000	" 2. 65.00			" 537	5,000		" 1. 45.00
" 557	5,000	" 2. 32.50			" 538	5,000		" 1. 45.00
" 543	10,000	" 3. 32.50			" 539	5,000		" 3. 16.25
" 544	5,000	" 3. 16.25			" 540	5,000		" 3. 16.25

We can still offer from Shenandoah a complete line of Fruit Tree Stocks—Apple, Peach, Japan and Kieffer Pear Seedlings, Myrobalan, Mazzard, Mahaleb, Fr. Pear, Etc., Pear and Apple Grafts, and a complete assortment of General Nursery Stock. As the demand is active, we advise orders be placed at once. We will have several cars more to California and will include orders in car nearest to customer, which means Safer, Quicker and Cheaper transportation.

The Shenandoah Nurseries

D. S. LAKE, President.

Shenandoah, Iowa.

Blenheim, Noble and Royal Apricot

On 'Cot, Peach, and on Myrobalan roots. French and Sugar Prune on Peach, 'Cot, Almond and on Myrobalan. Full assortment of Peach, Cherry, Pear, Apple, Plum, Fig, Quince and Citrus and other Fruit Trees.

Our buds are all taken from the very best bearing orchards in the Santa Clara Valley.

Send us a list of your wants for quotations.

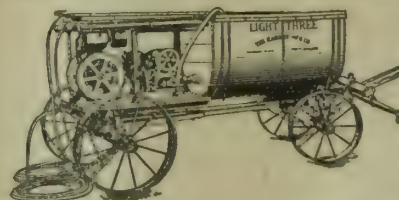
GARDEN CITY NURSERIES

SAN JOSE,

CALIFORNIA

More than 7000 Hardie Power Sprayers have made good. They are a tried and proven success and better this year than ever before. Insure that

bully feeling of owning the best there is by having a Hardie Sprayer.



Ask for 1917 catalog.

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THE PIONEER NURSERY Price List

It will pay you to see it.

SENT FREE.

Everything in Fruits for California.

DECIDUOUS CITRUS BERRIES NUTS OLIVES
AVOCADOES AND TROPICAL FRUITS A SPECIALTY.

The Pioneer Nursery Dept. 3 MONROVIA, CAL.

Wallace Nurseries Oranges-Lemons-Grapefruit-Olives TREES

Competent salesman to advise you. This service is free. Our forty years in the nursery business assures you of the best. We plant, guarantee, and accept lands in payment. ORDER NOW.

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HYDRATED LIME OR GROUND LIME ROCK

Free Booklet and Prices on Application.

PACIFIC LIME and PLASTER CO.

807 MONADNOCK BLDG.,

Manufacturers,

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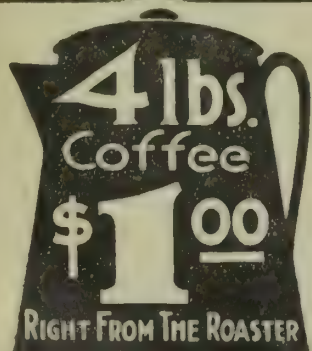
SUPERPHOSPHATE

and animal manure make a splendid

FERTILIZER FOR ALL FRUIT TREES.

The Mountain Copper Co.,

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3 1/2 lbs., \$1.00; 5 lbs., \$1.00

NO MONEY FOR COFFEE!

WILSON'S OFFER—

Wilson will parcel post any of the above grades, all charges paid. You use 1 lb. If it is unsatisfactory, return the rest, and Wilson will send you postage.

MIND YOU, NO CHARGE FOR THE POUND USED.

If you are pleased and keep the coffee, you agree to send the \$1.00 within 10 days.

IS THAT FAIR?

When ordering, kindly state how you want coffee ground—fine, medium, pulverized, or in the whole bean.

WILSON'S

868-970 Market St., San Francisco

BIG SEED COMPANY IS DISTRIBUTING NEW CATALOG

AGGELER & MUSSER SEED CO.,
Of Los Angeles, Issue 24th
Annual Book.

One of the largest seed houses in the West, the Aggeler & Musser Seed Company, Sixth and Alameda Streets, Los Angeles, have just received the first edition of their new 1917 catalog, and are giving it broadcast distribution. This is their 24th annual catalog and it certainly surpasses any previous edition.

It contains many new features, such as hints to the home vegetable gardener, how gardening may be made easy, etc. In fact, the supplementary booklet called the "Garden Manual," which heretofore has been printed separately, is this year incorporated in the big annual, and is claimed to be one of the most complete seed books published. It contains answers to more than 1,000 questions, and gives information regarding all varieties of plants listed and is fully illustrated. Not only does it tell all about seeds, but gives full data concerning the correct tools and implements agriculturists should use to obtain the best results. Valuable hints on poultry, spraying, fertilizing and the use of insecticides are also given.

The Aggeler & Musser Seed Company will gladly send this descriptive, illustrated and interesting catalog free and postpaid to anyone writing and requesting it.

LAST CARLOAD THIS SEASON

BOLTON ORCHARD HEATERS

WILL ARRIVE
FEBRUARY 1, 1917

ORDER IMMEDIATELY
PROTECT YOUR CROP
THIS SPRING
SEND FOR BOOKLET

The
FROST PREVENTION CO.
Merchants Nat'l Bank Bldg.
San Francisco, Cal.

CORY'S MAMMOTH THORNLESS

Blackberry

No briars to tear the hands or clothing—an economy at harvest. The earliest berry to ripen—a guarantee of profit at market. A prolific bearer of gigantic fruit—insuring quantity. A luscious, almost seedless berry of unsurpassed flavor—the final requisite.

Thornless

Quality
is guaranteed.
Affidavits furnished.
Supply limited.
Booking orders now.
State quantity and
ask for prices.

Ekstein Nursery Co., Modesto, Cal.
SOLE DISTRIBUTORS.

has also been nearly picked, excepting oil olives, and they won't be hurt.

The National Orange Show will be held at San Bernardino February 20 to 28. Most elaborate preparations are being made for the occasion.

There is a possibility that an orange standardization law will be presented for consideration at the next session of the State legislature.

The formation of a local citrus growers' association seems to have solved the marketing problem for the Orland growers. A fair price is said to have been obtained for all orange shipments made from that section this year.

While heavy frosts have been had for several nights the past week throughout Southern California, the free use of smudge pots and cloudy weather and an occasional shower saved the orange crop. No serious damage has been done so far.

Considerable decay is showing up in some of the citrus fruit shipped and many shippers attribute this excessive decay to the overloading of cars, which is being urged by the transportation companies to help relieve the car shortage.

The members of the Sutter Almond Growers' Association have received their final payment for the crop this year as marketed through the California Almond Growers' Exchange. The total amount distributed to this association was over \$55,000.

While a cold wave has swept through the Porterville district the past week, as not more than ten to twelve per cent of the orange crop remains unsold, little loss is expected, and lemon growers are keeping smudge pots lit and are in hopes of warding off any damage.

T. F. Fotheringham of Orland, under date of Dec. 28, says: "About two inches of wet snow fell last night, but it will be all gone by noon. Thirteen carloads of oranges have been shipped, but lemons are mostly unshipped. Some of them may be frozen, but not many."

Late telegrams tell of heavy frosts experienced in Florida. The temperature went down to 10 degrees above zero in some of the orange-growing districts, practically destroying the citrus crop. It is now predicted that the price of California oranges will reach a limit unrecorded in the history of the industry.

A general survey of nineteen cities and towns including all of the citrus districts of Southern California show that there were 1432 cars of oranges and lemons shipped East before December 22, and enough sold in stray cars to make 15,000 cars for the Christmas pool. These are the heaviest shipments on record for so early in the season.

The Australasian fruit growers, at their last conference held in Melbourne, voted down a motion for increased duty on American oranges and lemons, which was asked for by the fruit growers of New South Wales. A motion passed asking that California be urged to admit Australian fruits generally from districts free from fruit fly and other diseases.

DECIDUOUS FRUITS.

Fifteen thousand young fruit trees are ordered for planting in the "Thousand Acre" ranch near Colusa.

Farmers in Glenn, Yolo, Tehama and Colusa counties are contemplating extensive plantings of prune trees in their territory this season.

Over \$10,000 worth of stock in the State Prune & Apricot Growers' Association, Inc., has been subscribed for by the prune interests of Sonoma county.

The orchardists of the Oakley, Brentwood and Knightsen sections have enthusiastically endorsed the Prune and Apricot Association of San Jose.

The directors of the California Peach Growers, Inc., propose that Hanford business men finance the construction of a packing plant

there to the extent of perhaps \$25,000.

The Newcastle Fruit Growers' Association's last report stated that 454 cars had been consigned East, netting the growers \$300,000. The growers received \$5,300 as dividends, while the California Fruit Exchange of Sacramento, its selling agent, contributed further profits in the form of tonnage dividends.

MISCELLANEOUS.

Marcus A. W. Lee is the new Farm Adviser of Alameda county.

The farmers of Napa county have formed a Farm Loan association.

Organization of a farm loan association as a branch of the Placer County Farm Bureau has been perfected.

The Fifth Annual Farmers' and Housekeepers' Short Course will be held at the University of Arizona, Tucson, January 8 to 13, inclusive, 1917.

The Paradise Development Board and the Paradise Fruit Growers' Union are initiating a movement to secure a farm adviser for Butte county.

Berkeley has been selected as headquarters for the Eleventh District Federal Farm Loan Bank. The district includes California, Nevada, Utah and Arizona.

The Shorthorn herd at the Butte City Ranch is to be headed by a son of White Rock, a son of the famous Whitehall Sultan, some of the best Shorthorn breeding in America.

The territory east and south of Modesto has organized a loan association of Stanislaus county. Twelve farmers, representing proposed loans of \$50,000, signed up.

It is said that Los Angeles and San Francisco bankers will loan the Imperial Irrigation District \$200,000 for the improvement of the irrigation system of the Imperial Valley.

Eradication now of the yellow star thistle is impossible except in districts where the infestation is in its incipency, is the belief of George W. Hecke, State commissioner of horticulture.

The Kern County fair was a financial success, the profit side of the ledger showing \$3184.65 cash in bank, according to the report of T. F. Burke, secretary of the association, to the directors.

The Orland Livestock and Agricultural Society announce a combined (Continued on page 18.)

MISSION OLIVES EARLY RIPENERS.

THE EHMANN OLIVE CO.

Oroville, Cal., Nov. 17, 1916.
Mr. W. A. Hayne, Box 461, Marysville, Cal.
Dear Mr. Hayne: Answering your kind favor of the 15th, I am enclosing herewith photograph of some of this year's fruit on the Foggs grove, and you will note that they are above the average Mission. We also were able to harvest this entire crop before the frost, which shows that they are early ripeners. We will be glad to keep in touch with you on this matter, and if we can be of any further service, don't hesitate to let us know. Yours very truly,
(Signed) E. W. EHMANN.

I propagated the Foggs orchard thirty years ago. The origin of the Foggs trees was directly from the old Mission at Santa Barbara. The trees I have now for sale are full brothers to the Foggs olive trees, and, like the Foggs trees, they are all propagated from the large size cuttings.
W. A. HAYNE.
Box 461, Marysville, Cal.

The Life of Chilean Nitrate Deposits A. D. 1917

Total Nitrate deposits in Chile	720 million tons
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Estimated life of deposits at present rate of World's consumption	300 years
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For Reliable Information Write

Dr. WM. S. MYERS, Director
Chilean Nitrate Propaganda
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QUINCES

"The Overlooked Fruit."

SOME GOOD POINTS:
Bear early, heavily, regularly.
Make fine temporary fillers.
Few insects or diseases.
Keeps well without cold storage.
Can be shipped anywhere.

WRITE TO

THE PIONEER NURSERY,
DEPT. 3, MONROVIA, CAL.
For Special Prices on Large Lots.

RHUBARB

NOW IS THE TIME
TO PLANT
WAGNER IMPROVED
WINTER RHUBARB

Splendid results should be derived by Spring. Greatly reduced prices for Fall planting.

Also Berries, Small Fruit and Cactus.

WRITE
J.B. WAGNER
Rhubarb-Berry & Cactus Specialist
PASADENA, CALIFORNIA

Established 1878. Incorporated 1908.

Leonard Coates Nursery Co.
MORGAN HILL, CAL.

"We Grow Everything
Worth While"
SEND FOR CATALOGUE.

Budded Avocado Trees

Write for new descriptive Catalog. Largest and most complete stock in California.

Newbery-Sherlock,
R. F. D. No. 2, Pasadena, Calif.

LABELS FOR FRUITGROWERS

Beautifully lithographed stock labels ready for immediate shipment. Write for free samples—address Label Department.

SCHMIDT LITHOGRAPH CO.,
SAN FRANCISCO.

Patronize Home Industry
BY USING

HAUSER'S ORGANIC FERTILIZER

100% EFFICIENCY

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Phones: 10336, Bd'w. 5600.

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MANURE

Sheep Manure, Horse Manure,
Cow Manure and Rotted Manure

CALL OR WRITE

PACIFIC MANURE & FERTILIZER CO.

429 DAVIS STREET,

SAN FRANCISCO

Announcing A New Sand

\$1095⁰⁰
F.O.B.
SANDUSKY.

THE principal aim in developing this 10-20 tractor has been to widen the field of usefulness for Sandusky service. It solves the power problems confronting the farmer who does not require our large machine.

At our first conference, three years ago, covering such plans the argument was advanced: "Why not build a small *cheap* tractor which will sell itself on account of its low price?"

Our *manufacturing facilities* would enable us to do this on a large scale. But this did not accord with the *policies of our President*, Mr. J. J. Dauch, who personally controls seventeen large manufacturing establishments throughout the United States and Canada, each operated on the basis of "quality always."

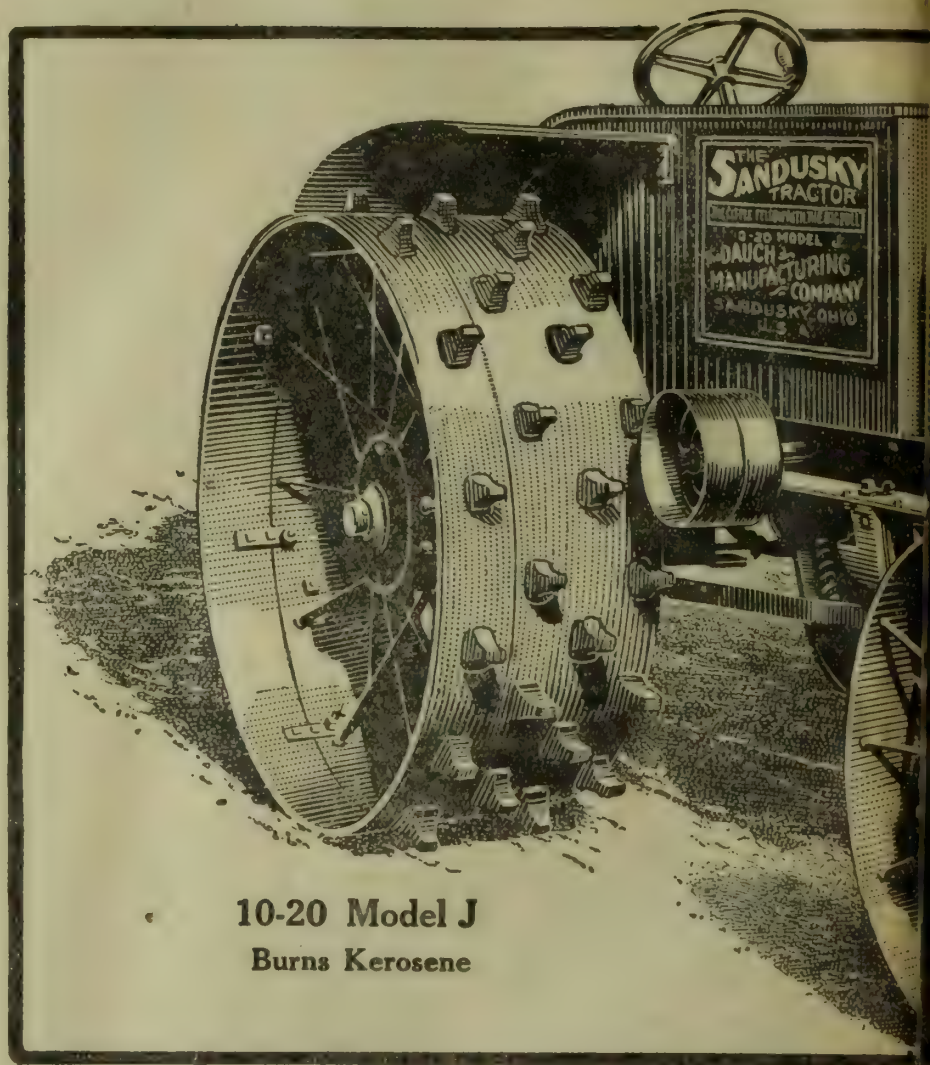
This point having been determined, our first small tractor was designed and built. Farmers who saw this model wanted it; so it was with the second. From every indication these machines were far ahead of what was then being marketed. But they did not measure up to our ideal—a small tractor that we could afford to back with a binding guarantee; one that we knew would maintain the reputation thoroughly established by our larger machine.

The result is a tractor embodying our utmost efforts—not toward reaching a low price machine, but one to fill the need for a good tractor capable of real service at as low a figure as modern manufacturing facilities can produce and an efficient organization can market.

Engineers of world renown have approved its design, incorporating the famous Timken worm and gear drive, as representing the ultimate standardized small tractor. Years will prove that this Company has again set the pace of leadership in the Model J, as has been true in the case of our Model E.

BRIEF SPECIFICATIONS

Our own specially developed four-cylinder, four-cycle, $4\frac{1}{4}$ " bore, $5\frac{1}{4}$ " stroke, quality motor. Drop forged high carbon steel crank-shaft, cam-shaft and connecting rods. Ninety-three percent tin base die cast interchangeable bearings. Valves enclosed. Combination force feed and splash oiling system. High tension magneto—impulse starter. Bennett air cleaner. A guaranteed kerosene burner. Surplus cooling capacity. Pulley for belt work. Adjustable cone clutch. Three speeds—2 and 3 m. p. h. forward and reverse. Timken David-Brown worm and gear drive. Hyatt equipped from motor to differential driving shaft, with universal couplings between motor, transmission and differential. This, together with *three-point* spring suspension, relieves road shocks, weaves and strains. All enclosed and protected against dust. Full steel construction. Short turning brakes. Weight, 4000 pounds. Length, 120 inches; wheel base, 76 inches; height, 52 inches. Rear wheel diameter, 48 inches; face, 12 inches and 6 inch extension rims; front wheels, 32 inches diameter, 6 inches face.



10-20 Model J
Burns Kerosene

OUR GUARANTEE

We guarantee this machine capable of delivering a constant 2,000-pound "drawbar pull. This is more than equivalent to handling two 14-inch plows at least eight inches deep in soil where a two-horse team can handle one 12-inch plow six inches deep, with a big reserve, or three 14-inch plows at depth formerly plowed with team and 12-inch bottom. We also guarantee it to deliver 20 horse power on the pulley, which furnishes ample power for the operation of belt machinery up to a 24-inch separator with full equipment—all on kerosene as fuel.

We further guarantee this machine free from defects in either workmanship or material for one year from date of acceptance and will furnish f. o. b. factory any such parts returned, transportation charges prepaid, for inspection and credit.

A NEW PI
We announce
tractor selling. A
of service, goes w
expert advice and
want it. See cata

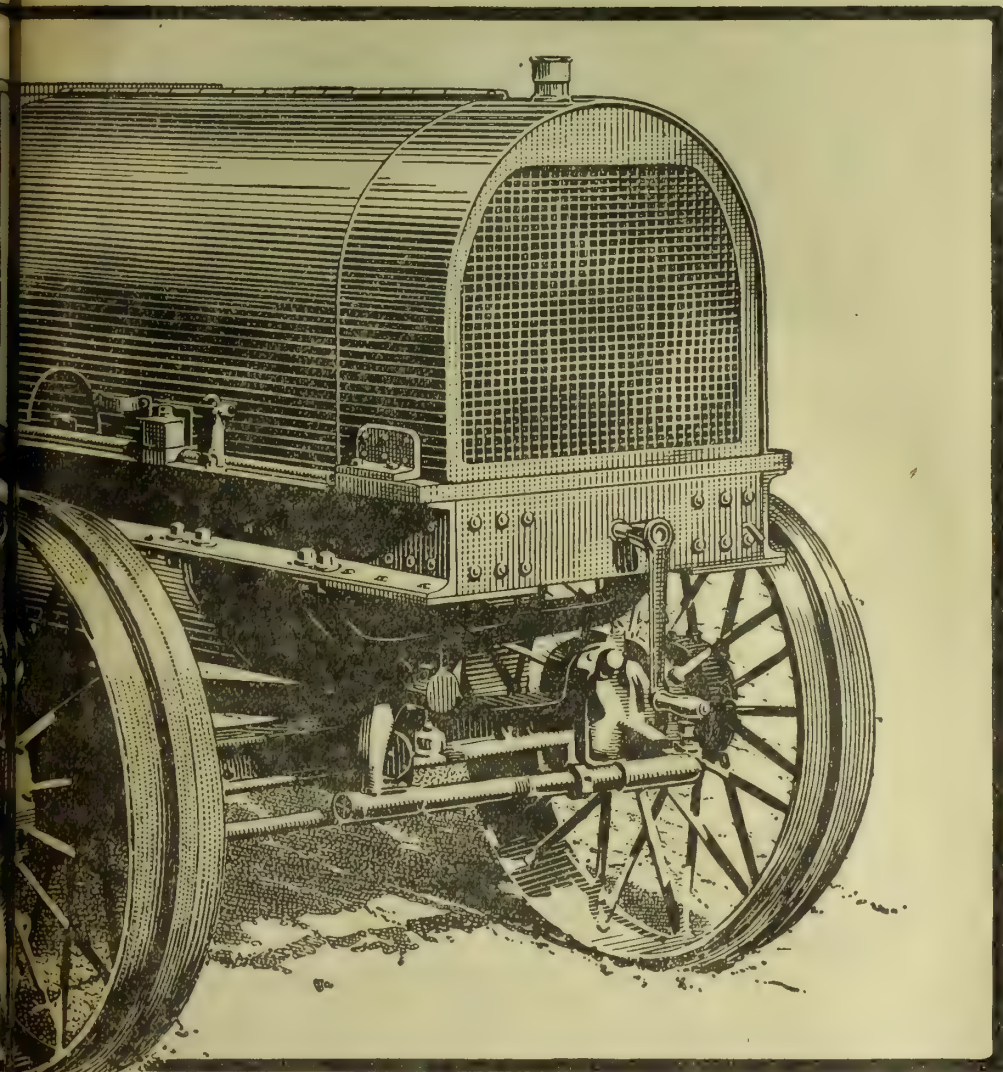
THE
SANDUSKY

"THE LITTLE FELLOW"

The Sandusky Tractors—both Models—are ready
Service Stations at Indianapolis, Ind.; Bloomington, Ill.
Sioux City, Iowa; Lincoln, Nebr.; Wichita, Kans.; Dal

THE DAUCH MANUFACTUR

Sandusky Tractor—"Model J"



\$1095⁰⁰
F.O.B.
SANDUSKY.

TO his engineers Mr. Dauch said: "We are not interested in the manufacture of a *cheap* tractor. Our manufacturing and sales organizations are imbued with the *quality* idea embodied in our Model E. We cannot afford to demoralize these influences by putting out an inferior product merely to meet price competition."

These thoughts, together with the fundamental principle that this tractor must be adapted to the widest possible range of usefulness, dominated the development work in all its stages.

As a consequence the service which this tractor will render, the results it will produce in dollars and cents, the economies of labor which it will effect on your farm, make its purchase a profitable investment. The brief specifications below, and the more detailed description in our booklet, prove to any man that this machine offers a greater value per dollar than elsewhere obtainable.

Compare the Model J power plant with others. Consider its light weight—only 4,000 pounds; its Timken worm and gear drive, which actually increases in efficiency with use; its Hyatt Roller Bearing equipment. Remember that bevel gears and ordinary bearings mean friction, wear and loss of power. Remember our guarantees are based on the use of kerosene as fuel. Think! The result will draw your good judgment to this tractor like a magnet.

The Model J is a truly general purpose tractor, adapted not only to plowing, but also to the preparation of the seed bed, and all other farm power work, thus enabling you to profit by its service throughout the year.

It will be physically impossible to meet the tremendous demand of those who wait until their field work is in progress. We therefore urge you to write us at once, fully outlining your requirements. This will not obligate you in any way.

TRY IT BEFORE YOU BUY

Continuing the policy created by us in the sale of our 15-35 Model E Sandusky Tractor, we will put the 10-20 Model J on your farm, demonstrating its ability to fulfill our guarantees under your own local conditions, and personally instruct you in the handling and care of this machine. It must prove itself profitably adapted to *your* requirements before you buy.

BOOK J-131-FREE

It describes in detail the principles of design, construction and ability of this smaller "Little Fellow With the Big Pull." It will enable you to make a thorough study of the real merits of this machine as compared with other tractors. In writing place your problems before us and we will gladly assist you in solving them without obligation on your part. Be sure to ask for Book J-131

FREE SERVICE

Our new departure in book good for 100 hours Model J. This means without charge when you details.

SANDUSKY

TRACTOR

WITH THE BIG PULL"

tion at and delivery from our principal Factory Branches and
ee, Wis.; Lewistown, Mont.; Minot, N. Dak.; Fargo, N. Dak.;
Leesburg, Fla.; Los Angeles, Cal.; Sacramento, Cal.

NG COMPANY, Sandusky, Ohio

DEALERS OPPORTUNITY

The 10-20 Model J Sandusky Tractor offers an exceptional opportunity to high grade dealers who will stock this machine on protected territory contracts. We want men of quality to represent us—men who are abreast of the times, in position to give service to our customers, and willing to give the time and energy required to build up a real business. For such men we have an attractive proposition.

Look for this announcement in the principal farm papers. It will be followed by the greatest big-space advertising campaign ever put back of a tractor. This in itself will create a big demand for you. Send for our dealers' prospectus. It outlines in detail the policies underlying this establishment; also our complete plans for such co-operation as will rapidly develop this account into a good-paying, permanent business for you with ever-increasing opportunities.

Write today—better still, wire territory reservation.

BARLEY: CALIFORNIA'S GREATEST GRAIN.

(Continued from page 10.)

to do with the growing of barley.

But this does not answer the question of whence came our six-rowed California barley. It is probably unanswerable. As soon as the argonauts came in quantity barley ran out of supply and importations were made from everywhere. There were 294,000 sacks of barley imported at San Francisco in 1853, which gave the quick impulse to local production which we have already noted. It came from the four quarters of the globe and they all had six-rowed varieties grown chiefly for grinding. Some of these perhaps gave us our six-rowed which became our common barley. Possibly one grain from this shower of importation fell into the field of Mr. Adriance and gave him the call to his prize-taking.

Why a Six-Rowed Barley?—In the Pacific Rural Press of August 28, 1915, this writer indulged in a detailed discussion of the issue between six-rowed and two-rowed barleys in this State and how it became a winning fight for the six-rowed. That statement may be interesting to any one desiring to pursue this phase of the subject. It need only be said that the grower's idea that it is better to have six rows of grain on the head than two is reasonable not only on the ground that conditions of soil and climate favor a six-rowed variety and give greater weight of produce, but this greater vigor in the plant itself enables it to develop a kernel which carries amplitude of starch, gives a strong sprout in malting and a low albumenoid content which best serve a brewer's purposes.

The Outlook.—It is clouded, of course. Will Europe lose its thirst for malt liquors after the war or have no money to quench it? Will the United States find more than enough barley in the Northwestern States, as prohibition advances, and California be excluded by distance? How far can local feed uses be increased beyond the present one-third of the product? On the whole it looks as though it would be immediately safer to grow more wheat, for we can eat that, and less barley because we do not know how much of it others may wish to drink nor how long we can drink it ourselves.

AGRICULTURAL NOTES.

(Continued from page 15.)

stock and agricultural fair that will last at least three days and which will solicit exhibits from all sections of Glenn Co., to be held in Orland next October.

California representatives in Congress will be asked to secure an appropriation of \$35,000 at the present session of Congress for purchase and development of additional land at the U. S. Plant Introduction Field Station at Chico.

The development of a 50-acre tract of land in the Amargosa Valley in Southern Nye Co., Nevada, is to be undertaken by the University Engineering Department and Agricultural College of Nevada for an experimental farm.

The Board of Appraisers of the Merced Federal Farm Loan Association have started on an inspection of the property of the twenty-six farmers who have made applications under the rural credits law for loans aggregating \$100,000.

The Mountain Copper Co. and

Balaklala Copper Co. have joined with the Mammoth Cotton Co. in raising the wages of all employees 25c a day, dating back to Dec. 1. The increase is to last as long as copper is 25c or better.

Business in the San Francisco wholesale fruit and vegetable section this holiday season was slower than it has been in previous years, according to old-timers in Washington street. The high cost of living is thought to be the cause.

Judge J. A. Allen of the Superior Court of Visalia, in a recent decision, says: "Fruit under contract for delivery to growers' organizations may not be held by attachment when the producer fails to make deliveries in compliance with contract."

C. F. Door of San Francisco, H. C. Lewis of Porterville and E. L. Thompson of Los Angeles have purchased 2800 acres of the Wendling estate lands in Tulare Lake district, for which they paid \$478,000. The property is considered productive grain land.

With a membership of 350 persons, representing 11 county farm bureaus, the County Farm Bureau of Sacramento is preparing to take an active part in agricultural affairs following its organization. W. R. Klink, rancher and business man of Galt, is president.

Gov. Hiram W. Johnson sent a Christmas message of greeting and congratulation to the University Farm at Davis. It was addressed to Editor T. C. Judkins, Jr., of the University Farm Agricola, and expressed appreciation of the great work accomplished through this Farm.

It is generally understood that the Market Director will ask the Legislature at the coming session to pass such measures as will greatly enlarge his power along the line of enforcing standardization of food supplies. The measures will be opposed to farmers and produce handlers, it is thought.

Evidence that worthless alkali land can be restored to fertility by washing down the alkali through flooding, and preventing recurrence of alkali trouble by drainage and pumping, is given by the University of California in a "Preliminary Report on Kearney Vineyard Experimental Drain," just published by the University of California and obtainable free by writing to the College of Agriculture at Berkeley.

Nearly five million square yards of roadway, the equivalent of 561.9 miles of road 15 feet wide, were constructed under the supervision of Federal road specialists during the last fiscal year, according to the annual report of the Office of Public Roads and Rural Engineering, of the U. S. Department of Agriculture, just issued. This is more than double the mileage constructed in previous years, and include experimental roads, post roads, county roads, and roads in National Parks and forests.

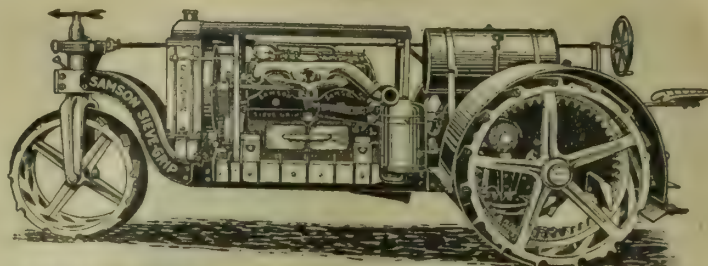
Los Angeles county for 1916 raised 337,176 bushels of apples worth \$350,000; 22,319 tons of peaches worth \$450,000; apricots 5,000 tons worth \$120,000; grapes 13,613 tons worth \$250,000; oranges 4,664,753 boxes, worth \$5,925,000; lemons 752,227 boxes worth \$1,350,000; strawberries 1,768,620 crates worth \$1,000,000; hay 381,396 tons worth \$4,290,000; lima beans 11,890 tons worth \$1,150,000 and walnuts 99,521 tons worth \$995,000.

TULARE'S 8-TO-1 ORDINANCE STILL STANDS.

At a recent meeting of the Board of Supervisors of Tulare Co. to consider the proposition to repeal the 8-to-1 standard for oranges, at which a good attendance was present, Frank Rossire from the Upper Tule country said:

"In 1910, when I first came to this county, this county was shipping oranges so green that the desk blotter there would seem yellow in comparison with them. At that time the people of New York were so bitter against California oranges that

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SAMSON SIEVE-GRIP TRACTOR

THREE SIZES

"Four-Eight"
\$575.00

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Do It NOW! Write for Folder R. P.

WE CAN MAKE DELIVERY

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Tell Us Your Crop Troubles And We Will Help You



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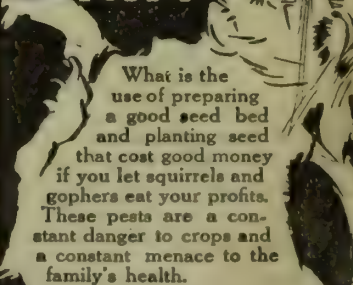
718 Central Bldg., Los Angeles

they refused to purchase them in the markets. When I announced my intention of coming to Tulare county and investing in orange land my friends and relatives said to me; 'What in the name of all that is good do you want to go out there and throw your money away for? Don't you know that California oranges aren't fit to eat?' And I replied that I believed that the conditions surrounding the picking, shipping and marketing of the fruit could be greatly improved and that I was in the mind of making a try at the venture. And to ask me just now, when we have accomplished what we were seeking most diligently, a market control that standardizes the fruit we ship out of this county in a way to win for it the highest prices on the markets of the East, to favor killing the goose that laid the golden egg by repealing the county ordinance that made this standard possible, is asking me to do something that will literally cut the price of my lands in half, and I refuse to acquiesce." The Board refused to repeal the ordinance.

THE STATE FARMERS' UNION.

Judging from the recent state convention held at Modesto, the Farmers' Union of California is entering upon a larger field of usefulness in this State. Over one thousand dollars was raised in one day of the convention for the purpose of putting an organizer into the field who will give his entire time to the work. A State marketing agency in the form of the California Farmers' Union, Inc., already doing business in San Francisco, will act as a clearing house and each county organization will appoint a marketing agent. With this definite program in view, the Union hopes to gather many members into its organization

He'll Make You Poor — KILL HIM



What is the use of preparing a good seed bed and planting seed that cost good money if you let squirrels and gophers eat your profits. These pests are a constant danger to crops and a constant menace to the family's health.

Carbon Bisulphide

has for over 30 years proven to be the most effective—the only sure killer of squirrels, gophers, rats, prairie dogs, ants, moles, yellow jackets, moths, weevils, lice, etc. It is easy and safe to use.

Write today for interesting folder and learn how this profit saver works.

Wheeler, Reynolds & Stauffer
624 California St.
San Francisco California

during the coming year. President C. S. Barret of the National organization was the principal speaker of the convention. Stanislaus county initiated over 50 new members during the convention.

Livestock Facts and Fancies---XV.

[By the Editor.]

We hope readers will not forget the convention to be held in Los Angeles on January 18 and 19 by the California Swine Breeders' Association, as fully announced, with details of the program, on page 651 of our issue of December 9. Members' meetings will begin at 9 a. m. and at 10:30 the discussions will open and continue through the afternoon. At first breeding and feeding propositions will be considered, and at 1:30 p. m. will begin the features to which we desire to call particular attention, viz., discussion of these questions:

Why Prices of Swine in California Are Lower than in Oregon or the Middle States.

Why strictly grain-fed, milk-fed, alfalfa-fed, and acorn-fed hogs all bring about the same price in California.

It is expected that representatives of California packing companies will undertake to answer these questions; and as they are fundamental to the growing interest, the statements of authorized buying interests ought to give growers a better idea of how their product stands related to the trade. If we remember correctly this is the first time in this State that buying and growing interests have come formally to the discussion of matters which underlie the success of both. No doubt there will be some heart-to-heart talks which it will be edifying to hear. The fruit growers found out long ago that there was much to learn by conferences with representatives of buying and shipping interests, and their conventions usually include such features. The Swine Breeders have done well to try to get to the center in this way and they should be encouraged by a large assembly of those interested in the solution of puzzling problems.

Our readers all the way from Puget Sound to San Diego have told us of their difficulties in selling hogs. It seems to be a long coast problem, though possibly California has the worst end of it. It is discouraging and it leaves one of our greatest chances in industry only partly developed. How it acts sometimes can be seen by the following sprightly note which a Lassen county man sent recently to the Sacramento Bee:

When Chicago and Kansas City give 10 and 11 cents for hogs, the present Pacific Coast buyers give 7 to 9 cents. Now, give us 12 cents when Chicago says 11 cents, and conditions will be even, for it costs perhaps 1 cent a pound to get that thirty million dollars' worth of Eastern products here. Why not give us what you give the railroads when we do raise enough? Then we will take an even market.

One of my neighbors and I had a carload of as fine 225-pound hogs as ever walked. We wanted all they were worth. We tried to ship to a concern at Reno, Nev.

What was our answer? It was: "We have a buyer in your locality; we refer you to him." But we already knew Smith, a tip-top old gentleman, too. So we had to take 7 cents a pound for our hogs. And we have quit, just like hundreds of other farmers. Bankers would not lend us money to raise 7-cent hogs, and we would not borrow it either. But give us what hogs are worth;

then we will use their money and pay them back with good interest.

We are not prepared to affirm or deny the statements of this man. That is a matter for careful inquiry and wise talk, but we do know that there is so much that is wrong in the present conditions of producing and selling that growers do not get the money their hogs are worth or else they do not grow hogs that are worth the money they ought to have from an unsupplied local market in the face of very large importation. We do not answer the above letter, because we cannot, but we desire to use it as a prod to get growers who can to the Los Angeles meeting. If the promised discussion comes on, there will probably be some light thrown on such questions.

There is, however, one thing about it: if Pacific Coast growers think they are in foxtail and all others in clover they have another guess coming. The unsatisfactory condition and operation of livestock selling by growers is national. We gave last week a declaration of the recent National Marketing Conference in Chicago on that subject which we hope readers remember. And this conference concluded that something pretty strong is needed to cure present conditions in livestock selling. Here are a few other things the Conference resolved upon:

We urge upon Congress the making of an adequate appropriation and the giving of adequate authority to the Federal Trade Commission to enable it to cover all important phases of the problem of selling livestock, including the experiences of other countries with municipal abattoirs and co-operatively owned packing plants, all to the end that a free and uncontrolled market may be assured, that any existing abuses may be corrected, that present wastes may be eliminated, and that new methods may be adopted. We further urge that the fullest publicity be given to all facts affecting the prices of livestock received by the producer and the cost of meat products paid by the consumer.

This ought to suit the Lassen county writer. He is not the only one who knows there is a nigger in the woodpile who ought to be smoked out, and if Congress cannot do it who in this country can? That is what we urged some time ago that the Los Angeles Swine Growers undertake. Get a government inquiry started; not with any disrespect or injury to the African aforesaid, but for the sake of knowing what the matter is, and where it is.

Another point for the Lassen county complainant is that the trouble is neither local nor new. The National Live Stock Association has been at the front of the subject for years and they have fired some pretty big guns, but so far they seem to have been "repulsed with heavy losses." At the Chicago conference H. A. Jastro of California, president of the National Association and chairman of its Market Committee of the American Livestock Association, which has affiliated with it twenty-nine other of the strongest livestock producing and feeding associations of the entire Middle and

175—High Grade Holsteins—175

The complete Dairy Herd of The Gotshall Cattle Co., of Ripon, San Joaquin Co., Cal., situated on the State Highway, at Public Auction sale at their farm at

RIPON, ON THURSDAY, JAN. 11, 1917 will sell to the highest bidder, without reserve, their complete Dairy Herd, consisting of

65 head of the choicest selected high grade, finely marked, all young, 1st, 2nd and 3rd calf Holstein Dairy cows in this section of California.

90 head of extra finely marked high grade Holstein heifers from 10 months to 2 years old, a number of heavy springers in this lot.

25 head of Holstein calves. 2 finely marked young, high grade Holstein bulls. 2 registered Holstein bulls.

Dairymen and prospective purchasers note this, that this herd has been selected from the best they breed in the high grade Holstein line. Neither price nor care has been spared to get the best they breed, and the herd must and will be sold on the above date.

There are a number of heavy springers in the cows.

Terms can be made with the Gotshall Cattle Company at their office at the Bank of Ripon, San Joaquin Co., on or before date of sale. All terms and time agreements must be made before the sale starts.

The sale will start at 11 A. M. sharp on January 11th.

A nice lunch will be served at noon.

The Gotshall Cattle Company, Owners

J. H. Corley, of Modesto

Auctioneer

CREAM WANTED

Write Us, and We Will Send You Regular Weekly Quotations

Ship to a House of Known Financial Responsibility.

Western Meat Co.
Creamery Dept., San Francisco.

Digester Tankage

Send for Sensible folder on feeding hogs

Western Meat Company

Animal Food Dept. 704 Townsend St., San Francisco

Far West, expressed himself thus: Pacific coast stockmen having interests identical with those of other states in trying to get unrestricted markets for their produce welcome the opportunity afforded by the Chicago Conference on Marketing to present to the American people the great need for consideration of their legitimate demands. They also believe that reasonable profits, based on adequate prices, are necessary for the preservation of the livestock industry and essential to the welfare of the nation.

Mr. Jastro is at the head of great range interests. We do not know how far his views and interests are aligned with or remote from those of the producers of farm stock. No matter how near or far he may be, we are merely using him, with due respect, as a trouble-chaser in this connection. If the Lassen writer and his "pardner" who have gone out on the backs of one carload of hogs and Mr. Jastro who stays in with thousands of carloads of steers, both see trouble in the present situation surely there is something which it is worth going to Los Angeles on January 19 to find out about.

JOTTINGS.

All sick animals should be immediately removed from contact with healthy ones, at least until the nature of the disease is known. They should be fed and watered from separate vessels.

Manure should not be allowed to accumulate inside the stable, as the inhalation of noxious odors in many instances causes an irritation of the air passages and renders them liable to coughs and colds.

The horse should be shod at least once every 40 days whether the shoes are worn or not, as the hoofs overgrow the shoes, this being the cause of inflammation of the feet and corns.

Six hundred and six head of Dur-



HOLSTEIN CATTLE

During the fiscal year ending April 30, 1916, there were reported to the Advanced Registry Office of the Holstein-Friesian Association, 11,868 short time official records, over one-half of which were by heifers with first or second calves. The average seven-day production of these 11,868 animals was 401.1 lbs. of milk, containing 3.53 per cent of butterfat. These figures emphasize the fact that Holstein merit is based, not on individual records, but upon the wonderful uniformity of high productiveness of the purebred Holstein cow. Send for FREE Illustrated Descriptive Booklets. The Holstein-Friesian Association of America.

F. L. Houghton, Sec'y.
Box 230, Brattleboro, Vt.

TAMWORTHS

(The Bacon Hog)

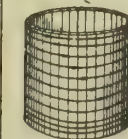
Largest Herd in the State

DUROC - JERSEYS

Mature Stock and Weanlings of both sexes. Sure to please.

SWINELAND FARM.

W. O. Pearson, Prop., Woodland, Cal.



REDWOOD TANKS — SILOS.

Thirty-five years in the business in Stockton.—A 500-gallon tank, \$8.00. A tank 6 ft. x 2 1/2 ft., \$7.50. Other tanks equally cheap. I deal direct with the consumer, saving 10% to 25%. All sizes in stock. Clear, dry redwood direct from the mill. Write for price today.

Latest improved machinery. Doors, Windows, Frames, Mouldings.
R. F. WILSON, STOCKTON, CAL.

AUCTIONEER

(Phone Farmers 394.)

Will conduct sales anywhere in California

Purebred livestock sales given special attention

For dates and terms address

T. J. GILKERSON, Lemoore, Cal.

BLAKE, MOFFITT & TOWNE

Dealers 57 FIRST ST., SAN FRANCISCO
in Blake, Moffitt & Towne, Los Angeles
PAPER Blake, McFall & Co., Portland, Oregon

ham and Hereford calves will be pastured during the winter on the Porterville Alfalfa Farms at Tipton.

Dairymen in the vicinity of Tulare were paid approximately \$986,000 during 1916 by three creameries in that city.

Sixty Acres for 150 Cows.

[Written for Pacific Rural Press.]

It is a mistake to try to replenish your dairy herd with outside purchases of fresh cows, in the estimation of Borchers Bros. of Sacramento county who have been running a large market-milk dairy for a long time, and who realized 12 years ago that the only sure and economical method of securing high-producing cows is to use a good bull and raise your own heifers.

Holstein bulls are the kind that have been in use, care being taken in later years to see that they were from high-producing ancestors. As a result of this practice, strings of 25 cows in their herd average 1,000 to 1,200 pounds of 3.3 per cent milk a day for nine months of the year in which green alfalfa feeding is possible.

Contrary to the general belief that only those heifers from the best cows should be raised, Messrs. Borchers raise every heifer, stating that many times a heifer from a mediocre cow will prove an exceptional producer; if not during her first lactation period, then during her second one. But they believe in culling, and sell a number of cows every year because they do not come up to the production requirements.

For the last two years they have gone still further in the matter of raising calves, keeping all the bull calves as well as the heifers. This was done with the idea of turning off beef steers instead of veal, the policy being to keep them till they are three years old when an average of \$75 a head is expected for them.

Naturally these steers are not fed such high-priced feed as the milking cows receive, but are run on cheaply rented pasture lands. This land is not used purely for steer pasture, 200 head of calves, steers, and dry stock being run on the same land, at a cost of \$500 for rent during nine months of the year. Except for skim milk and alfalfa, fed during early calfhood, there is very little expense connected with the steer-raising experiment.

The practice in raising heifer calves has been the same for years on this dairy; whole milk being fed two to four weeks, after which skim milk is fed with freshly-cut green alfalfa. If there be any question as to the practicability of raising calves on skim milk Mr. Borchers will

point to the size and vigor of his cows.

"Soiling" Their Alfalfa instead of making hay of it is another point on which Messrs. Borchers have very decided ideas. During the alfalfa growing season, which with them is about nine months of the year, all alfalfa is fed green directly after cutting. Two advantages are found in this system: (1) A milk flow equally heavy as when pasturing is practiced without the danger of bloat, and (2) a big saving in feed as the cows eat the green-cut alfalfa clean, while there is a certain amount wasted in hay feeding.

While the character of their sub-irrigated land has much to do with the yields of alfalfa, it is instructive to know that between March 1 and December 1, 1916, 60 acres of this sub-irrigated land furnished all of the alfalfa for 150 milking cows and 100 tons of hay were cut from the same land. It would have been impossible to carry such a large number of cows for such a long time on this land had either pasturing or hay cutting been practiced, thinks Mr. Borchers; and while it is true that more labor was involved, this is more than offset in the saving of feed.

Wet brewers' grains are fed in connection with alfalfa the year round, about six gallons a day being fed to each cow in her two feeds. This and green alfalfa produce more milk than brewers' grains and alfalfa hay as is shown during the winter months when alfalfa hay is substituted for the green alfalfa, at which time production falls off. But it would be still better, thinks Mr. Borchers, to feed brewers' grain, alfalfa hay, and green alfalfa at the same time; as cows are apt to get tired of alfalfa or any other feed in one form alone.

Like most all dairymen supplying whole milk to the city markets the Borchers experienced difficulties in selling to San Francisco distributors. As a consequence, they opened an ice-cream parlor and creamery in Sacramento last year; and while this has not solved all of their troubles, they are assured a regular market at better than distributors' prices. Even their buttermilk finds a heavy retail demand during the hot summer months at good prices.

Keeping Hogs Free of Lice and Fleas.

[Written for Pacific Rural Press.]

There are very few hog quarters where fleas and lice cannot be found at some time of the year, and in some instances hog profits are sorely reduced on this account.

At the Riverina Farm in Stanislaus county this condition is never allowed to arise for, according to Manager Johnson, "we can't afford to feed \$2.00 barley to a brood of fleas or lice."

Creosote and crude oil are the agencies depended upon by Mr. Johnson to keep both fleas and lice from the hogs and hog premises, the creosote being used as a spray for the side walls of the buildings and on the hogs. The latter work is done at feeding time, when spray-

ing is convenient on the backs of the animals.

To keep the fleas from infesting the floors of the farrowing and fattening houses, hot crude oil is applied to the wood and thoroughly mopped in. This and the spraying are done at regular intervals whether vermin appear or not, as it is the intention to prevent them rather than have to cure them.

The outside wall of a horse's hoof should never be touched with a rasp of file, as the covering (Periople) provided by nature is removed, thus permitting the penetration and absorption of filth that causes the hoof to become contracted and brittle, producing a predisposition to quacks.

Hillcrest Stock Farm

Shorthorn Cattle, Shropshire and Merino Sheep



King Lancaster, sired by King Edward, grand champion bull State Fairs, 1909-10-11.

Shorthorn Bulls for Sale, sired by such noted bulls as King Lancaster, Knights Perfection, Greenwood Knight and Greenwood King. Nearly all offsprings of the famous King Edward.

These Bulls are conceded to be the best offering ever made from the Hillcrest Stock Farm.

For Particulars Apply—

T. S. GLIDE
Proprietor.
Davis, California

Shorthorn Bulls You'll Like

That's the only kind we have included in our 1916-17 offering, for, above all things, we want you to be satisfied.



Ormondale Victory, the bull shown, is one of the extra good yearling bulls we now have for sale. He is big-boned, growthy, solid red in color, thick meated, sired by the good bull Imperial Victor, and out of Scottish Jane. The kind any breeder or cattle man can safely buy.

THE KIND THE TRADE DEMANDS.

Come and see our herd, 7 miles from Palo Alto on the Woodside Road, or write us for pedigrees and prices.

SOLID GUARANTEES WITH EACH ANIMAL.

Shorthorn Cattle
Duroc Jersey
Swine

ORMONDALE CO.

R. F. D. No. 1
Redwood City
California

GRANDSONS OF TILLY ALCARTRA

We now offer two young bulls for sale that are old enough for service. No. 1—Born Sept. 13, 1915.



Prince Alcartra Korndyke.
Best bred son of Tilly Alcartra.

His Dam is a 21-25 4-yr old, sired by a son of Beryl Wayne Korndyke, who has two 30 lb. daughters. His full sister has a record of 18.56 lbs. butter in 7 days at age of 2 years 3 months and will be kept on test for the year.

No. 2—Born Sept. 3, 1915. His dam is a heavy producer and will be put on test next time she freshens. His full sister has a record of 19.36 in 7 days at 2 years 6 months and will also be kept on test for the year.

The bulls are nicely marked, have perfect top lines, are good individuals and both sired by Prince Alcartra Korndyke, who now has 6 A. R. O daughters and more coming.

Write for prices, or better come and see them.

J. S. GIBSON CO., Box 97 Williams, Cal.

"THE NAME GIBSON INSURES QUALITY."

KINGS COUNTY JACK RANCH

BREEDERS AND DEALERS

AMERICAN JACKS AND JENNETS.

LARGEST HERD IN THE COUNTRY.

80 Head Jennets

40 Head Jacks

CAN SUPPLY YOUR WANTS AT ALL TIMES.

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John Burrell, Proprietor

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Sales barn in Hanford near S. P. Depot.

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Best of all. NO WHIFFLETREES NO TRACES. You can hitch closer to your horse, and work. You can hitch closer to your horse, and cultivate close to the row and save 40% of your man and team. No weight of whiffletrees for man to lug. Everything clear behind team. Use our outfit and save your trees. Highest endorsement of farmers and fruit growers.
B. F. BAKER CO., NUMBER 1220
MAIN ST., BURNETT HILLS, N. Y.

Durocs For Sale

OPEN AND BRED GILTS
BOARS
Breeding and Individuality
Right

Tagus Ranch
(Pacific States Corporation)

Hulet C. Merritt, Pres.
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TULARE, CAL., via TAGUS.



"Gee! But I Have an Appetite!"

A cow that eats poorly usually milks poorly, and any poor milker is a loss. Lost Appetite is only one of the common cow ailments that quickly disappear after judicious use of Kow-Kure, the great cow medicine.

Kow-Kure has a record of over twenty years' success in the prevention and cure of such diseases as Abortion, Barrenness, Retained Afterbirth, Milk Fever, Scouring, Bunches, etc. Most of these diseases spring from disordered digestive or genital organs, and Kow-Kure has strong medicinal qualities which tone up and permanently strengthen the entire system.

A trial is convincing. Kow-Kure is sold by feed dealers and druggists, in 50c and \$1.00 packages. Write for free treatise, "The Home Cow Doctor."

DAIRY ASSOCIATION CO.
Lyndonville, Vt.

KOW-KURE

FOR COWS ONLY

THE HOME COW DOCTOR

GERMAIN SEED & PLANT CO.,
Los Angeles, Cal.
Portland Seed Co., Portland, Ore.
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Raise Your Calves on Blatchford's Calf Meal and Sell the Milk

More calves have been raised on Blatchford's Calf Meal than on all other milk substitutes combined.

100 lbs. makes 100 gallons of milk substitute, costing only one-third as much as milk. Prevents scouring and insures the early maturity of sleek, handsome calves.

It is steam-cooked and no trouble to prepare or use.

Write for Pamphlet "How to Raise Calves Cheaply and Successfully with Little or No Milk." At dealers, or

Coulson Poultry & Stock Food Co., Inc.,
Petaluma.



Registered Jacks

Range raised; Guaranteed satisfactory breeders. Field Jacks a specialty. Registered Shire Colts. Will trade for young mules, horses or land.

James W. McCord
Hanford, California

THE PROPER USE OF COW-TESTING RECORDS.

[Written for Pacific Rural Press.]

While it is gratifying to know that over 20,000 dairy cows in the State are now being tested in cow-testing associations, an increase of approximately 15,000 head in a little over two years, it is disappointing to learn that many dairymen who have their cows tested in these associations are not getting the most good from the associations' records.

A case in point is related by the secretary of one association regarding a member who had to be dropped because he insisted upon entering his 30 best cows instead of his entire herd of 45 cows. His reason for doing this was that the monthly reports of the association, which are published in the local papers, showed his herd average to be high, due to his testing only the best cows. Thus he was enabled, if he so desired, to mislead the public into believing that his entire herd were high producers.

What he hoped to gain by this, other than the notoriety which could only be realized on through the sale of cows and calves, is hard to appreciate. The real truth of the matter was that he was damaging nobody but himself, for he was not using the association's records to improve his entire herd by breeding and selection, the fundamental purpose of cow testing.

Another practice which is far too general among members of these associations is neglecting to compile the monthly reports into a yearly report. This leads to a confusion of ideas about the production of individuals. Many times a cow's value is placed upon one or two months' work instead of upon the entire lactation period. The result is that many of the persistent cows are frowned upon as second class and their heifers not considered so valuable as those from cows with outstanding production for a few months but which drop off in their milk flow early in the lactation period.

Experienced members of cow-testing associations have learned that the chief value of the records is realized by using them as a criterion of how to breed and select for higher production in the offspring.

SALTING PORK.

To the Editor: For putting down pork for summer use how long should it be left in salt before smoking? Which is the best to use—fine or coarse salt?—L. B. T., Los Molinos.

Bacon and small pieces should remain in salt or brine about six weeks; hams and shoulders, seven or eight weeks. If the brine becomes ropy, remove the meat and boil the brine again. Wash with warm water and wipe dry before smoking. Coarse salt is more likely to be pure and cheaper, therefore preferable.

The old familiar saying: "If a horse has a broken leg, remove the shoe and examine the foot anyhow," should certainly be acted on to the extent that every lame horse should have the shoe removed and the foot thoroughly examined.

A mixture of equal parts of tinct. iodine, turpentine and sulphuric ether, applied once daily for several days, will stop the growth of new splints on animals.

Edgemoor Farm Guernseys



Imp. Itchen May King, 25174.

Pretty Productive Profitable

A Few Animals of Either Sex For Sale

SANTEE, CALIF.

H. F. SCRIBNER, Supt.

W. H. DUPEE, Pres.



Let Me Buy Your Shorthorns - Herefords

I have bought show and breeding cattle for most all of the older breeders in California and my wide experience here, together with my knowledge of Eastern herds makes it possible for me to secure

THE BEST AT A BIG SAVING TO YOU.

I am now taking orders for my next trip East to secure on a strictly commission basis, high class stock for California customers. Write me at once of your wants.

As to the service you may expect I refer you to the following satisfied customers: W. Mayo Newhall, San Francisco; W. Bemmerly, Woodland; Parrott Est. Co., Chico; Frankenhimer Bros., Stockton; A. E. Noyes and Son, Sutter City, Stanford University Ranch, Vina; Wm. Russ, Eureka; and J. A. Donohoe, Donohoe-Kelly Banking Co., San Francisco.

ADDRESS ME

R. M. DUNLAP

DESK A, ROOM 217, UNDERWOOD BLDG., SAN FRANCISCO, CAL.



San Ramon Shropshires WINNINGS P. P. I. E., 1915.

Aged Ram, First and Second. Yearling Ram, First. Ram Lamb, First, Second, and Third. Champion Ram. Yearling Ewe, Second. Ewe Lamb, Second and Third. Get of Sire, First. Pen of three Lambs, bred by Exhibitor, First and Fourth. Pen of four Rams, bred by Exhibitor, First and Fourth. Flock, any age, Second. Flock, any age, bred by Exhibitor, Second. Flock, one year old, First. Flock, one year old, bred by Exhibitor, First. Flock under one year, First. Flock under one year, bred by Exhibitor, First. Produce of Ewe, First. Second and Third. Premier Championship for Breeder. Premier Championship for Exhibitor. A total, including American Shropshire Specials, of 15 Firsts, 9 Seconds, and 6 Championships.

Purebred Registered Rams and Ewes. Individuals or Carload Lots.

BISHOP BROS., Agents. SAN RAMON. Contra Costa County, California.

Champion Ram P. P. I. E.



KIMBLE RAMBOUILLETS.

These sheep are purebred, large and smooth, with heavy fleece of fine, long, staple, white wool. Yearling rams and ewes. Individuals or carload lots.

Prices reasonable.

Correspondence solicited.

CHAS. A. KIMBLE, HANFORD, CAL.

Breeder and Importer.

HOPLAND STOCK FARM REGISTERED SHORTHORN BULLS

REGISTERED BERKSHIRES (Boars, Bred Sows and Glits) HERD BOAR, ROYAL POINTER 2nd, 19792, First Prize Senior Yearling, P. P. I. E.

3 REGISTERED HOLSTEIN BULLS from High-Testing Cows. SAN FRANCISCO OFFICE, 1219 FLOOD BLDG.

Live Stock and Dairy Notes.

[Livestock breeders all over the State are invited to send on postal cards, notes regarding their sales, State and County Fair intentions, new stock, etc.]

THE DAIRY.

J. E. Thorp of San Joaquin county advises us that he has two of his registered Jerseys on official test and that both of them hold promise of making the Register of Merit without difficulty.

Wisconsin produces more butter than any other state in the United States. Her farmers receive two-thirds of the price which the consumer pays for this butter, says B. H. Hibbard of Wisconsin.

State Market Director Weinstock, after investigation, reports that it costs on an average 15 cents per gallon to produce milk on the farm. It cost about 1½ cents a gallon to lay the milk down at San Francisco, making the total cost 16½ cents a gallon.

Dr. Williams of Cornell University, New York, visited in the neighborhood of Galt recently, where he lectured on abortion and sterility, etc., illustrating by operations on eleven head of cows. He was accompanied by veterinary surgeons from the University of California.

N. H. Locke & Co.'s Empress Lass, according to a late statement, produced 11,956 4 pounds milk and 637 pounds of butterfat in 311 days. The butterfat sold for \$197.99. The cost of all feeds, including pasture was \$70.79. This shows a net profit of \$127.20, besides two healthy calves, within the year, skim milk, etc.

F. H. Arnsburger, proprietor of the San Joaquin creamery and owner of a dairy farm near Lathrop, stated recently at a meeting of Stockton milkmen that it cost him on an average of 13½ cents a gallon to produce milk at his farm. He declared that he keeps accurate records for the purpose of deciding whether it is cheaper to buy his milk or produce it himself.

The Holstein-Friesian Association, through its superintendent, Malcolm H. Gardner, reports that the Holstein-Friesian heifer Nalad Jewel Pet 269082 has broken the record for fat production in the senior two-year class of the 7-day division, by producing in seven consecutive days 478.4 pounds milk containing 25.28 pounds fat. She is owned by Mr. Oliver Cabana, Jr., Elma Center, N. Y.

BEEF CATTLE.

The National Western Stock Show will be held in Denver, Colorado, January 21-27, 1917.

The twentieth annual convention of the American National Livestock Association is to be held at Cheyenne, Wyoming, January 18, 19 and 20. The proposed advance in grazing fees will be one of the very important subjects for discussion.

The Ormondale Co., breeders of Shorthorn cattle in San Mateo county, report the sale of three high-class Shorthorn bulls to W. Mayo Newhall of the Newhall Land and Farming Co. Among the lot was the bull Ormondale Victory, a yearling which was a likely show prospect.

Barney A. Benjamin, one of the best known men in the meat-packing trade in Los Angeles, for twenty-four years in the office of the Cudahy Packing Co. and for much of that time assistant manager, has resigned. He severed his connection with the Cudahy packing people last week, and will leave Los Angeles to enter the meat trade in Fresno, California, as head of the Universal Packing Co., a new organization.

R. M. Dunlap advises us that he will leave for the East shortly to fill the following orders for purebred beef cattle; a number of Hereford bulls, including a new herd sire, for the Simon Newman Co. at Newman, whose herd he formerly managed; a high-class herd sire for Ben Rush

of Suisun and two Polled Durham bulls for Jas. Hamilton of Exeter. Mr. Dunlap has previously imported cattle for all of these parties, including show cattle at various times.

At the International Livestock Exposition held at Chicago, December 2nd to 9th, Wilson & Co. gave the highest price ever paid for a carload of beef cattle in the United States. This was the grand champion carload lot fed by Ed. P. Hall of Mechanicsville, Illinois—15 head of Aberdeen Angus yearlings—of an average weight of 1146 lbs. per head; making a total weight to the carload of 17,200 lbs. The cattle were bid in at auction by Wilson & Co. at 28c a lb., the previous high record being 17c per lb. The price for the cattle averaged \$321.08 a head and the total cost of the carload was \$4,816.00.

SWINE AND SWINEMEN.

In a recent Arizona Boys' Pig Contest the honors and \$19 in cash prizes were won by a little girl—Mary May Pitts, 11 years old.

A recent shipment of 1300 hogs from Hanford to San Francisco averaged about 190 pounds in weight, and the price paid was from \$7.50 to \$8.50 per hundred, according to quality.

Land has been purchased and construction work started on a new pork packing establishment by the Moran Co. at South San Francisco. While smaller than the one there owned by the Western Meat Co., the plant will be modern in every respect.

J. C. Bruss of Tulare has received twelve head of Tamworth hogs from Palmer, Illinois, and plans to raise this breed of hogs on a ranch near Tulare. These hogs are from registered stock and premium winning sires. English bacon is made from this kind of hog.

H. E. Boudier reports some sales from his ranch near Napa, as follows, which he traces as a direct result of his advertising notice in the Pacific Rural Press: Duroc boars to Albert Joppas, Ferndale; Hiram Briggs, Healdsburg; D. W. Rogers, Gazelle. Duroc sows to A. Munk, Napa; I. W. Brown, Placerville.

SHEEP.

There was shipped out of New Mexico for the year of 1916 885,886 sheep and into the state 29,386.

The annual convention of the National Wool Growers' Association is held at Salt Lake City, Utah, Jan. 11, 12 and 13.

Two carloads of purebred livestock, including some fine specimens of Shropshire sheep, have arrived at the Butte City Ranch in Glenn county.

Andrew McInnes, a sheep man of Red Bluff, has just returned from the Northwest, where he bought 46 carloads of ewe lambs. He believes mutton is going to be scarce next year and is getting hold of all the sheep he can.

Roy D. Mayes, Dixon capitalist, has purchased 3,000 acres of land in Lassen county, with control of 50,000 additional acres, with the object of engaging in sheep raising. He bought 8,000 sheep with the property, and the range is sufficient to feed 10,000 head. The land is located about five miles from Susanville.

The feeding of 12,000 head of sheep under the new plan adopted this season by the Western Meat Company has been very successful at the yards of the Visalia Sugar Company. These 12,000 head will soon be shipped to market and more sheep brought in. The total feeding will take care of 30,000 head of sheep, it is announced, and will cost the Western Meat Company close to

LIVESTOCK DIRECTORY.

Rates in this directory, 3c per word each issue, or if carried weekly for one year, 2½c per word.

SWINE.

Poland Chinas.

SMITH'S POLAND-CHINAS—Sows and gilts bred to Joker, First Prize Boar at the Wisconsin State Fair, 1915. These sows and gilts, sired by Iowa Wonder, who is a son of A Wonder, the most celebrated Poland-China boar, living or dead. Litters from this mating are the best I have ever seen anywhere. Prices low quality considered. Will sell one or a carload. As a special inducement each purchaser will be given a year's subscription to the American Swineherd, the best swine paper published and a copy of the Handbook on the Sow; also a copy of the Pig Feeders' Manual. Geo. A. Smith, Corcoran, Cal.

MAKE BIG MONEY with our Big-type Poland-Chinas. Smooth, easy feeders that make greatest weight in shortest time at lowest cost, topping the market at 225 lbs. in 6 months. 300 head, both sexes, all ages, reasonable prices. Best Eastern blood lines. Satisfaction guaranteed. Ranch in Tulare county, but address owner, E. E. Whitten, 610-A Security Building, Los Angeles.

GRAND CHAMPION SUPERBA POLANDS—A few choice spring Superba boars ready for service. Sows bred to Superba for fall litters. Prices reasonably low. Rough's Greenfield, Arlington Station, Riverside, Cal.

FOR QUICK SALE—Registered Poland-Chinas. 15 boars four to six months old. \$20 each. 10 gilts same age. \$15 each. Registration free. Stock first class. C. L. Vanschoeck & Sons, Chico, Cal.

REGISTERED POLAND-CHINA BOARS of serviceable age. A Wonder and Chief Picture breeding. Every animal guaranteed. Price \$25. Bar N. Ranch, E. A. Noyes & Son, Props., Sutter, Cal.

POLAND-CHINAS—Bred gilts, \$15; young boars, \$10 and \$15; bred sows, \$25. Weanlings, either sex, \$6. Registered and crated, purchaser to return crates. E. A. Hall, Watsonville, Cal.

REGISTERED POLAND CHINAS—Young boars ready for service. Weanling pigs, both sexes. Prices attractive for quick sales. J. H. Cook, Paradise, Cal.

REGISTERED POLAND-CHINAS—Prolific, pabulous, profitable porkers. Choice boars now ready for service, \$25 each. Weanlings, \$15. Dr. J. A. Crawshaw, Hanford, Cal.

LAKESIDE STOCK FARM POLAND CHINAS are money-makers. Satisfaction or money refunded. Geo. V. Beckman & Sons, Lodi, Cal.

FOR SALE—Two O. I. C. Registered brood sows, one registered Poland-China boar, 47 shoats and pigs. John Willerton, R. F. D., Oakdale, Cal.

BIG-TYPE POLAND CHINAS—Stock from the best herds of the Middle West. N. Hank Alton, Humboldt Co., Cal.

POLAND CHINAS—Big type. Shoats, either sex, or in unrelated pairs. O. L. Linn, Linview, Route A, Modesto, Cal.

POLAND-CHINAS—Big type combined with quality. Choice bred sows, gilts, boars. W. D. Trewhitt, Box 82A, Hanford, Cal.

REGISTERED POLAND CHINA SWINE—Prize-winners. Finest stock in the State. \$20 up. M. Bassett, Hanford, Cal.

POLAND-CHINAS—Stock for sale at all times. We please you or refund your money. W. A. Young, Lodi, Cal.

REGISTERED POLAND-CHINAS and Duroc Jerseys. Cholera immune for life. T. H. Beckman, Lodi, Cal.

POLAND-CHINAS—Large type. The Browning Stock Farm. W. H. Browning, Woodland, Cal.

DEACON RANCH POLAND CHINAS—Prize winners. Young stock reasonable. Box 27A, Davis, Cal.

KNOB HILL STOCK FARM—Registered Poland-China Swine. A. M. Henry, Farmington, Cal.

REGISTERED POLAND CHINA WEANLINGS—Prices moderate. R. R. 1, Box 34, Galt, Cal.

AMAWAGE FARMS—Poland-China hogs and Holstein cattle. G. H. Loughery, Visalia, Cal.

REGISTERED POLAND-CHINA HOGS—J. A. Clark, R. 4, Lodi, Cal.

REAOAKS RANCH herd of registered Poland-Chinas. W. J. Hanna, Gilroy.

POLAND-CHINAS—Prize-winners. Money-makers. W. Bernstein, Hanford, Cal.

Berkshires.

GRAPEWILD FARM BERKSHIRES—World's Fair Grand Champion Grand Leader 2nd heads our herd, not only himself a champion, but the sire of Champions. At the 1916 California State Fair his daughters won first in all of the senior sow classes, including the Grand Champion Sow. At the 1916 Oregon State Fair a Grand Leader sow was Junior Champion. We are offering a number of choice boars of exceptional breeding and are also booking orders for fall pigs. A. B. Humphrey, Escalon, San Joaquin Co., Cal.

WINONA BERKSHIRES—One beautiful May 2, 1916, daughter of Laurel Champion, out of Silbirta Duchess 15th. An outstanding show prospect. Write for particulars today. Winona Ranch, Route 1, A-Box 10, Grant's Pass, Oregon, F. R. Steel.

50 BRED SOWS AND GILTS—50 of true Berkshire type and quality, bred to Grand Champion boars, are included in our private sale list now ready for mailing. Write for it today. Silver Birch Farms, Box B. P., Newport, Wash.

REGISTERED BERKSHIRES—Progeny of Improver B. Young stock now ready for sale. Start your herd with breed and strain of established reputation for California conditions. Geo. G. Meckfessel, Berlin, Cal.

BERKSHIRES—I have one of the best herds on the Pacific Coast, including Grand Champion Sow, Reserve Grand Champion Boar under one year, Third Aged Boar, etc. Frank A. Smith, Santa Rosa, Cal.

CHOICE REGISTERED BERKSHIRES—Exceptionally fine pigs. \$15 each. Unrelated trios, \$40. Boars, sows, and gilts at reasonable prices. W. H. Waugh, Riverside, Cal.

SPECIAL—Six good service boars and a few sows in pig to Premier Leader due to farrow in October. Geo. M. York & Son, Berkshire breeders, Modesto, Cal.

CHAS. GOODMAN—Breeder of high-class Berkshire Swine. Williams, Cal.

IMMUNIZED NORMANDY BERKSHIRES—Good type. Breeding stock, any age, for sale at all times. Cast iron guarantee. Arlington Smith, Visalia, Cal.

BERKSHIRES—Bred sows and weanling pigs. Write for prices and pedigrees before buying. Butte City Ranch, Box P, Butte City, Glenn Co., Cal.

REGISTERED BERKSHIRES of prize-winning blood. Write for description and photos. Imperial Stock Farm, Morgan Hill, Cal.

REGISTERED BERKSHIRES—For sale, bred sows. Boars ready for service and weanling pigs. C. H. Thompson, Novato, Cal.

ROSE CREST BERKSHIRES—Rivals Champion Best blood. Open and bred gilts. Service boars. F. L. Hall, Perris, Cal.

30 REGISTERED BERKSHIRES—Boars and gilts for sale. J. H. Benedict, Lamore, Kings county.

BERKSHIRES—Carruthers Farms, Mayfield, Cal. Second annual sale. August 3, 1917.

HOPLAND STOCK FARM—Registered Berkshires. Prices on application. Hopland, Cal.

REGISTERED BERKSHIRES—Weanling pigs, \$10 each. G. A. Casey, R. 7, San Jose.

REGISTERED BERKSHIRES—Young stock for sale. F. W. White, Elk Grove, Cal.

Duroc-Jerseys.

DUROC JERSEYS—My hogs won highest honors at State Fair, taking first prize herd, first prize sow, second prize boar. Were the largest of their age exhibited. Stock all ages for sale. Prices reasonable. Breeding and satisfaction guaranteed. Haden Smith, Route 1, Box 84D, Woodland.

DUROC JERSEYS FOR SALE—Third Prize Senior Yearling at 1916 State Fair. One choice 8-month-old boar. Weanling boar pigs. Enterprise Stock Farm. H. P. Eakle, Jr., Woodland, Cal., R. D. 3.

REGISTERED DUROC-JERSEYS—Service boars from prize-winning stock are money-makers. They grow faster. New England California Corporation, Ripon, Cal.

CROLEY'S BALANCED HOG FEED—The cheapest feed to fatten hogs. Write Geo. H. Croley Co., Inc., Live Stock Supplies, 631-637 Brannan St., San Francisco.

DUROC JERSEYS—Herd boars. E. N.'s Colonel and Tulare Boy. Sweepstakes winner at Fresno, 1915. Choice breeding stock. J. P. Walker, Visalia.

REGISTERED DUROCS—Service boars and open gilts from High Model, Defender and Crimson Wonder stock. River Bend Farm, St. Helena, Cal.

RANCHO RUBI'S DUROCS—All sold except a few July and September gilts. Extra good. Write for prices. Elmer Lamb, Cores, Cal.

REGISTERED DUROCS of guaranteed breeding. All ages. Weaned pigs, \$10. H. E. Boudier & Son, Napa.

HEAVY BONED DUROCS—A few service boars for sale. Ormondale Co., Route 1, Redwood City, Cal.

DUROCS—Defender, Cantic B and Golden Model strain. The big type. Allen Thompson, Tulare.

REGISTERED DUROCS—Crimson Wonder stock. Young stock, both sexes. L. D. Collins, Denair, Cal.

REGISTERED DUROC-JERSEY SWINE—Both sexes. Big-boned type. B. F. Kendall, Hardwick.

WINTON DUROC-JERSEY FARM, Winton, Cal.—High-class pure-bred hogs both sexes, any age.

DON HERMANOS REGISTERED DUROCS—Duveneck & Pickersgill, Ukiah, Cal.

CURTIS DUROCS of either sex at all times. E. C. Curtis, Napa, Cal.

REGISTERED DUROC-JERSEY SWINE—Frederick M. Johnson, Napa, Cal.

DUROCS—Big type, both sexes for sale. Ed. E. Johnson, Turlock, Cal.

REGISTERED DUROC-JERSEYS—S. S. Southworth, Napa.

Yorkshires.

LARGE YORKSHIRES—Choice spring boars, gilts, and weaned pigs from Champion sow P. P. I. B., or from breeding of champion boar and sow, Sacramento, 1916. If you see them grow you will like them. Riverina Farms, Paradise Road, Modesto, Cal.

LARGE YORKSHIRES—The ideal hog for the progressive farmer. Young stock for sale. A. L. Tubbs Co., Calistoga, Cal.

Chester Whites.

BILLIKEN HERD OF CHESTER WHITE Swine—Registered and Cholera Immune. 4 bred gilts due to farrow the latter part of January. 10 young boars of service size. 20 open gilts that will be bred to suit the buyer. Write for the booklet "Chester Whites" and find out what the breed is and what they are doing. This herd represents the very best blood lines the breed produces. C. B. Cunningham, Mille, Sacramento County, Cal.

EASY FEEDING—Quick-growing type Chester White gilts and boars for sale. Address Melone Co., Oak Knoll Ranch, Napa, Cal.

REGISTERED IMPROVED CHESTER Whites—Grizzly Bear Ranch, East Auburn, Cal.

Essex.

LITTLE BLACK ESSEX—Service boars and weanlings. Only herd in the State. Limited supply. Yolo Essex Herd, L. W. Millsap, Yolo, Cal.

Hampshires.

BELLA VISTA HAMPSHIRE SWINE—from prize-winning stock. J. W. Henderson, First National Berkeley.

DAIRY CATTLE.

Holsteins.

FOR SALE—From 1 to 100 extra fine, straight, well-marked, light colored, highly bred, registered Holstein heifers from 6 to 18 months old. They are rich in the blood of King of the Pontiacs, Pontiac Korndyke, Hengerveld De Kol, Rag Apple Korndyke 8th, King Segis and other most celebrated sires of the breed. Prices very reasonable. Write Geo. A. Smith, Corcoran, California.

REGISTERED HOLSTEINS—Herd sire King Korndyke Hengerveld Ormsby 7th, 86623. His full sister as Junior 3-year-old made 32.04 lbs. butter in 7 days. The record of his dam and his sire's dam averaged 30.98. George Kounias, Modesto, Cal.

25 HIGH-GRADE HOLSTEIN Heifers, sired All tuberculin tested. Also 35 yearling heifers sired by same bull. Terms and prices apply to W. H. Nichols, 2552 Haate St., Berkeley, Cal.

REGISTERED BULLS by King Korndyke Pontiac and out of A. R. O. cows. A splendid selection old enough for service. Write or call. J. H. Harlan, Woodland, Cal.

REGISTERED HOLSTEINS—Grandsons of King Segis and of world's record cow Creamelle Vale. Will build up the production and value of your herd. Write or call and see them. F. H. Stenzel, San Lorenzo, Cal.

40 HEAD of high-class heifers—28 Holstein, 9 Jersey, 4 Durham, 1 Brindle, ranging in ages from six months to thirty. Out of high-class dairy stock and in fine condition. Almondale Farm, Modesto, Cal.

A NICE YOUNG SON from El Prado Wayne Colanthe and from a 24.26 lb. dam. J. W. Benoit, Breeder of Registered Holsteins, Route 1, Modesto, Cal.

TULARE GUERNSEY AND HOLSTEIN Farm is offering young bulls of both breeds. Excellent breeding. Prices reasonable. W. J. Higdon, Tulare, Cal.

THE McCLOUD RIVER LUMBER CO., McCloud, Cal.—High-class thoroughbred Holstein bulls for sale. Write for prices and pedigrees.

THE HENDERSON CO.—Breeders and importers. Registered Holsteins. Sacramento Bank Bldg., Sacramento.

BREEDERS OF REGISTERED HOLSTEIN cattle and Berkshire pigs. Whittier State School, Whittier, Cal.

REGISTERED HOLSTEINS—A. W. Morris & Sons, Corp., Importers and Breeders. Woodland, Cal.

CREAMCUP HERD—Registered Holsteins Pontiac bull calves. M. Holdridge, Modesto, Cal.

SUNNYSIDE HERD—Registered Holstein cattle. R. F. Guerin, R. 3, Box 58, Visalia, Cal.

REGISTERED HOLSTEIN CATTLE—E. E. Freeman, Route B, Modesto, Cal.

REGISTERED HOLSTEIN BULLS for sale. Sunnyside Ranch, Willits, Cal.

REGISTERED HOUSTON BULLS for sale. C. L. Morse, Route B, Modesto, Cal.

REGISTERED HOLSTEIN BULLS from A. R. O. dams. B. F. Anderson, Modesto, Cal.

BREEDERS OF REGISTERED HOLSTEIN cattle—McAlister & Sons, Chino, Cal.

FOR SALE—Registered Holstein Bulls. Prices right. E. B. Church, Sierraville, Cal.

REGISTERED HOLSTEIN BULLS, \$50 to \$150. Goriotta Stock Farm, Woodland, Cal.

CHOICE HOLSTEIN bulls for sale. No females. Millbrae Dairy, Millbrae, Cal.

HOLSTEIN COWS for sale with records. Dr. Stetson, Napa, Cal.

REGISTERED HOLSTEIN-FRIESIAN CAT-tle—J. M. Campbell, Escalon, Cal.

A. R. O. HERD OF HOLSTEINS—Alex. Whaley, Tulare, Calif.

Jerseys.

JERSEY BULLS AND BULL CALVES—Sons and grandsons of 2 and 3-lbs. cows. None better. Cheap for quality. N. H. Locke, Lockeford, Cal.

VENADERA HERD OF JERSEYS is now offering the heifer calves from register of merit cows with official yearly record. Guy H. Miller, Route 1, Modesto, Cal.

REGISTERED JERSEYS—Herd established 1868. Young bulls from best cows. Rancho Dos Rios, R. 2, Modesto.

BREEDER OF REGISTERED JERSEY CAT-tle—Duroc Swine. Young stock for sale. W. J. Hackett, Ceres, Cal.

JERSEY BULLS AND HEIFERS from Register of Merit Cows for sale. C. G. McFarland, R. 2, Tulare.

YOUNG REGISTERED JERSEY BULL Calves at reasonable prices. O. J. Ames, Oskdale.

JERSEY BULLS—Sons of Gertie's Lad and Gertie's Son's Victor. A. A. Jenkins, Tulare, Cal.

REGISTERED JERSEYS—Young bulls and bull calves. T. B. Purvine, Petaluma, Cal.

JERSEY BULLS from Register of Merit cows. C. D. Hayworth, Modesto, Cal.

Guernseys.

PACIFIC GUERNSEY HERD—Cattle selected from best Imported and Advanced Registered Stock. Now offering choice bulls. C. S. Rasmussen, Lodi, Cal.

EDGEMOOR FARM GUERNSEYS—First in the show ring and in official records. Few animals of either sex for sale. Edgemoor Farm, Santee, Cal.

BELLA VISTA GUERNSEYS—Males from A. R. dams, \$100 up. J. W. Henderson, 1st National, Berkeley.

Ayrshires.

AYRSHIRES—Registered; all ages. E. B. McFarland, 412 Claus Spreckels Bldg., San Francisco.

BEEF CATTLE.

1500 HEAD HIGH GRADE HEREFORD cows. Some calves by their side. 300 head fine yearling steers. 200 mixed weaned calves. Sixty head exceptionally well-bred grade Hereford bulls. Ten head of very choice registered Hereford bulls ready for service. G. B. Patton, Porterville.

\$60,000. Hay and beet pulp are being used in the fattening process.

The 1916 lamb crop of Nevada, brought the highest prices for lambs that has ever been known in that State. According to H. G. Humphrey of the Union Land and Cattle Company the lambs brought an average of \$5 each. About 600,000 lambs represented the crop in Nevada, making in round numbers a total of \$3,000,000 that was paid to growers for lambs alone.

MISCELLANEOUS.

"Systems of Accounts for Livestock Shipping Associations" is the title of Bulletin No. 403 of the United States Department of Agriculture.

The Imperial County Fair last week was a good success. Many creditable exhibits of livestock raised in the valley were on hand and attracted favorable comment.

The development plans of the Stanislaus Dairy Farms Company on the old Gray Bros.' ranch, between Oakdale and Knights Ferry, are well under way, and the first shipment of registered stock for the proposed big dairy will arrive from New York some time in February.

SHORTHORNS—Herd headed by grandson Whitehall Sultan. Calves sired by \$10,000 Prince Imperial for sale. One or a carload for sale. Get our prices before buying. Butte City Ranch, Box P, Butte City, Glenn Co., Cal.

SCOTCH AND SCOTCH-TOPPED SHORTHORNS—We have the largest herd of straight Scotch cows in California. Foundation stock of both sexes for sale; also a choice lot of range bulls. Barco Ranch, Hollister, Cal.

SIXTEEN HEAD of very choice Shorthorn heifers for sale. Roan and red in color. Aged from 18 to 22 months and bred to high-grade bull. Will take \$60 per head for cash deal. J. M. Maxwell, Dixon, Cal.

REGISTERED AND UNREGISTERED Shorthorn Bulls and Percheron Horses for sale. Paicines Ranch Co., 320 Sharon Bldg., San Francisco.

REGISTERED YEARLING SHORTHORN Bulls—Heavy-boned, thick-meated Scotch and Scotch-topped breeding. Ormondale Co., Route 1, Redwood City, Cal.

FAIR OAKS RANCH, Willits, Cal.—Young registered Shorthorn bulls for sale. Sired by Landseer 379318, grandson of Imported villager 295884.

BREEDERS OF REGISTERED SHORTHORNS—Milk strain. Choice young stock for sale. John Lynch Ranch, Box 321, Petaluma, Cal.

INNISFAIR DAIRY SHORTHORNS—Registered young bulls for sale. Alexander & Kellogg, Suisun, Cal.

HOPLAND STOCK FARM—Registered Shorthorns. Prices on application. Hopland, Cal.

REGISTERED HEREFORDS—H. H. Gable, Diamond G Ranch, Esparto, Cal.

SIMON NEWMAN CO., Breeders of Registered Herefords, Newman, Cal.

GEORGE WATTERSON—Breeder registered Herefords. Bishop, Cal.

SHORTHORNS—Carruthers Farms, Mayfield, Cal.

SHEEP AND GOATS.

F. A. MECHAM ESTATE, Petaluma, Cal.—Breeders and Importers of Shropshire, Rambouillets and American Merinos, both sexes. Also Red Polled cattle. Take electric car at Petaluma or Santa Rosa for Live Oak Ranch.

SHROPSHIRE—Ewes and Ewe lambs for sale. International winner heads flock. Butte City Ranch, Box P, Butte City, Cal.

KAUFKE BROS., WOODLAND, CAL.—Breeders and Importers of Hampshire sheep.

WANTED—Small carload of goats for cleaning brush. H. M. Barmgrover, Santa Clara.

BISHOP BROS., SAN RAMON, CAL.—Breeders and Importers Shropshires.

CHAS. KIMBLE—Breeder and Importer of Rambouillets. Hanford, Cal.

HORSES AND MULES.

REGISTERED SHIRES—Black Hawk Stock Farm, Importers and Breeders, Easton & Ward, Proprietors, Burlingame, Cal.

REGISTERED IMPORTED PERCHERON Stallion for sale cheap. Hewitt & Hewitt, Dixon, Cal.

MISCELLANEOUS.

SAN FRANCISCO LIVESTOCK EXPORT CO., Eugene R. Croley, Manager, solicits foreign orders for purebred registered and merit breeding animals and fowls. California has great diversity of climatic and other conditions that enable us to select animals that have been raised under conditions similar to those of the location for which they are intended. We should be informed regarding these conditions and be allowed ample time to make selections. Nearly all disappointments in buying afar are the result of insufficient information as to conditions or to lack of time for proper selection. Our plan and terms for "raising animals to order" to fit into peculiar foreign conditions is worth investigating. References: Dun or Bradstreets, or San Francisco banks. Office, 319 Underwood Building, 525 Market St., San Francisco.

CROLEY'S BALANCED DAIRY FEED—the cheap milk producer; and Croley's Calf Meal—the best California calf raiser. Geo. H. Croley Co., Inc., 631-637 Brannan St., San Francisco.

D. O. LIVELY, 216 Hobart Building, San Francisco, buys and sells livestock—any kind—any quantity.

New World's Record Cow.

Winnie Korndyke Cornucopia De Kol, owned by the J. S. Gibson Company of Williams, California, has just completed a yearly record of 31034.2 milk and 1200.99 of butter. This gives her second place in milk production; and she is the only cow to give over 31,000 pounds milk and produce 1200 pounds of butter.

We purchased her in October of 1915 at the Morris-McAlister sale. She was in very poor condition and we were unable to get her dry before calving.

Winnie freshened Dec. 22, 1915, at the age of 8 yrs. 8 mos. She started her year on Christmas day with 60 pounds and reached her high day on Feb. 12 when she gave 119.7 pounds. She went along nicely until the hot weather of June lowered her 12 pounds per day. During the summer months she was quite uniform in her production. We tried to use a light blanket to keep off the flies, but she was opposed to it and we had to let her fight the flies as best she could.

In the early part of November the

She was milked four times a day by our herdsman, John Self, and too much credit cannot be given him for the painstaking manner in which he cared for her every want.

She was sired by Aaggie Cornucopia Johanna Lad, who has 102 A. R. O. daughters and has the distinction of being the premier sire of milk-producing cows. He is the sire of three 700-pound cows. His son Aaggie Cornucopia Johanna Lad Jr. also has three 700-pound cows and is the sire of the present world's record milk cow, Lutske Vale Cornucopia, with 31239.5 of milk and 1000 pounds butter.

Winnie's dam is a 21-pound daughter of Korndyke Queen De Kol's Prince who has 87 A. R. O. daughters including one 35-lb. and three others above 30-lb. Korndyke Queen De Kol's Prince is also the sire of our present herd sire, Prince Alcartra Korndyke.

Winnie was bred July 6, 1916, to Prince Alcartra Korndyke and at the completion of her year had been carrying a calf over five and one-half



WINNIE KORNDYKE CORNUCOPIA DE KOL, California's Latest Contributor to Long-Distant Record-making History. Owned and Tested by J. S. Gibson Co., Williams.

heavy frosts killed all the green alfalfa and she fell from 70 down to 55 pounds in about ten days. Try as we would we could not find a substitute for the green alfalfa and as a result she gradually went down.

Though she calved in poor condition, during the test she gained over 250 pounds and now weighs over 1675 pounds. Had she been in good condition and calved a couple of months sooner, we feel that she would have made better than 32,000 for the year.

Feed.—She was fed a ration composed of oil meal, soy bean meal, cotton seed meal, ground corn, rolled oats, ground barley, wheat bran, beets, carrots, dried beet pulp, corn silage and all the green alfalfa and alfalfa hay that she would eat. She was a wonderful feeder; would take anything you would offer and never refused a meal during the whole year.

WATERPROOFED CANVAS.

To the Editor: I have a buggy-top made of canvas. To make it waterproof, I intend to oil it. Can I give the canvas a glossy appearance?—E. H., Amsterdam.

[Answered by W. A. Plummer Co.]

We suggest that the top in question be waterproofed with boiled linseed oil properly mixed with lamp

months, thus making the record all the more remarkable and equaled by no other cow.

Her records are as follows:

Days	Milk	Fat
Dec. 7	498.7	14.811
Jan. 31	3113.5	92.471
Feb. 29	3152.4	91.420
Mar. 31	3128.2	95.097
Apr. 30	2898.4	87.822
May 31	2972.6	81.449
June 30	2497.5	71.928
July 31	2573.3	81.831
Aug. 31	2488.9	77.405
Sept. 30	2314.8	74.764
Oct. 31	2338.2	75.524
Nov. 30	1939.1	72.910
Dec. 23	1118.6	43.353

365 31034.2 960.789
or 1200.99 of 80 per cent butter.

This butter record is highest on the coast according to Mr. Gibson; and both the milk and butter records are highest in the world for a cow of her age. Her 7- and 30-day milk records begun 40 days after calving are State records, as also for seven days 274 days after calving; also her 22.58 pounds of 80 per cent butter in 7 days 274 days after calving.

black. To obtain a gloss mix with a small quantity of good varnish.

Visalia wants a stock show. Officers of the Tulare County Stock and Swine Growers' Association will appear before the Supervisors at their meeting January 5 with a proposal that the county purchase a tract of land near the city limits suitable in size and location for holding stock shows.

Purebred Foundation for Market Hogs.

[Written for Pacific Rural Press.]

One of the old standing faults that many farmers find with the purebred hog is that his initial cost is too much for the average person.

An experience that clearly disproves this theory is shown on the Riverina Farm in Stanislaus county where three registered gilts and a registered Yorkshire boar were purchased three years ago for foundation purposes and where those four hogs have now multiplied into over 500 head, notwithstanding heavy shipments for both breeding and pork-making purposes during the past year.

The practice on this ranch is to keep only those animals of superior merit for sale as breeding stock, fattening the balance for the butcher, and in this way reducing to the minimum the percentage of poor breeding animals and increasing to the maximum the profits of the market herd.

There are about 400 acres in the ranch, but only 10 acres are given over to the hog lots exclusively, this acreage being divided into eight separate fields which facilitates irrigation in the summer and allows segregation of the various sized and aged animals at all times.

Pasturing is the rule, but in the winter months when the alfalfa is dormant, alfalfa hay is fed in racks, located in the various fields. In both instances self-feeders are used also, these being supplied with rolled barley, tankage, sulphur, charcoal, sulphur, and wood ashes.

To hogs that are being fattened, this ration is supplemented with a slop feed composed of middlings, molasses, and water. To pigs after weaning up to three months of age, a slop made in the proportions of two-thirds barrel of skim milk, one-third barrel water, one gallon molasses and six gallons of middlings is fed, with access to self-feeders as well.

Brood sows are fed differently at different times, care being taken before farrowing that they have a sufficient quantity of protein feeds. This is supplied by a ration of tankage, rolled barley and alfalfa. After farrowing the sows are fed the skim milk, molasses and middling slop together with rolled barley for three weeks, when they are gradually let down to the alfalfa pasture-tankage-barley ration.

During the time that the sows are suckling their pigs the pigs are also provided a slop feed in an adjoining pen, a creep separating the two pens so that the pigs can drink in a separate trough from the one used by the sow. By this method the pigs wean themselves at about eight weeks old.

Two styles of farrowing houses are being used, one for winter and one for summer, both being suitable for fattening purposes. One is a building 90 feet long, enclosed on all sides and provided with good ventilation through the roof. This is used both for farrowing and fattening purposes during the colder months, the partitions separating the 15 pens on each side of the building being movable, thereby enabling one to make the size of the pens correspond to the needs.

The summer farrowing and fattening house is built on the same plan except that it is open on both sides, allowing more air than the previously described one.

The enclosed house is the one most generally used for farrowing purposes as it is the aim every year to have the litters come between March 15 and April 1 and again between September 15 and October 1. This practice not only reduces the labor cost in caring for sows and pigs but makes for more uniformity in size of marketable hogs, a consideration which is of importance to all growers of market hogs. Even with this care in farrowing dates Mr. Johnson, who has charge of the ranch, finds it necessary to keep segregating the pigs into different sizes, in order that the larger ones may not crowd out the smaller ones.

With this care and feed the average litter raised from the 57 brood sows on the place has been between nine and ten. In part at least, Mr. Johnson places the credit of this high average on the motherly qualities of the Yorkshire sows, it being his contention that they are not only more prolific but better mothers also than other breeds of swine.

The average gain per day secured by this method of handling and feeding is about a pound a day from the time they are born till marketed, several carloads having been sold the past fall which weighed 175 to 225 pounds when they were eight months old.

Raising Hogs on Garbage.

[Written for Pacific Rural Press.]

With the exception of alfalfa hay, fed in racks in the corrals, and a little bran slop to the brood sows while suckling pigs, the 500 hogs of the Napa State Hospital are grown entirely on the garbage from the tables of the 2400 patients who are kept at that institution.

This garbage is naturally composed of various kinds of foodstuffs, but has good fattening properties as is evidenced by the fact that nine- and ten-month-old grade Berkshires dress on the average 200 to 210 pounds, all of them being butchered on the place for consumption by the patients. It is interesting to note in this respect that the hog lots sup-

ply all of the fresh pork needed in the kitchen; and just recently a smoke house has been constructed which permits the curing of hams and bacon also.

In the past, hay was fed in open racks in the corrals, but often the rains interfered with this method of feeding. To overcome this condition a rack with a long overhanging roof has been built, with hinged doors on the ends for filling. As completed, protection from the weather is afforded both hogs and feed; and as a result a good-sized bunch of hogs may be seen around this hay self-feeder at all times of the day.

THE RAREST OF HIS RACE

Uniformity

Production

Color

Manteca, "King of the Black and Whites, 187787, is one of the most grandly bred bulls of the breed. His sire is King of the Black and Whites, a son of Marion Walker Pietertje, a 31.63 pound cow and grandson of both Aabby Hartog Clothilde, and Mary Walker Pietertje, each with a record of over 31 pounds. His first 7 dams are over 30 pound cows, 4 of which have each produced 30-pound cows, that in turn have produced 30-pound cows each with a 30-day record of 125 pounds or more.

The dam of our young bull is Belle Segis Colantha, daughter of Belle Segis, a 31.60-pound cow, the 2d best daughter of King Segis. The dam made a record as a 2-year-old, of 17.84 pounds with first calf, and she is just good enough so that I will refund \$400 of the purchase price of the bull if she does not make 30 pounds or over next spring.

The first 13 dams in his pedigree average over 30 pounds. Where can you find better breeding than this?

This bull is a fine individual, more white than black.

PRICE \$1250.

Write for prices and pedigrees to

HENDERSON CO.

5th AND J,

SACRAMENTO

BASSETT'S POLAND CHINAS



GRAND CHAMPION BOW.
P. F. I. E. 1915; Sacramento 1916.

For many years, at widely separated show rings, under many different judges of varying type ideals, my Poland Chinas have been consistent prize-winners. My herd is large, and I cull closely. The animals sent out as breeders are the very tops of a large number. I KNOW that my kind of Poland China is a profitable farmer's hog, for I send carloads of them to the packer every year—uniform in size, high in quality, quickly and economically matured and finished. Young Stock, \$30 Up. M. BASSETT, Sr., I. Hanford, Cal.

A Guernsey Grade Cow

year 13.388 lbs. of milk and 755 lbs of butter fat, EQUIVALENT TO 878 lbs. of BUTTER.
USE A GUERNSEY BULL on your grade herd and you can produce such cows

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THE AMERICAN GUERNSEY CATTLE CLUB
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SHORTHORNS

35 Choice Service Bulls
15 SCOTCH AND SCOTCH-TOPPED COWS AND HEIFERS.

All registered and tuberculin tested.

A Few Choice Berkshires of Either Sex for Sale.

H. L. & E. H. MURPHY, Perkins, Sacramento Co., Calif.

YOU CAN'T CUT OUT A
Bog Spavin or Thoroughpin
but you can clean them off promptly with

ABSORBINE
TRADE MARK REG. U.S. PAT. OFF.
and you work the horse same time. Does not blister or remove the hair. \$2.00 per bottle, delivered. Will tell you more if you write. Book 4 M free. ABSORBINE, JR., the antiseptic liniment for mankind, reduces Varicose Veins, Ruptured Muscles or Ligaments, Enlarged Glands, Wens, Cysts. Allays pain quickly. Price \$1 and \$2 a bottle at druggists or delivered. Made in the U. S. A. by W. F. YOUNG, P.D.F., 86 Temple St., Springfield, Mass.

Stanislaus county plans a milk inspection district.

BLACK LEG LOSSES SURELY PREVENTED
by CUTTER'S BLACKLEG PILLS
Low-priced, fresh, reliable; preferred by western stockmen, because they protect where other vaccines fail.
Write for booklet and testimonials.
10-dose pkg. Blackleg Pills, \$1.00
50-dose pkg. Blackleg Pills, \$4.00
Use any injector, but Cutter's simplest and strongest. The superiority of Cutter products is due to over 15 years of specializing in VACCINES AND SERUMS ONLY. INSIST ON CUTTER'S. If unobtainable, order direct.
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Raising Poultry for Profit

HOW TO CHOOSE EGGS FOR HATCHING.

[Written for Pacific Rural Press by Susan Swaysgood, Pomona.]

The standard of eggs has now been raised all over the State to conform with the San Francisco market standard. So no matter in what locality the farmer or poultryman lives, if he wants to get his eggs in as first-grade eggs, and, of course, that means first price, they must weigh on an average 22 to 24 ounces to the dozen. These No. 1 eggs must also be of uniform size, shape, color, and shell texture. This is their ruling. Some people seem to think that because they may happen to have found a market where they can command No. 1 prices on colored eggs, that I am romancing. I only tell you what is true of general conditions; if you happen to find a good place to dispose of your product at a little better figure, all the better, the credit is due to you for finding the market; but don't forget that if everybody who is engaged in raising brown eggs were to ship to your select market, it would be flooded and eggs would soon drop. I also used to find a good market for my brown eggs and generously told my friends and that was what happened to me. So far as people wanting brown eggs, there are many who prefer them; I do myself. But we produce things for the majority, and the majority decides what shall be called first-class eggs.

Knowing what the market demands are, it is up to us to decide what we want to produce and then go about it the best way we know. In selecting eggs for hatching, the first thing is to choose eggs on the principle that "like will beget like." This is not always true, because nature does funny things sometimes, but it is a recognized fact that if you set rough, ill-shapen eggs that become pullets, they will lay eggs of similar shape.

So then, for producing chicks that will average No. 1 eggs, we should select eggs of uniform shape, strictly white, weighing not less than 22 ounces to the dozen, and of good shell texture. The shell texture is important because if the shell is thin and porous it is always in danger of being broken during the period of incubation, and the least varying in the temperature affects the thin-shelled egg, so that its chances of hatching are not so good as the others. I used to think that they would not hatch at all, but last winter, in discarding a great number of eggs from a batch we were about to set, the owner suggested that we try them out in a smaller incubator, which we did and found the theory was not correct for they hatched out almost as good as the other eggs, though we naturally had to be careful in handling them. But thin and thick shelled eggs ought not to be incubated together.

Nearly all varieties that lay a brown egg will come up to the weight. They are usually thicker through and not quite so long as the white eggs, and for that reason should never be set in incubators

with white eggs. There is another reason too, why they should not be mixed, that is the embryo does not develop at the same rate as the white eggs, therefore the hatch is always delayed for the brown eggs. This is one of the great reasons why people report poor luck with brown eggs, and tell you that their Leghorn eggs hatched fine.

To get good results set eggs of one color only in each incubator and treat them alike; then the hatch will come off in about the same time, provided eggs are not too far apart in age. If eggs two weeks old are set with eggs laid the same day the incubator is set, the newly laid eggs will always hatch several hours ahead of the eggs laid two weeks before. But if eggs are about same age, same size, weight, and color the hatch should come off in 24 hours.

Never Let Eggs Chill.—Now in saving eggs for hatching, care must be taken that they are never chilled. The temperature should not go below 50 nor higher than 70. It is always safer to cover them with a cloth or several layers of paper as a protection against both heat and cold. There is not much in turning. I have turned eggs and left them unturned and never noticed much difference, so I conclude it is just a matter of opinion, not fact, that eggs must be turned.

Tobacco for Lice.—One of our subscribers asks for definite instructions regarding the spraying of chickens with tobacco water for lice. I never heard of such a thing being done. In fact, spraying chickens with anything would result in failure, because the feathers would get the liquid and the lice would burrow down into the skin and evade it. The only way is to dip them in the liquid, holding them by the wattles with one hand and by the shanks with the other and push them through the stuff against the feathers. To make any success you must wet down to the skin and this is a poor time for such experiments—too cold. Choose a good hot day next summer and use Kreso dip No. 1. I don't know anything about tobacco personally, except that we used it years ago for a wash to kill lice on horses and cattle in spring. And I know we used five pounds of smoking tobacco to a wash boiler of water and boiled it in the water for a few minutes, then cooled it off and washed the cattle and horses. It killed the lice.

QUESTION ANSWERED.

Chickens Caught Cold.—My chickens developed colds, running at nose and eyes and some got pneumonia. Those with running noses I treated with patent medicine in nostrils and throat, bluestone in the drinking water, coal oil in the feed, bran or soaked barley, and they got well. But some of the fat ones, pullets that showed no signs of being sick, died sitting down; some fell lame in one leg and could not walk—never got any better. I also lost several turkeys the same way. I feed barley and bran, pumpkins and green barley, and they have range.—Mrs. S. B. E.

You have dosed your chickens and turkeys too much, and not given them sufficient nourishment.

Send For A Sample Of Calmade Graduated Poultry Fence

10 inches graduated in mesh from 1/2 inch to 1 1/2 inches then 20 inches of 2 1/4 inch mesh, topped by 4 1/2 inch mesh for the height of the fence.

The Fence Without a Sky Line

It is the most economical as well as the most practical of all poultry fences. It costs no more to buy than the old style poultry netting and costs much less to put up.

It is the only fence made with a bottom mesh smaller than one inch. It will turn the smallest chickens. Because of the straight line, continuous weave of "CALMADE GRADUATED" Fence, baby chicks won't hang in it, large fowls can't climb it.

"CALMADE GRADUATED" Fence will not slip at the joints nor unravel when cut. Uniform in weave and width. It unrolls flat as a board—it is easily put up and stretches without bulge, kink or bend on posts 16 feet apart. Learn all about these advantages and let your next fence be a "CALMADE GRADUATED." Write at once for free samples of wire used, free illustrated folder and name of nearest dealer.

E. H. EDWARDS COMPANY

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HIGHEST AWARD

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Model Incubators \$10 to \$48 Built to last and to hatch every fertile egg. Safest. Cheapest and easiest to operate. Fume and fire-proof. Gas-tight. Model Coal Burning Hover, \$15

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Big Free Book. "First Aid to Poultry Keepers" shows how to save chicks and money.

Advice from experts. Also shows complete MODEL line. Write now.

MODEL INCUBATOR CO.
65 Henry St.,
Buffalo, N. Y.
39 Barclay St.,
New York, N. Y.

For chickens that get colds, the coal oil as a physic or as a cleanser for the nostrils is good, but to supplement that with bluestone and other crude remedies without a little extra good feed, simply means death to the chickens. Always feed plenty of good nourishing feed in places where there is any danger of pneumonia. Besides this, aim to keep them warm, and clean out every vestige of dirt. That is what you need to do now because this trouble is catching. Then give them all a little iron tonic and better feed. Barley and bran, without a little meat or wheat, is very thin rations; the fact is, your chickens would not have been sick if you had fed and housed them right. Feed them dry wheat at night and get them a little beef scrap or good commercial mash. This will build them up and that is the best medicine. Ten drops tincture of iron to a quart of water for a week will also help.

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Size	Special Prices on Plain Tread	Gray Tubes	Red Tubes
28x3	\$ 6.55	\$1.75	\$1.95
30x3	6.95	1.85	2.10
30x3 1/2	8.95	2.10	2.35
31x3 1/2	9.45	2.15	2.40
32x3 1/2	9.95	2.25	2.45
34x3 1/2	10.95	2.30	2.55
36x3 1/2	12.05	2.40	2.75
30x4	13.20	2.80	3.10
31x4	13.85	2.85	3.20
32x4	14.05	2.95	3.30
33x4	14.70	3.10	3.40
34x4	14.95	3.15	3.50
35x4	15.65	3.20	3.60
36x4	15.85	3.30	3.70
34x4 1/2	20.25	3.85	4.30
35x4 1/2	20.85	3.95	4.35
36x4 1/2	21.25	4.10	4.50
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Brookdale Nursery, Los Gatos, Cal.

No Gizzard.—One of our subscribers says a sage hen has no gizzard. All right, anything for a quiet life and an easy one. I admit never handling a sage hen.

Poultry Breeders' Directory.

OUR BABY CHICKS are hatching every week now. Have you ordered yours? You know what you want and we think we can fill the bill—high quality, reasonable price, and prompt service. Won't you write us for prices and circulars describing our R. I. Reds, Barred Rocks, Black Minorcas, White and Brown Leghorns. We want your business and future good will—it takes a fair play deal to get that. Our hatchery is up to date and we reckon to know our business. Let's get acquainted. A postcard will introduce us. Roofden Poultry Ranch & Hatchery, Campbell.

S. C. WHITE LEGHORNS—McFarland strain. We have exceptionally fine stock this year to breed from—two and three-year-old hens, carefully selected—Hoganized. Our male birds are the very best. We are now booking orders for day-old chicks; can supply them by the hundred or thousand. All eggs from our own yards. First-class chicks guaranteed. Fraser Poultry Ranch, P. O. Box 40, Palo Alto, Cal.

BARRED PLYMOUTH ROCKS—COCKERELS—Cockerels—Cockerels—Yes, we have them; also Hens and Pullets—all bred from our Champion Winners at California's leading shows. Also hatching eggs. If it's Barred Rocks you want, get in touch with me right away. Have bred them exclusively for nineteen years. Send for Catalog. Chas. E. Vedden, Box 399, Los Gatos, Calif.

"FINEST HATCHERY IN THE WORLD"—Baby Chicks, White Leghorns, and Rhode Island Reds, settings, 100's 1000's, hatched right in our \$60,000.00 brick and concrete hatchery from our quality heavy layers. Reasonable prices. Stock, Hatching Eggs. Peblee Poultry Farm and Hatchery, Sunnyvale, California.

WHITE PLYMOUTH ROCK, White Leghorn Incubator Chicks. Breeding stock. Eggs high class. Scientifically bred. Awarded all first prizes. California State Fair 1916. Make your arrangements for 1917 delivery of chicks. Mahajo Farm, P. O. Box 597, Sacramento, Cal.

WANTED—A number of hot water incubators, Jubilee preferred, 200 egg capacity or over. 220-egg type, Hoganized, S. C. White Orpingtons and Sicilian Butchercocks, cockerels, hatching eggs and chicks. All information gladly furnished. M. S. Woodhams, San Mateo, Cal.

BABY CHICKS—From large, healthy, vigorous, heavy laying thoroughbred Single-Comb White Leghorns. \$10 per 100 \$2 per 100 when order is booked, and balance 5 days before delivery. I pay the express to your nearest express office. H. A. Schlotthauer, Exeter, Cal.

BABY CHICKS—Get some of our good strong youngsters but order as far ahead as possible. Hatches every week. R. I. Reds, Barred Rocks, Black Minorcas, White and Brown Leghorns. Write for circular. Campbell Poultry Ranch, Campbell, Cal.

McARLANE STRAIN White Leghorn Eggs. \$1.50 per 15, \$2.50 per 30, \$5.00 per 100, \$50 per 1000; chicks, 12c each, until March 1st, then 10c. Big plant, lowest prices, best stock. Catalogue free. Newton Poultry farm, Dept. 1, Los Gatos, Cal.

WHITE LEGHORN AND BROWN LEGHORN day-old chicks from healthy, vigorous breeders. "Chicks well hatched are half-raised." Will be pleased to send you our circular. San Jose Hatchery, 373 Meridian Road San Jose, Cal.

THE SANTA CLARA VALLEY HATCHERY solicits your orders for Fall and Spring delivery in 8 breeds of baby chicks. Order early and get the best. Jos. A. Bihn, Lincoln Ave., San Jose, Cal.

HATCHING EGGS from our "Bred-to-Lay" S. C. White Leghorns. Season opens Dec. 1st. The early hatch lays the early winter egg. Booking now. B. H. Dickinson, Dept. IV, Los Gatos, Cal.

COCKERELS—Some dandy birds in splendid shape. Barred Rocks, R. I. Reds, Black Minorcas. Very reasonable prices. Campbell Poultry Ranch, Campbell, Cal.

RHODE ISLAND REDS—Cocks, Cockerels, Pullets, Hatching Eggs. Blue Ribbon winners at last Oakland Show. Wm. Larm, 3915 39th Ave. Fruitvale, Cal.

INCUBATORS—For Essex Model Incubators at factory prices, write Geo. H. Croley Co., Inc., Poultry Supplies, 631-637 Brannan St., San Francisco.

BABY CHICKS (White Leghorns)—shipped on approval before remitting. No weak ones charged for. Schellville Hatchery, B. F. D., Sonoma, Cal.

DAY-OLD CHICKS—These chicks are hatched from our own flock of 8,000 Utility White Leghorn Hens. George Bros., Petaluma, Cal.

BARRED ROCKS—Grand lot of high-class breeding males and pullets for sale. Satisfaction guaranteed. G. E. Tobin, St. Helena, Cal.

WHITE WYANDOTTES—Blue-ribbon winners. Eggs \$2 to \$5. Chicks, pullets, cockerels. R. W. Stawetaki, Route 2, San Jose, Cal.

HATCHED CHICKS from Barred Rocks, R. I. Reds, White Leghorns. Good stock. Send for circular. G. L. Hawley, Madera, Cal.

EASTMAN'S BRED TO LAY Barred Plymouth Rocks, Chicks, Eggs, Cockerels. Fairmead Poultry Farm, Fairmead, Cal.

CHICKENS, DUCKS, GEESSE, GUINEAS, Pea Fowl, Pigeons. Wm. A. French, 545 W. Park St., Stockton, Cal.

WHITE ORPINGTONS EXCLUSIVELY—Limited number of pullets. Reasonable prices. L. J. Burke, Lemore, Cal.

TURKEYS, DUCKS AND GEESSE.

BOURBON RED TURKEYS and Eggs for hatching. My birds won all the honors in the Alameda County Poultry Exhibition in Oakland, 1914, and just as fine this year. A. H. Balmer, Alhambra Valley, Martinez, Cal.

THOROUGHbred WHITE HOLLAND TURKEYS. Toms \$5; Hens \$2.50. Old White Holland Toms, \$7.50. Pearl Guinea, \$1 each. E. A. McKinley, R. D. Ukiah, Cal.

HART'S BRONZE TURKEYS AND EGGS—Large reduction in price of stock. Order now for fall delivery. Free Circulars. Albert M. Frost, Clements, Cal.

WHITE HOLLANDS EXCLUSIVELY—Only high-class birds from prize-winning stock for sale. Rockwood Farm, 201, Route 6, Santa Rosa, Cal.

INCUBATOR OPERATION.

[From U. C. Bulletin by J. E. Dougherty.]

Before the hatching season, overhaul the incubators and get extra thermometers and wicks. Place incubators in a cellar for uniform temperature, and ventilate without drafts by having muslin over the windows.

Level the incubator with spirit level so that one end or side will not be warmer than the other.

Disinfect the incubator before every hatch by scrubbing, and drying movable parts in the sun. Before putting eggs in, spray the inside thoroughly with a 2 per cent solution of cresol or similar preparation. Vapors remaining will help disinfect the eggs.

Diseases, among which is coccidiosis, are transmitted to chicks from infected shells. The eggs should be disinfected by dipping them "fairly rapidly" in 95 per cent pure alcohol just before putting into incubator.

Use medium flame at first so that at the end of the hatch it may be turned down when the chicks are furnishing their own heat.

Clean the lamp after turning eggs. If cleaned before, oil coats the eggs and injures the embryos.

To be sure that the thermometer is correct, test it in water with a clinical thermometer by adding hot water slowly until the clinical thermometer registers 103 degrees. Then you can figure on the error, if any, in your incubator thermometer.

Temperature should be 102 degrees with the bulb-center level with the tops of the eggs. The disk which regulates the heat should be 1-16 to 1/4 inch above the opening in the top of the heater.

During growth of the embryo, it must absorb oxygen through the shell into the network of bloodvessels just inside the shell for the same reasons that human beings must have oxygen in their lungs. Like human beings, the embryos throw off carbon dioxide, and this must be removed. Insufficient ventilation will rob the chicks of vitality even though it may not prevent hatching. Panting of chicks after hatching is due not to heat but to insufficient ventilation.

The eggs dry down naturally during embryonic growth. To determine how much drying is natural, set some eggs under a hen at the same time the incubator is set, and compare the increase of the air cell.

Air provided for ventilation will cause excessive drying of the egg unless provided with enough moisture. Sixty per cent humidity is generally considered adequate.

If too dry, the egg membrane will whiten and become so tough that the chick may die, unable to get out of the shell even after it is pipped. After eggs begin to hatch, a light film of moisture or a few beads of water should appear along the lower inside edge of the glass of the incubator door. Moisture over the glass indicates too much moisture. Keeping the floor of the cellar well

CHOICE MAMMOTH BRONZE GOBBLETS for sale. We won first at California State Fair and Oakland Show. N. E. Mulick, Willows, Cal.

MAMMOTH BRONZE TURKEYS and Eggs. Booking egg orders now for early Spring delivery. M. M. Reiman, Planada, Cal.

BOURBON RED TURKEYS—Hens and Gobbles for sale. Edward Mulick, Willows, Cal. Inside edge of the glass of the in-

soaked is a fine way to keep the air in the incubators moist enough if no better way is provided.

Turning eggs is simply to prevent the embryos from sticking to the shells. Simple rolling is enough.

More people cool eggs too little than too much. But the object is to cool the eggs, not the incubator, so keep the incubator shut while eggs are cooling.

Do not let the tray project over the edge of the incubator, because projecting eggs cool more than the others.

Begin cooling on the seventh day. Gradually lengthen the cooling period daily because it takes longer when the embryos are older. They are cool enough when the small end of the egg placed against the eye feels barely warm.

Test the eggs for fertility while cooling on the seventh and fourteenth nights. Infertile eggs on the seventh day are clear with a solid dark circle about half their diameter and are good for cooking.

Fertile eggs on the seventh day have a distinct movable dark spot with dark blood vessels radiating in all directions, but the egg itself is reasonably clear. On the fourteenth day fertile eggs are opaque and nearly black. Dead germs on the seventh day contain either blood clots or blood rings and are cloudy. On the fourteenth day they either contain blood rings or streaks, or are translucent and cloudy.

After the last turning, do not disturb until the hatch is over. When all chicks have dried off open the ventilators wide, remove the egg tray and shells without allowing a draft, and wedge open the door with a match stick to harden the chicks, but keep the temperature up to 100 degrees. Darken the chamber with a cloth to keep the chicks from picking the droppings and each other's toes. After 24 hours, remove them to a brooder in a flannel-lined and hooded basket, not allowing drafts to strike them.

The Health Department of Los Angeles advises as to judging of turkeys: "The age of a turkey may be determined as follows, says a bulletin just issued: On young turkeys the scales on the feet and on the lower joint of the leg are smooth and glistening, having a bright color which harmonizes with the general color of its plumage. The posterior extremity of the breast bone yields under pressure, being easily bent from one side to the other. Old turkeys have rough feet and legs."

The leading poultry raisers around Los Angeles have formed a co-operative association with a capital stock of \$100,000.

Classified Advertisements

MISCELLANEOUS.

EVERY SIZE WROUGHT IRON WATER Pipe and screw casing water pipe, guaranteed as good as new. Prices right. Send for catalogue. We beat no one; everybody gets a Square Deal. Weissbaum Pipe Works 160 Eleventh St., San Francisco.

ALMOST NEW well-boring churn drill. Fully equipped. Will drill 250 feet for 4% in. O. D. casing, or larger. Has 4 H. P. distillate engine. Price, \$490 cash. 305B Carmelita Apts., 391 Valencia St., San Francisco.

SECOND HAND WATER PIPE and Screw Casing. New threads and couplings dipped in hot asphaltum. All guaranteed. Send us your inquiry. Sheeter Pipe Works, 306-8 Howard St., San Francisco.

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TO REDUCE THE HIGH COST OF LIVING, send for our Wholesaler to Consumer Catalog. Smith's Cash Store, 106 Clay St., San Francisco.

"HOW TO LIVE ON LESS"—a guide to cheaper living. Wholesale catalogue free. Pacific Co-operative, A236 Commercial St., S. F.

SEEDS, PLANTS AND TREES.

ORDER NOW—Genuine Giant Crimson Winter Rhubarb. The choicest and earliest of all varieties, producing bountiful crops, when other varieties are out of market. Can grow between orchard rows with big returns. 30c each; \$1.50 per ten; \$10 per hundred. Mail orders booked now and shipped when desired. A. P. Baker, 1116 The Alameda, Berkeley, Cal.

LOOK! SEEDS! The wonderful Raisin City Climbing Musk Melon grows 6 to 12 feet high. Extra fine melons, 5 to 15 lbs. Just the thing for city people with small back yard. 12 feet square will grow enough for a family. Packet, 10c. Get yours now from originator. This ad will not appear again. H. Shumaker, Raisin City, Cal.

OLIVE TREES, Mission and Manzanillo. I have several thousand olive trees propagated for my own planting. Have more than I need and will sell surplus at low price. Write for quotations at once before they are all gone. F. E. Carson, 948 So. Figueroa St., Los Angeles.

SPECIALLY SELECTED ARIZONA ALFALFA Seed—the best there is—at wholesale prices. Shipping warehouses: Modesto, Fresno, and in Arizona. You save at least \$2.00 per hundred by buying direct. Send your address for sample and price. Bomberger Seed Co., Modesto, Cal.

CITRUS TREES—all leading varieties. Large line Lisbon, and Villa Francis, Lemon, and Washington Navel Orange Trees. First-class stock and clean. Special prices to dealers or to growers in carload lots. Randall Brothers' Nurseries, Whittier, Cal.

STRICTLY FANCY SEEDS—Alfalfa, Scarified Sweet Clover, Red Clover, Timothy, Ryegrass, etc. Fred Bulletin—Write for samples and prices. Ralph Waldo Elden, Central Point, Oregon.

OLIVES ARE OUR SPECIALTY—We offer for sale fine thrifty trees of the best strains of Mission and Manzanillo. Earliest to ripen; earliest to bear. If that is what you want, we have it. H. Detmers & Son, Exeter, Cal.

CELERY SEED FOR SALE—Dwarf Golden Heart variety. Produced from seed purchased from C. C. Morse & Co. Strictly fresh and clean. Price, per pound, \$1.50. James Mills Orchards' Corporation, Hamilton, Cal.

SWEET CLOVER—The best legume known for introducing nitrates into soil. A large-producing, non-bloating forage and hay crop. Stands alkaline conditions well. Seed 15c per lb. V. M. Shuey, Manzanar, Cal.

WALNUT TREES—Franquette, Mayette and Mammoth on Black Root; also Grafting Wood and Black Seedling Trees. Lowest prices. Mammoth Walnut Nurseries, Watsonville, Cal.

MISSION OLIVE TREES—Raised from my own bearing trees. This is the only sure way to get what one wants. W. A. Hayne, Box 461, Marysville.

FRANQUETTE WALNUT TREES—Grafted on Black Root. Vigorous stock at lowest prices. Ogden Bolton, Jr., Route 6, Santa Rosa, Cal.

ALFALFA SEED—Common 17c; smooth Peruvian, 22c; Hairy Peruvian, 30c; delivered. Wm. Stuthman, 1238 West Pico St., Los Angeles.

FOR SALE—Gold Dollar and New Oregon Strawberry plants, \$3 per M. D. B. Bannister, P. O. Box 185, Oakdale, Cal.

QUALITY TREES—Seedlings, 5c. Prunes, 10c. Walnuts, 30c. Cash Nurseries & Seed Store, Sebastopol, Cal.

WANTED.

WANTED—Young men and women to attend the Western Normal Courses—Normal and Academic. The Normal Course gives an adequate preparation for teaching, at a great saving in time and money. Academic course gives practical finish to education. Write for Bulletin "A." Western Normal, 524 E. Market St., Stockton, Cal.

ORCHARD SUPERINTENDENT SEEKS POSITION—Experienced in developing young orchards, and have made a specialty of almonds. Can assume charge of any-sized tract, being experienced in handling labor. Single. At present employed, but want to make a change. Box 420 Pacific Rural Press.

COUNTRY LANDS.

ALMOND LAND IN SACRAMENTO VALLEY—12 acres partly set to almonds—1 and 2 years old; also 2-year-old family orchard—cherries, plums, apricots, pears, peaches, prunes, figs. Fine bungalow and other improvements; three-quarters mile from one town; one and one-quarter from another, 4 from another—all live railroad towns. Not only best almond and prune land in the valley, but ideal for vegetables, corn, Irish and sweet potatoes. Irrigated with gravity system. Price \$3200. \$750 cash, balance 9 equal payments, 6 per cent interest. Deal with owner and save agent's commission. T. J. Myers, Gerber, Cal.

DAIRYMAN'S GREAT OPPORTUNITY—I own the finest improved and equipped 400-acre dairy ranch in California. Not far from San Francisco. 60 tested cows with five years' secured sale for milk at 20c per gallon. Only those either owning 100 first-class cows or with enough money to buy, with experience and first-class references, need apply. Will rent on shares. Cannot take care of it, my time being taken up with other business in San Francisco. State full particulars in first letter. Box 430, Pacific Rural Press.

\$22,000—Fully equipped 80 acres alfalfa dairy ranch near Modesto. Yearly milk contract. Income \$600 per month. Can be increased to \$1000. Everything included except dairy stock, which can be bought separately. Address Box 400, Pacific Rural Press.

FOR RENT—Dairy Ranch, near Tulare, 400 acres, with 120 acres in alfalfa; splendid opportunity for right party. Will sell herd of cows, horses and hogs, if desired. Otto Grunsky, 410 E. Market St., Stockton, Cal.

HUMBOLDT STOCK RANCHES—CATTLE—Cattle correspondence solicited. C. E. Robertson, 105 Montgomery St., San Francisco.

FOR SALE—In Fernley Valley, 80-acre dairy farm, well stocked and improved. Price, \$14,000. Address O. P. McGarr, Fernley, Nevada.

WANTED TO HEAR from owner of good ranch for sale. Send cash price and description. D. F. Bush, Minneapolis, Minn.

Mrs. Best's Letter.

My Dear Friends:

If any of you number among your friends a woman to whom the stork is about to make a visit, a stork party would be a nice compliment to her. Only close friends are asked and they are expected to bring gifts for the prospective arrival. These can range from celluloid rattles to articles of wearing apparel or dainty bedding for the crib or bassinet. Small cheesecloth comforts, tufted with yarn and bound in sateen, are useful, and eiderdown squares, bound in ribbon, are both warm and pretty to look at. A mother can hardly have too many of such articles.

While a baby is under six months a bassinet makes an ideal bed for him, for they come on stands so there be no unnecessary stooping in caring for him, and the basket can be lifted and carried from room to room without handling the child at all. For long rides in a machine, the bassinet works like a charm, for it can be placed on the floor between the seats and the baby is just as comfortable as if he were at home.

As the child grows older, the bassinet is not large enough, and for that time in his life there is a wonderful new crib, playhouse and sleeping porch combined on the market, called a cariole. This looks like a generous-size child's bed, except that it is made of fine wire netting, set into a frame. There is a spring and mattress, and the whole thing is put together with pins so that it can be taken apart and packed into a compact bundle, and covered with canvas for moving. There are wheels on this crib, so it moves readily from room to room. The weight is about twenty pounds. I had the pleasure of seeing one of these in use in a home at Christmas time, and and it seemed ideal to me. The baby slept happily in it, then when awake, sat up and played in it without any danger of falling out or of picking up undesirable things from a not too clean floor. The ease with which it could be moved made it possible to have the baby in any room the family were occupying, and at night it was carried up stairs, and the child safely tucked into it. A canvas cover comes with the cariole that covers the top and makes an ideal sleeping porch in warm weather to use on an outside porch without trouble from flies.

In this same household I saw an old commode that had a hinged box set on top for all the articles used for the baby's bath. This had been painted white, and had good rollers so it could easily be moved from place to place, and it seemed to me must do away with much unnecessary walking.

A heavy linen bag, lined with oiled silk, was ready for damp diapers, when the child was away from home.

Certainly, with a little money and ingenuity, many conveniences and comforts for both mother and baby can be acquired. Rosabella Best.

METAL HOT WATER BOTTLE.

These cold nights make a hot water bottle very useful and the new metal ones are very satisfactory. They do not spring leaks just when most needed and have cotton flannel bags to cover them.

THE HOME CIRCLE

TAMALE PIE.

Cut 1 pound of beef and 1 pound fresh pork into $\frac{3}{4}$ -inch cubes. Put in stew pan, cover with 6 cups boiling water, and let simmer until tender. Cover 12 red peppers with boiling water; cook until tender, drain, remove seeds, and force through a fine strainer. Add pulp to meat, 18 whole ripe olives, 3 cloves of garlic, and 1 small onion, cut fine. Thicken gravy with 4 tablespoons white corn meal, cook 15 minutes, season with salt, cayenne, chili powder, and Spanish pepper. Put $\frac{1}{4}$ cup each lard and butter in sauce pan, add 1 teaspoon salt, and 2 cups boiling water; stir in slowly 1 cup white corn meal and cook until thick. Cool and line two-quart round baking dish with meal mixture. Pour in meat mixture, and garnish top with thin round pats of meal mixture. Bake one hour.

FIG PUDDING.

Editor Home Circle:

I have had success with this pud-

or other lean trimmings.

There are numerous ways to compound pork sausage. Lean pork trimmings, or the same with a small amount of fat added, or combinations of beef and pork trimmings, may be used, with varied selections of spices. The meat is first run through a chopper with a one-fourth inch plate. It is then spread out and spices sprinkled over it, and thoroughly mixed. To insure a more thorough mixing it may again be run through the chopper.

Spices may be selected to suit the occasion, or the taste of the sausage maker. The spices used, and the amount for one hundred pounds of meat, are as follows: Salt $1\frac{1}{2}$ to 3 pounds; saltpeter 1 to 3 ounces; sugar 5 to 10 pounds; ground white pepper 8 to 10 ounces; sage, rubbed fine, 4 to 12 ounces; mace $\frac{1}{2}$ to 1 ounce; garlic 1 to 2 ounces; coriander 3 oz.; onions 4 to 8 oz.; black pepper 8 oz.; mustard seed 2 oz.; ginger 2 oz.; nutmeg $\frac{3}{4}$ ounces, etc.

From the above list any desired

THE HELP THAT COMES TOO LATE.

'Tis a wearisome world, this world of ours,
With its tangles small and great,
It's weeds that smother the springing flowers,
And its hapless strife with fate.
But the darkest day of its desolate days
Sees the help that comes too late.

Ah, woe for the word that is never said,
Till the ear is deaf to hear,
And woe for the lack to the fainting head
Of the ringing shout of cheer;
Ah! woe for the laggard feet that tread
In the mournful wake of the bier.

What booteth help when the heart is numb?
What booteth a broken spar
Of love, thrown out when lips are dumb,
And life's bark drifteth far—
Oh! far and fast from the alien past,
Over the moaning bar?

Age, baffling most in the gray old world,
With its tangles small and great,
Its lonesome rights and its weary days,
And its struggles forlorn with fate,
Is that bitterest grief, too deep for tears,
Of the help that comes too late.

—Margaret Sangster.

ding and offer it to the Rural Press readers: 1 large cup dried figs, 1 cup blanched almonds put through food grinder; 4 eggs, yolks and whites beaten separately; $\frac{1}{2}$ cup lard, $\frac{1}{2}$ cup butter worked into two cups of granulated sugar; 3 cups flour, 2 large teaspoons baking powder; $\frac{1}{2}$ teaspoon each of cinnamon, allspice and ginger, $\frac{3}{8}$ cup ground chocolate. Mix flour, spices, chocolate, sugar, fruit, nuts, and baking powder thoroughly; then add eggs, $\frac{1}{2}$ cup rich milk, 1 tablespoon vanilla, the juice of three oranges, and stir up quickly. Steam two hours and bake 40 minutes.—Mrs. W. J. Y., Turlock.

PORK SAUSAGE ON THE FARM.

In making sausage, only clean, fresh meat from healthy animals should be used and this meat should be thoroughly chilled after killing the animal. Meat for sausage is generally taken from the shoulders, neck, and other lean trimmings, and pork fat is taken from the neck or back. In case beef is added, it may be taken from the cheek meat, neck,

selection may be used. When beef is added it is generally used in proportions of 20 per cent beef and 80 per cent lean pork trimmings. Some prefer more beef and make the proportion 45 per cent beef to 55 per cent pork.

Pork sausage may be stored in earthen jars or crocks and covered with a layer of lard, or it may be stripped into casings made from the small intestines of the hog. Casings can generally be purchased from the butcher shops ready for use.—H. S. Eakins, of Colorado Agricultural College.

COOKING SUGGESTIONS.

For use on fish, add tomato catsup to mayonnaise dressing until a pretty pink, and then add chopped parsley.

Tomato juice is fine for removing stains from the hands, as well as fruit and wine stains from linen.

A wire egg-beater is better for the whites of eggs than the Dover.

If the cream is too thin to whip, add the unbeaten white of an egg and whip cream and egg together.

Floral Department.

By Geo. N. Tyler.

Continuing on Leaf Mould.—It is good for young and soft-wooded plants generally, such as heliotropes, perlargoniums, begonias, coleus, etc. It is exceedingly useful, both by preventing the consolidation of the soil; and as a manure, as it is a natural plant food. The accumulation of light earth found on the surface in woods, where the leaves fall and decay annually, especially under oak trees, is leaf mould of the finest quality.

Composts are mixtures of the foregoing ingredients in varying proportions and in combinations with manures, if necessary, so as to suit particular plants or classes of plants. In making up composts for pot plants the fibrous portion should not be removed by sifting, except for small-sized pots, but the turfy portions should be broken up by hand and distributed in smaller or larger lumps throughout the mass. When sifting is done the fibrous matter should be rubbed through the meshes of the sieve along with the earthy particles. Before being used the turfy ingredients of composts should lie together in a heap long enough for the roots to die, but not to decompose.

Manures.—These are of two classes—organic and inorganic; the former being of vegetable and the latter of chemical origin. Horse dung is generally the principal ingredient in hot beds, and in its partially decomposed state it is well adapted for garden use. It is most beneficial on cold, stiff soils. It should not be allowed to lie too long when fresh, as it will then heat violently, and the ammonia is thus driven off. To avoid this it should be turned over two or three times and well moistened. Cow dung is less fertilizing than horse dung, but being slower in action is more durable. It is also cooler, and therefore better for hot, dry, sandy soils. Thoroughly decayed, it is one of the best of all manures for mixing in composts for most pot plants.

Bones ground fine, making bone meal, is one of the best fertilizers for lawns, roses, and also for potted plants. One half-pound to the square yard for garden purposes, and about one level teaspoonful to a five-inch pot full of soil is the right proportion. It is slower in action and more lasting. The effects of bone meal are no doubt due to the phosphates it contains, and it is mostly effectual on dry, sandy soil.

Guano is a very powerful stimulant, but I do not advise the use of it as it is too caustic, and unless it is judiciously used, will do more damage than good.

PIGS IN BLANKET.

Three cups sifted flour, 2 heaping teaspoons baking powder, $\frac{1}{4}$ teaspoon salt. Sift together, and rub in 2 tablespoons shortening; add enough milk to make soft dough; roll out about one-half inch thick, and cut out with large biscuit cutter. Take small, link pork sausage and partly fry. Place a sausage on each biscuit, roll over half and pinch edges together. Brush top with melted butter and bake like ordinary biscuit. Serve hot.

RATHER HARD.

They gave him whistle and a drum, Two big tin tops that buzz and hum, A ninepin set, some squeaking toys; Then said, "Now Tom, don't make a noise!"

They gave her paints, a sewing-box, Four dolls and stuff to make their frocks, A set of books with pictures gay; Then said, "Now, Madge, run out and play." —St. Nicholas.

THE GIFT OF VALUE.

By Frances Harmer.

Perhaps it was not a good thing for Edna Wilson that she should be so markedly set apart from the other girls who lived in the little town that looked up to her father as its greatest man, but there seemed no help for it. He was richer and more powerful than any one else,—and he was perhaps more public-spirited. Naturally, since he was a power with the grown-ups, Edna, if not a power, was at least distinguished among the girls.

She went to the same school; she did not dress so very much better, because neither her father nor mother thought it best for her. It was impossible not to get her good clothes, but they were not strikingly superior to those worn by her companions. In fact, the difference between her fortunes and the fortunes of the other girls was chiefly shown in one way,—in the gifts she was able to give them,—always so much richer than any they could give her.

However, one day, there came a change. It happened in this way:—

Mr. Wilson had received some exceptionally fine oranges from Florida. Edna, accustomed to lavish giving, immediately asked for some to take to her class, for the morning recess. Permission accorded, she tripped lightly to school, with the basket, in the hands of a colored man, following her. Two oranges were laid with a smile on the principal's desk. One was proffered to each teacher. At recess Edna handed round with a smile.

"Oh, thanks, thank you—thank you ever so much," came in a chorus from eight of the recipients—nine in number. The ninth was Alice Gilmore. Alice had a vocabulary, knew it, and liked to employ it.

"You're a perfect Lady Bountiful, Edna," was her way of showing gratitude.

Florrie Miller looked at her with envy.

"I like you to say things like that out here, Alice," she remarked, deftly peeling her orange. "But please don't mention that before Miss Carteret. She'll immediately pounce on us for the origin of the phrase."

"Well, I wish she would," retorted Alice, her nose in the air. "I'd soon tell her that the lady of the manor (in old English days) who distributed bread and things to the poor was called the 'Lady Bountiful.'"

"Oh!" said Florrie. "Then I don't mind if she asks us!" Nearly everybody laughed, including Edna, whose dainty head was perhaps a little higher.

"Lady Bountiful," said Peggy Chester, in a low tone. It chanced that the carriage called for Edna that day, so that no one walked home with her. Usually she was attended to her gate by a little court. As the girls, at the school gate, saw

her drive away, and waved their hands in answer to her gracious bow and smile, Peggy turned and faced them.

"Go right back," she said imperiously. "I want to talk to you."

When Peggy, who was small and determined and authoritative, spoke in that way, the eight obeyed her. They did so now, and sat under the tree at the back of the schoolyard.

"Do you realize," began Peggy, her dark eyes flashing, "that we are receiving charity—charity—from Edna? She is a Lady Bountiful, and we're like the English poor—in olden days. We take her gifts, and"—

A chorus interrupted her. She had sown the dragon's teeth and raised up warriors. The nine went homewards, all talking at once and all talking loudly.

Fortunately for their smarting feelings, Edna's birthday was at hand. It was the custom of the nine to put a quarter or fifty cents to a common fund, and buy whatever appeared most appropriate as a class-offering.

This time, under Peggy's leadership, they begged money from parents, they mortgaged their own future birthday gifts, and asked for what its purchase would have cost now, in hard cash—they even worked to earn money. Then, instead of sending a common gift, "As if we were not individuals," cried Peggy—they each chose a present in many cases as costly as the class offering had been. Edna was astonished—so were her parents. Moreover, they began to bring her tributes at lunch time, fully as costly as her own, until the result that they desired was achieved; namely, the little heiress learned that they desired no patronage and no charity.

After this her own gifts became more sensible, and theirs could equal hers without effort. Probably some wise grown-ups contributed to this result. However, gift-giving became almost normal.

Almost, not quite. Christmas gifts were not in excess of the occasion, nor birthday tokens. But a fancy for somewhat extravagant "Commencement presents" came into vogue, and, as this year was graduation year for their class, they all felt the need of making some special effort. True, Edna had learned that she was one in a republic,—that her wealth did not entitle her to give herself Lady Bountiful airs,—in fact, the nickname had clung to her until she had lived it down,—but they all felt that this year she would probably outdo herself. So, two months before Commencement day, the graduating class began to worry over the graduation presents.

They began saving pennies and earning them. They began sending for strange catalogues!

Then something happened that made poor Peggy wish she had never interfered. Her democratic spirit proved a boomerang.

Two months before Commencement, the relative who sent her widowed mother the tiny income on which they lived died suddenly, leaving his affairs in confusion. The income ceased. Peggy's brave little mother took in fine sewing. Peggy wanted to leave school at once and find work; but that would have made her mother too unhappy, so she aban-



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doned the idea. After all, it was but for two months.

For about three weeks stern necessity, and many studies, kept Peggy from worrying over minor grievances. Then came a thought of the Commencement,—nay, more, the graduation presents! She could, as she said with a bitter little laugh give "nobody nothing!" Peggy was a sensible girl, but it wasn't pleasant to think of the presents she would inevitably receive, and the none—or next to none—she could give. For a time she decided frankly to give none of any sort, but that seemed too blunt. No, she must do her best and make some little token for each of the nine dear friends she cared for so well.

Three weeks before Commencement her mother was taken ill. Peggy did all the work, nursed her mother splendidly, and went to school only because her presence at home during school hours actually sent her invalid's temperature up—or so the invalid declared.

Fortunately, she had worked so well during the year that no cramming was necessary now. So she had time during the long evenings to work at her tiny gifts. For Edna she did a little water color on a postal. For Florrie she crocheted six buttons. For Alice she made a pretty hair ornament out of a tiny bit of white feather and a scrap of white silk. The other gifts were in proportion. And at last they were all ready, wrapped in white paper, and addressed.

Two days before the Commencement festivities Mrs. Chester was taken worse. It happened to be in

the middle of the night. Peggy, finding her own skill of no avail, rushed out to call the doctor, who lived not very far away. As she stood on his doorsteps, ringing frantically at the bell, she saw a strange red gleam through the cracks of a door a little further down the street. She was in too much anxiety about her mother to take in the significance of the red gleam, which, however, registered itself on her subconsciousness. When the doctor had started at a run for her home, the red gleam forced its way to the surface of her mind, and she turned back. The doctor would do all that human skill could do for her mother; her duty lay clear before her. It was agony to do this, for the child loved her mother passionately; but on she went, and rang the bell of the front door. In a few moments she had them all astir! In a few more she had given the alarm on either side. Then, unaided, she dragged the ladder from the back yard and held it while the mother of the family crept down it, carrying her six weeks' old baby. The father, above, lowered the children, and then, coming down himself, broke the ladder!

"All safe," cried the mother, drawing her children to her. "What does anything matter, if you are all safe!"

Just then there appeared at the window from which they had come a little black head, and a plaintive, though energetic, little bark implored that the doggie of the establishment might not be left to perish.

The father, in great distress, ran round to a neighbor's for another ladder. One was brought; but it was so slight that he, a heavy man, dared

not ascend it. The rapidly gathering, half-clad crowd urged him to think of himself, and the plaintive barking went on.

Peggy could not stand it. She placed the ladder against the wall, and before any one could stay her was half-way up it! They cried, they besought, and at last they busied themselves holding the ladder firmly against the wall, while Peggy reached the little dog, and, clasping him in her arms, began the descent. When she reached the ground, she felt for the moment as if she must faint, and then the thought of her mother seemed to bring her strength and calm. She slipped from the crowd, now augmented by the fire department, and ran home.

For one terrible moment she was half afraid to enter. Then she pushed open the door.

"Mother!" she said.

The doctor turned round and held up a warning finger.

"Hush," he said. "She's asleep. She's doing well."

Peggy began to cry. The doctor looked at her in surprise.

"Come, my child, control yourself," he began—and then he saw the red light beyond the door.

"They're all right, too," sobbed Peggy. "I told them in time." The doctor looked at her, a light in his eyes.

Then he gave her some water, and bade her lie down beside her mother.

Twenty-four hours later the excitement caused by the fire had died down. But the story of Peggy's rescue, first of the family, by her warning, and second of the dog, by her courage, had spread, and probably grown! At any rate she found herself a heroine.

In nothing was the estimation in which she was now held shown so strikingly as in the reception of her gifts. Edna, as well as the others, had surpassed themselves.

"Yes, they're lovely; but, oh, see what Peggy gave me!" was heard on every side. Edna, kissing her, said that the postal was to have the most beautiful frame Boston could show. Alice declared that her ornament was to be worn at her first real grown-up party! Florrie's mother promised that a fine white linen dress should be made for the crocheted buttons—and so on till every gift had been almost enshrined by its recipient. Edna's presents to her class-mates—really valuable pearl pins, all alike—were taken as a matter of course, and, like every other gift, thrown into the shade by Peggy's.

"Just think how they like those simple things," she said to her mother.

"Ah," said Mr. Wilson, to the proud and happy mother, "if the giver be of value, so is the gift."

He turned to Edna, and the other girls, who were all looking half wondering at Peggy,—

"My children, try each of you, so to live that your gifts are of value because of the value of the giver!"

Good Health.

[By H. E. Pastor, M. D.]

What the Eugenist is After.

Nature knows no sentiment, at least she knows no sentimentalism, if we may draw a distinction between these somewhat similar words. She is moved by no sense of pity for the weakling, be that weakling plant, animal, or human organism. In the primitive development of the human race, nature weeded out unrelentingly those who were too weak to take care of themselves and hold their own in the general struggle of life. We see this tendency illustrated in the habits of the lower orders of animals today. Throw a dog a bone, and he will growl and snarl and snap at any other animal which approaches close enough to be suspected of having designs on his precious morsel of food. It makes no difference that the other dog looks lean, hungry or sickly. Pity has no part in the dog's moral make-up. Superior strength in another, and that only, will cause him to relinquish his prize. The dog is merely a type of the brute creation. A cat or any other animal displays the same callous, uncompromising selfishness under similar circumstances. And so it was with the human animal until within comparatively recent times, developmentally considered. But since man has become civilized he has developed traits unknown to his prehistoric ancestry. The qualities of mercy, pity, charity and kindred altruistic sentiments have appeared, and virility has ceased to be the test of survivorship. The science of medicine, with its elaborately equipped hospitals, prolongs the life of the sickly; surgery strives to straighten out the deformed, we have insane asylums for the demented, "homes" for the feeble-minded, prisons for the morally depraved, almshouses and charities of all sorts for the ne'er-do-wells, and down and outs; and the maintenance of all these constitute a heavy tax on the balance of society—the physically and mentally fit.

Pity Puts Us on the Toboggan.

And yet no one is inhumane enough to stand forth and say that these humanitarian institutions should be abolished, and the sickly, weak and helpless—the lame, the halt and the blind—be left to shift for themselves and fall unaided in the effort at self-perpetuation. But that the tendency of permitting our charitable impulses to go on unchecked results in a progressive increase in weaklings and dependents in our midst and that it tends toward racial degeneracy, becomes more and more obvious to the reflecting mind.

The Problem Solved All But—

And now steps forward our eugenist with his solution of this very knotty problem. He says: Let us do what we can for our more unfortunate brethren and sisters. It is a Christian and humanitarian duty, but it is also a duty we owe to posterity to see that helplessness and imbecility and disease are not transmitted to future generations, and therefore only the physically and mentally fit should be allowed to propagate their kind. How this may



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be done best and most effectively—and no well-balanced mind will deny the propriety of some such step—is the purpose of the present eugenic discussion. Society needs a citizenry that can make its way in the world

without crutches. If good breeding is important in dairy stock, beef stock, swine stock, etc., it is a thousand times more important in human stock. But how control the marriage matings—there's the rub!

SAN FRANCISCO.

San Francisco, Jan. 3, 1916.

WHEAT.

The Chicago market has taken quite a jump this week, and there is a slightly firmer feeling on the Coast, though no advance. The trade, in fact, has not recovered from the holiday dullness, and there is hardly any movement, though a good deal is arriving from the north. Very little remains in growers' hands here, but there is still a fair supply in the north.

[First-hand prices on strictly first-class grain, San Francisco.]
 Sonora wheat\$2.75@2.80
 Northern club 2.65@2.70
 Calif. club, ctl. 2.50@2.55
 Northern Bluestem 2.80@2.85
 Northern RedNone offered

BARLEY.

Feed barley is somewhat weaker, and there is very little business, buyers and sellers being still apart in their views. Most of the barley in the country is believed to have been sold, but has been held up by lack of cars, and the result is a comparatively easy feeling here.

Seed, ctl.\$ 2.50
 Shipping, ctl.\$2.35@2.40
 Choice feed, ctl. 2.17½@2.20

OATS.

Seed oats are cleaned up, though some Texas reds are expected to arrive. Feed is in fair demand, with white slightly easier on liberal arrivals.

Red feed 1.80@1.85
 White 2.05@2.10

CORN.

A little Eastern yellow is arriving for the mills, but there is none offered on the local market. California yellow shows a narrower range, with a little more inquiry than before. Milo and Gyp corn have been marked down on account of large offerings of poor grain, though the demand is active.

[First-hand prices on strictly first-class grain, San Francisco.]
 Eastern Yellow, ctl.None here
 California 2.10@2.20
 Milo Maize 2.00@2.20
 Egyptian 2.20@2.25

BEANS.

Except for a little shading of black-eye prices, all quotations remain as last reported, and business has not yet recovered from the holiday dullness, which will probably continue for another fortnight. Quite a large order for pink beans was recently placed by the Government in the south. Tepary beans have been moving East readily, but find only limited demand here, cheapness being the only thing to commend them to the trade. Large shipments of Manchurian beans are beginning to arrive, competing mainly with white and cranberry beans, selling about 1 to 1½¢ per lb. under the prices for those beans.

[Uncleaned, on wharf, San Francisco.]
 Bayos, per ctl.\$5.50@5.75
 Blackeyes 4.50@4.75
 Cranberry beans 6.50@6.55
 Horse beans 3.25@3.50
 Small Whites (south) 7.00@10.50
 Large Whites 8.10@ 9.50
 Pinks 5.75@6.50
 Limas (south) 7.75@ 7.90
 Red Kidney 9.00@11.00
 Mexican Reds 6.50@ 7.00
 Tepary beans 5.90@ 6.00

SEEDS.

There is still some movement of alfalfa, with ample supplies in dealers' hands and unchanged prices. Other descriptions are very quiet at the moment.

(Ton lots or over, to planters, S. F.)
 Alfalfa, per lb. (guaranteed) .19@21¢
 Oregon Vetch 4@ 4½¢
 Melilotus Indica 5@ 8¢
 Melilotus AlbaNominal
 Bur clover, recleaned12½¢

HAY.

Local arrivals have dropped off a little, as might be expected around the holidays, but more is coming in by rail, and the car situation looks a little more encouraging, though far from satisfactory. Sales have been light, but all offerings are well cleaned up at firm prices, with an advance on stock hay. Offerings here are mainly of the better grades, and cheap hay is rather at a premium, both here and in many parts of the country, much of it having already been cleaned up. Alfalfa is in very strong demand, and some large sales are reported in the country. In the bay towns alfalfa retails around \$20 per ton. Weather conditions so far have been favorable for the new crop, but it is too early to draw conclusions.

[Prices per ton, carload lots, San Francisco.]

Wheat, No. 1\$16.00@18.00
 No. 2 14.00@16.00
 Tame oats 13.00@16.50
 Wild oats 13.00@15.00
 Alfalfa 12.00@15.00
 Stock hay 12.00@13.00
 Straw, per bale60@ .80

FEEDSTUFFS.

Cracked corn is somewhat easier. Other lines are unchanged, the demand in general being quite active, and prices firm.

Beet Pulp, per ton\$30.00@31.00
 Alfalfa meal, per ton 21.00@22.00
 Bran, per ton 30.00@31.00
 Oil Cake 40.00@41.50
 Coconut cake or meal 31.00@32.00
 Cracked corn 47.00@48.00
 Middlings 39.00@40.00
 Rolled Barley 46.00@47.00
 Tankage 47.00@48.00
 Rolled oats 47.00@48.00
 Rice middlings 33.00@34.00

POTATOES, ONIONS, ETC.

General garden truck is decidedly scarce, the cold rains having curtailed arrivals in nearly all lines. Lettuce is firm, celery scarce and high, even

THE MARKET REPORTS

Figures Given Are Independent and Reliable.
 Prices Quoted as Paid to Producers.

for poor stock; and tomatoes and rhubarb hard to get; though there is some stuff coming from Florida, etc. Beans and peas are out of the market. The potato situation is a little unsettled, showing more strength since the first of the year. Oregon stock has no market East at present, and is coming this way in large quantities, with heavy offerings in the north. Salinas goods, however, are well cleaned up; Delta stock is in lighter supply than usual at this season; and a sudden demand from Texas this week has brought a much better tone to the market. Onions are scarce, with no outside stock yet in sight, and prices are advancing.

Lettuce, crate\$1.00@1.25
 Celery, Delta, crate 4.00
 Tomatoes, crate 1.50@1.75
 Rhubarb, box 1.00@1.50
 Mushrooms, small box 1.25@2.00
 Potatoes, ctl., Delta 2.10
 Salinas 2.40@2.60
 Oregon 2.00@2.25
 Onions 3.00@3.25
 Garlic, new crop, per lb. 3@4¢

POULTRY.

Turkeys are almost entirely nominal. The snow blockade in the mountains has stopped arrivals of Eastern chickens to a large extent, and with very moderate offerings from nearby points in the last few days, prices have advanced sharply in all lines, especially on hens. Belgian hares and geese also are stronger. Turkeys, dressed, large, lb.Nominal
 Turkeys, live, lb. 25¢
 Broilers, 18 lbs. to doz. and less, lb. 30¢
 do. over 18 lbs. to doz. 23@25¢
 Fryers 24@26¢
 Hens, extra, per lb., colored 22@24¢
 Small Leghorn 20@22¢
 (3 lbs. and over) 23@25¢
 Squabs, per lb. 38@40¢
 Geese, per lb. 18@20¢
 Old 17¢
 Belgian Hares 12½@13¢

BUTTER.

At least two cars have gone East within the past week, and more is expected to follow soon, while local arrivals have been very moderate. So far, however, supplies are sufficient to take care of local needs, and an advance at the close of last week was not maintained.

Several cars have been shipped East, but a little jump in prices Saturday stopped buying for shipment, especially as the extreme cold has made shipping rather hazardous. Offerings were small for a few days, but are again on the increase, causing easier prices for the moment; though this will no doubt bring a renewed shipping demand.

Both flats and Y. A.'s have registered another advance, as a result of a steady demand for shipment, which is leaving rather scant supplies for local requirements.

[S. F. Dairy Exchange prices.]
 Y. A.'s, fancy20½¢
 Fancy Calif. Flats, per lb.17½¢
 Monterey Cheese18@20¢

CHEESE.

Both flats and Y. A.'s have registered another advance, as a result of a steady demand for shipment, which is leaving rather scant supplies for local requirements.

[S. F. Dairy Exchange prices.]
 Y. A.'s, fancy20½¢
 Fancy Calif. Flats, per lb.17½¢
 Monterey Cheese18@20¢

DECIDUOUS FRUITS.

Los Angeles, Jan. 2, 1917.
 The cold weather has made it impossible to ship the northern apples East, and they are causing this way in large quantities, causing an easier feeling in the local market, which has to some extent affected Bellflowers and Newtowns. The former are about cleaned up, and are lower, with little strictly good stock offered. Newtowns are moving slowly, but there are some large inquiries from England.

Apples:
 Bellflower, box75@ .85
 Newtown 1.00@1.15
 Pears, Winter Nellis 2.25@2.75

DRIED FRUITS.

The market everywhere continues

dormant, with jobbers and small dealers taking stock. Local packers believe that nearly everything is out of growers' hands now; at least, a much larger proportion than usual at this season; and with such concentration of stock no weakening of prices is anticipated. Packers' stocks are moderate, and a rising market during the spring is looked for with full confidence; while the belief is that if the war should end suddenly the market would be fairly skyrocketed. This consideration will also affect the coming crop, which is expected to bring very good prices, with little regard to quantity.

[Net to growers, bulk basis, f. o. b. shipping point.]

Apples, new crop 8 @ 8½¢
 Apricots, per lb. 1916 15 @ 16¢
 Figs, white, 1916None offered
 Plums, blk 5½ @ 6¢
 Californians, 1916None offered
 Prunes, 4-size basis, 1916 ¼ @ 7¢
 Pears 7 @ 8¢
 Lake County Pears 11 @ 12½¢
 Peaches 6 @ 6½¢

ALMONDS.

Practically everything in the country has been cleaned up, and local stocks are for the most part only in jobbing quantities. First-hand prices are accordingly entirely nominal. Trading just now is very quiet.

[Exchange prices.]

Nonpareils, lb.20½¢
 I. X. L. 18¢
 Ne Plus 17¢
 Drakes 16¢
 Langueodoc 16¢

HOPS.

A few sales of no great importance have been made during the last fortnight, all transactions being within the range quoted.

Sacramento\$@10½¢
 Mendocino10@11¢

HORSES.

There is nothing new to report this week, as no new stock worth mentioning has appeared, and while considerable stock is offered in a retail way, the market is quiet.
 Drafters, 1700 lbs. and up. . . 250
 Drafters, 1550 to 1650 lbs. . . 150@200
 Chunks, 1350 to 1500 lbs. . . 150@175
 Wagon horses, 1050 to 1350 lbs. 110@150
 Green Mountain range horses, 950 to 1200 lbs. 20@ 75

GROCERIES.

Sugar is still dropping, being now on the basis of \$6.75 for granulated. Some brands of soap have again advanced, and canned salmon is higher.

LOS ANGELES.

BUTTER.

Receipts of week ending Jan. 2, 1917227,900.
 Receipts of week ending Jan. 2, 1916244,680.

Following Christmas the market assumed more life. Receipts since our last review have been only fair, and cold storage stocks continue lighter than a year ago. The tourist season opened during the week, which gave us an increased consumptive demand, and there was no corresponding increase in the receipts to meet it. This made buyers on call more willing to take hold and caused a firmer market. In San Francisco the market advanced ½¢ during the week, and Chicago the same, while New York ruled firm at last week's prices. The New Year opened here with very fair receipts and little interest in the market. There was no trading on call, and the market was made the same as Saturday.

We quote extra creamery36¢
 Prime first34¢
 First32¢

191637 36 36 36 36 36
 191528 29 29 29 29 29

EGGS.

Receipts (railroads) for week ending Jan. 2, 1917—833 cases.

Receipts (railroads) for week ending Jan. 2, 1916—801 cases.

With the Christmas demand satisfied the market the past week showed a little more weakness. But with light stocks in cold storage and the receipts running about the same as a week ago, decline in Los Angeles being only 1¢ up to Saturday, while in San Francisco the market advanced. In Chicago the market showed no change, though was rather firm under severe weather, and the same may be said of New York. Tuesday the new year opened with a stronger tone to the market. Receipts were light for two days and buyers bid the market 1¢, and there several lots sold at this advance.

We quote fresh ranch case count, 38¢.
 Pullets, 34¢. Candle 2¢, and selected 3¢, over quotations.

191637 37 37 37 37 38
 191535 36 35 35 34 34

POULTRY.

Receipts lighter and altogether local caused a firmer tone to the market the past week. The demand for everything has picked up, and all good fat poultry wanted at quotations. Hens are higher, and so are young roosters. Turkeys are also selling well and have been advanced another cent since last week. Ducks and geese in very fair demand and steady.

We quote from growers:
 Broilers, 1½ to 2 lbs. 23@24¢
 Fryers, 2½ to 3 lbs. 20@22¢
 Hens, over 4 lbs. 19@20¢
 Ducks 15@16¢
 Geese 16@17¢
 Roosters, 3 lbs. up (soft bones) 20¢
 Turkeys, heavy, 12 lbs. and up. . 25@26¢
 Turkeys, light 21@22¢
 Squabs, live, per doz\$1.50@3.00

Special Livestock Market Report.

San Francisco, Jan. 2, 1917.

The feeling continues strong with cattle, but quotations remain unchanged. Offerings are light, but some good shipments are arriving from the northern part of California and Oregon that were bought outright by packers.

HOGS are advanced on all classes except lightweights, packers' yards being full of the latter, which are moved with difficulty. Receipts are falling off, the reduction last week amounting to fully 20¢ per cent, but the quality is good.

SHEEP continue on the same basis as before. Supplies are coming from feed lots with no outside offerings.

WOOL—The holidays and the continuance of peace talk has stopped all local dealing in wool. Dealers report a total lack of inquiry for wool from the East, and are doing no buying as a result. The Boston market is strong, but nothing is moving.

[Prices paid for stock, live weight, at cars, without feed or water, at Stock Yards, South S. F. Hog prices subject to seller standing one-half of all hogs condemned by government inspectors.]

Steers, No. 17½@7¢
 No. 26½@7¢
 Cows and Heifers6@6½¢
 No. 25½@6¢
 Bulls and Stags4½@5¢
 Calves, light8@8½¢
 Medium7@8½¢
 Heavy6½@7¢

HOGS, grain-fed:
 100 to 150 lbs.8½¢
 150 to 300 lbs.9½@9¢
 300 to 375 lbs.9@9½¢

SHEEP: Prime Wethers7½@8¢
 Ewes6½@6¢
 Lambs9½@10¢

WOOL: Red Bluff, year's25@27¢
 Mountain, fall16@20¢
 Sacramento Valley, year's19@25¢
 Mendocino, year's32@33¢
 Mendocino, fall19@21¢
 Southern, year's18@21¢
 Southern, 7 months'13@16¢
 Southern, fall11@12½¢
 Imperial Valley, year's17@19¢
 Imperial Valley, 7 mos.14@15¢
 Nevada22@24¢
 Fall wool10@20¢

North Portland, Ore., Jan. 1, 1917.

CATTLE—The continued light receipts of cattle today met a very keen demand, and prices ruled a good 25 cents higher than last week, when a 50¢ advance on the best beef grades. One load of good steers brought \$8.50, with another bunch at \$8.35; fair to good kinds brought \$7.50@8.00. All supplies were sold and weighed early, there not being enough here to let each buyer get a load. The stuff also sold readily although no strictly good ones were included in the day's trade. Fair beef cows brought around \$6.50, \$6.75, with ordinary ones around \$6.00. Only a few bulls available, best bringing \$5.25 from feeders. Best heavy bolognas from \$4.25 to \$4.75, with light kinds \$3.50 to \$4.00.

HOGS—Hog prices continued their upward climb today again breaking all records for the winter packing season. There was but a moderate run of 2000 head here which was quickly bought up. Prices were 15 to 20 cents higher on all good kinds while pigs were advanced another 25¢. The quality of the run was the best of the year. One load of prime heavies brought 10.25 with another load at 10.20. Bulk of the good packing hogs sold from \$9.85 to 10.10. Pigs brought 8.50 to 8.75, stock hogs met a good demand with but a light supply. Best 80 to 125 lb. pigs are selling from 7.00 to 7.25.

SHEEP: Sheep prices continued upward when prices on all kinds were quoted 25 cents higher. Good lambs are selling 10.50 to 10.75; good yearlings 9.00 to 9.25 and good mutton ewes 8.00 to 8.25. Supplies continue light.

Los Angeles, Jan. 2, 1917.

CATTLE: As usual holiday week it was quiet the past week in this market. Receipts were moderate and mainly from California and Arizona. Quality of the steers arriving was very good for this time of year and mainly grass fed, the best fed steers having been pretty well disposed of. While prices are not notably higher they are very firm in sympathy with strong markets east.

Quotations, f. o. b. Los Angeles:

Beef steers, price 1000 to 1100 lbs.\$7.00@7.75

Stockers and feeders 5.50@6.00
 Prime cows and heifers 6.25@6.50
 Good cows and heifers 6.00@6.25

HOGS: A firm market was had the past week, the cold weather encouraging the consumption of fresh pork, and the Eastern market continues high. Hence packers had to bid up pretty strong to get what they wanted. California and Arizona furnished most of the supply and as of late were mostly light weights. But few Idaho hogs coming in, most of them being drawn East by the high prices there.

Per cwt. f. o. b. Los Angeles:
 Heavy, averaging 250@300 lbs. 9.25@9.50
 Mixed, 200@250 9.25@9.50
 Light, 175@200 9.25@9.50

Rough docked 20 pounds, piggy sows 40 pounds and stags 80 pounds.

SHEEP: Falling weather checked the receipts the past week which were light and market in consequence very firm and in some instances the best of them brought a little more money. Killers were all in the market and wanted supplies and the offerings were soon disposed of; wethers and lambs both meeting with an active demand.

Per head f. o. b. Los Angeles:
 Prime wethers\$7.00@7.25
 Prime ewes 6.50@6.75
 Yearlings 6.50@7.00
 Lambs 6.50@7.00

CALVES: Offerings light the past week and what few coming in were soon disposed of. Selling at \$8.50@9.50 per cwt.

Dressed	3.75@4.85
BEANS.	
The past week was another quiet one in this market. As usual during the holiday week there was little demand. What few moving brought steady prices. With the coming of the new year a better movement is looked for. We quote from growers:	
Limas	\$7.75@ 8.00
Large white	9.25@ 9.50
Small white	9.50@10.00
Pinks	7.25@ 7.50
Blackeyes	5.25@ 5.75
Tepary	5.75@ 6.25

Special Citrus Market Report.

Los Angeles, January 2, 1917.

Shipments of citrus fruit from Southern California from November 1 to December 28: Oranges, 2390 cars and lemons 728 cars. The same time last year oranges 1,028 cars and lemons 798 cars.

Shipments from Central California from November 1 to December 27: Oranges 3590 cars and lemons 104 cars. Same time last year, oranges 3,666 cars and lemons 104 cars.

Shipments from Northern California from November 1 to December 27: Oranges 816 cars and no lemons. Same time last year oranges 553 cars and lemons none.

The Christmas trade having been satisfied, the Eastern market last week showed weakness, and the less desirable sizes were a little lower. The crop continues to go forward quite freely, but it being the going out of the old year and the coming in of the new, buyers were inclined to hold back and go slow. Still fair prices were obtained for the best known brands. Lemons were also weak to lower. A good many poor lemons going forward. Locally the market was the most quiet for the past six months. Local packers were holding out of the market, wait-

HAY.

It was much a weather market the past week. Many of the arrivals came in in open cars and were more or less damaged by the rains. Such offerings were hard to move and were sold for less than quotations. All good dry hay was in fair demand and steady. Receipts only fair yet equal to the demand.

We quote f. o. b. Los Angeles:

Barley hay, ton	\$16.00@18.00
Oat hay, ton	18.00@20.00
Alfalfa, northern, ton	15.00@16.00
Alfalfa, local, ton	17.00@18.00
Straw, ton	7.50@ 8.00

ing to see how the Eastern markets would size up on the opening of the new year.

What few oranges bought by local packers were at 1c per pound, but they only paid this for nice fruit. Poor had to be sold for less. Grapefruit is 1/4c lower and less active, packers only bidding 1 1/4c to 2c per pound in the grove. Lemons are also dull at 1c per pound in the grove for the best; poor has to be sold for what they will bring.

EASTERN CITRUS AUCTIONS.

New York, Dec. 29.—Eighteen cars California navel, one Arizona navel, two cars California lemons sold. Navel unchanged; lemons lower on account of poor quality. Arizona unchanged. Weather fair.

California navel averaged \$1.50 to \$2.80. Arizona navel averaged \$2.00 to \$2.35. Lemons averaged \$1.10 to \$2.20.

Boston, Dec. 29.—Six cars sold. Market doing better. Navel averaged \$1.90 to \$2.75. Lemons averaged \$2.50.

Philadelphia, Dec. 29.—Two cars sold. Market higher on navel. California averaged \$1.90 to \$2.35.

was applauded when the guests drank a toast to 1917 and the 30,000 subscribers the Rural Press is to have before the end of the year. Those present were: Prof. E. J. Wickson, W. H. Schrader, F. A. Tutt, H. E. Pastor, C. Powell, R. E. Hodges, J. C. Loomis, D. L. Schrader, W. D. Guthrie, W. C. Leland, R. H. Pearson, C. H. Barnum, C. W. Smith, R. R. Neimeyer, O. L. Linn, J. H. Bridges, Thos. Gregory and Frank Honeywell.

We trust that next New Year's day we may have every one of those present at another meeting held for the same purpose.

MOVING BIG PALM TREES.

[Written for Pacific Rural Press by W. H. Shafer, C. E., Selma.]

Answering the question as to how to move big palms in issue of Sept. 9, have moved numbers as follows: The best time to move is just before spring growth begins, in March here. Make a crib of timbers on the side of palm that you expect it to fall, high enough to raise the butt above the ground, far enough to allow a dray to back under after the tree is down. Dig the tree out, falling it with ropes if necessary on the crib. Do not try to save the roots, but do not injure the base of the trunk from where the roots start. You will have numerous roots from two to four feet long. Cut these all off just before replanting as they will all die anyway. Back your dray under, raise the tree with two jack-screws enough to remove the timber crib and lower it to the dray. Put a light truck under the top to keep this from dragging on the ground and wearing out. Haul the tree to its new location.

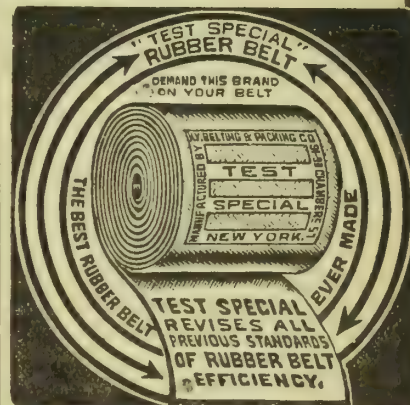
Rebuild crib far enough from the proposed new site so that the tree will nearly balance on the crib. Get the dray away and dig the hole a little larger than the base of the trunk. In this sandy soil I plant three feet deeper than the tree formerly stood. Raise the tree upright by means of a double block and tackle over an A-shaped frame to give it a lift at first tightening of the ropes, dropping the base in the hole prepared. Fill the earth around the base and give plenty of water. I have moved trees thirty feet tall and weighing many tons and never lost one. The roots of a palm are like grass roots. Under the base of a palm are hundreds of pointed embryo roots that will quickly replace the ones cut off. The whole secret lies in not unnecessarily bruising the trunk of the palm, and giving

plenty of water every day in its new location until growth is re-established, which will be shown by the palm producing new leaves of a healthy green color.

I have moved palms weighing nearly four tons one-half mile for a cost of twelve dollars each.

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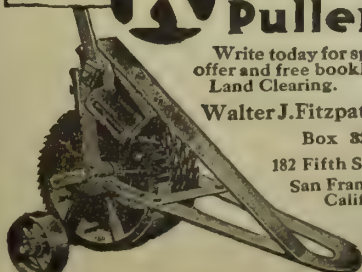
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A get-together meeting of the Rural Press force was held at this office all of New Year's day. The subscription force, with two exceptions, and the advertising, editorial and business departments were each fully represented. Never before had all of the men met each other, while in many instances fellows who knew each other well met from different fields, having not seen each other for several months.

It was a fine meeting and we thoroughly enjoyed the way they met serious and knotty problems. We believe that every man, no matter which department he represented, learned something to his advantage and to the future betterment of the paper. Not only did the editorial force come into actual contact with the feeling as to the Rural Press as it exists among our subscribers, but the solicitors got a close touch with the ideals of the editors and what the paper stands for and is attempting to do for western agriculture. It was give and take all day long, but no hard feelings were engendered through the discussions. The work of the day was followed by a dinner in the evening, after which short speeches were given, headed by Prof. Wickson. The sentiment: "True friends, like ivy and the wall it props, both stand together or together fall,"

Publisher's Department.

Don't wait now in placing your orders for nursery stock. You will need it soon and the early orders get the best attention—besides some lines will soon be sold out. Remember that in buying from an established nursery you secure the protection of a good name for square dealing.

Advertised goods are usually the best. Think for a moment and the force of the above will prove itself. The man or firm who advertises, does so to get your trade. To make a profit he must secure return orders, and in order to secure your steady patronage he must please you on the first purchase.

Howard C. Rowley, publisher of the California Fruit News, is to be congratulated upon issuing a very handsome and comprehensive number of his journal last week. This annual review number is a regular affair with Mr. Rowley, and it always contains a great deal of matter of great value to the fruit interests of California. The crop and market statistics given are the best of any that we know of. Price of this number is 25 cents.

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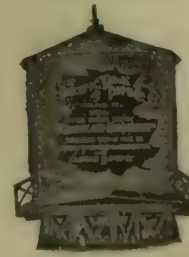
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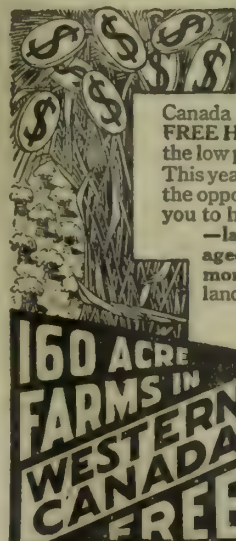
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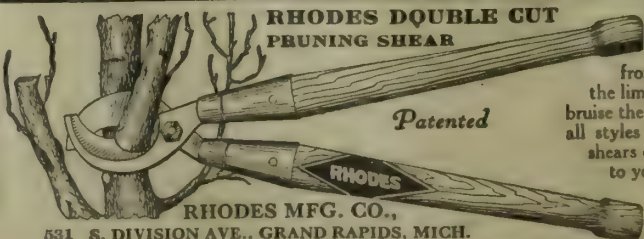


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Canada extends to you a hearty invitation to settle on her FREE Homestead lands of 160 acres each or secure some of the low priced lands in Manitoba, Saskatchewan and Alberta. This year wheat is higher but Canadian land just as cheap, so the opportunity is more attractive than ever. Canada wants you to help feed the world by tilling some of her fertile soil—land similar to that which during many years has averaged 20 to 45 bushels of wheat to the acre. Think of the money you can make with wheat around \$2 a bushel and land so easy to get. Wonderful yields also of Oats, Barley and Flax. Mixed farming in Western Canada is as profitable an industry as grain growing.

The Government this year is asking farmers to put increased acreage into grain. Military service is not compulsory in Canada but there is a great demand for farm labor to replace the many young men who have volunteered for service. The climate is healthful and agreeable, railway facilities excellent, good schools and churches convenient. Write for literature as to reduced railway rates to Supt. of Immigration, Ottawa, Can., or to

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THE PACIFIC RURAL PRESS

SAN FRANCISCO

JANUARY 13, 1917.

LOS ANGELES

Apricot Markets Good and Culture Safe.

[Written for Pacific Rural Press.]

APRICOTS enjoy marketing advantages superior to any other fruit except pears and apples, in that most of the commercial varieties may be shipped, dried, or canned, depending on which seems likely to pay best in any given season; and if dried, the pits bring around \$50 per ton. It is true, also, that California has no important competitor in apricot growing for the market. Add to this the fact that, as M. Sharpe of Solano county observes, "Apricots will do on almost any soil, provided the stock is adapted to the soil; and they do well on any stock except the almond"; then you have cultural advantages possessed by few fruits. Add to this their longevity and great freedom from sunburn and baffling diseases—then why should not apricots be grown with confidence in California?"

Growers of Dried Apricots have been at the mercy of the packers; but even so, they have not suffered depressingly low prices as many of the other fruits have. Lest they might at some time in the future, they are taking the marketing into their own hands; and it is confidently expected that the next crop will be handled by the growers for the growers in a way by which the market can be expanded as there is need. We have the following from George E. Merrill, Secretary of the Prune and Apricot Growers' Organization Committee, under date of Dec. 28:

"We are convinced that the apricot men are signing up in the Association just as freely as are the prune men; and we are confident that by March 1, there will be at least 75 per cent of each fruit in the Association. In many sections of the State we already have 90 per cent of both prunes and apricots signed up; and what is possible in these sections is also possible in every other section. It is my personal opinion that we have today at least 40 per cent of the apricots of the State actually signed up. So far as we can judge from interviews with the growers, there is, generally speaking, a feeling of optimism regarding the future of the apricot industry. The plantings this year will make use of all the apricot nursery stock available, and progressive growers look forward to a good period of prosperity, especially after the association goes into effect. The writer was much impressed on a recent trip South, with the extensive apricot planting in Riverside, Los Angeles, and Ventura counties. He was also pleased to note the vivid interest of the growers regarding the best methods of pruning the trees and harvesting the crop. In certain sections the orchards present indications of having received intelligent

care from the start. In other sections the idea came very strongly to the writer that radical changes in pruning methods might result in better fruit."

C. O. Silliman, a pioneer apricot grower of Pajaro Valley, who with associates planted 180 acres many years ago, notes the large recent plantings, and says that under present marketing conditions, he could not advise planting apricots,

from the growers, the more profit for them. At the same time, they have depressed prices in the East for the year, by their competition to sell so early in the season. If they cannot buy from growers to good advantage, they are supersensitive about the quality of fruit delivered under their contracts. But the greatest evil of the system, as Mr. Silliman impressed us, is that it prevents individual packers from pushing new

means of disposing of fruits as the acreage and crops increase. An instance is the delicious whole dried apricots of which Mr. Silliman put out fifteen tons one year. He asked various packers to put a few boxes of these into each carload of ordinary fruit and get opinions of their Eastern clients. It was too much trouble in this case, as in others which he urged.

But the proposed organization of apricot growers would be most certain to seize every opportunity to develop new avenues of disposal and to increase by advertising the consumption in America. In this expectation, Mr. Silliman thinks apricot planting entirely safe.

For Fresh Shipping purposes, the Royal is the premier and undisputed sovereign of the Eastern auctions, except for a few of earlier varieties. One of the best authorities on California shipping fruits says he would not personally advise planting more apricots, as he thinks the present normal supply is enough to equal the demand.

"The demand for apricots is different from that for any other fruit in that the apricot enjoys a short season, and we doubt if it would be advisable to lengthen it by shipping later varieties.

"By the introduction of the apricot to smaller markets throughout the country, we have created a demand that has enabled us to satisfactorily dispose of our apricots for several years. There has been practically no competition from apricots raised in any other State. The Winters and Vacaville districts up to date have produced the best shipping apricots in California. A Santa Clara grower has shipped Blenheims to Honolulu successfully the past season.

In Imperial Valley, 110 acres of apricots were reported in bearing in 1915, and 335 acres of young trees. These are mostly Newcastle, Blenheims, and Royals. E. H. Erickson is the pioneer, with trees 10 years old. He has not found the Royal profitable, though H. S. Reed, probably the largest apricot grower in the Valley, has

(Continued on page 38.)



Apricots Do Well on Many Stocks and Soils; May Be Canned, Dried, or Shipped; the Pits Are Valuable; the Markets Bare, Demand Good; and the Growers' Organization Promises Well.

cots, because they could not be sold at a profit. During his many years in the business, he has made friends with many of the packers, and has no unfriendliness toward them, but only toward the system under which they must operate. He says it is a fact that packers ordinarily have 60 per cent of the dried crop sold before they buy the fruit. Then the cheaper they can get it

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EDITORIALS

CALIFORNIA WINS EITHER WAY.

W E ARE at a loss to know what has become of the California peace drive which we mentioned with sincere delight in our issue of December 2. At that time California peace-makers stated terms of peace and prepared to send them Eastward with half a million signatures. It could not have traveled very far before the Kaiser submarined our proposition with his own peace projectile, and gave President Wilson a chance to unleash his dove as the original and only American proposition. Under the circumstances we are at a loss to know whether the California peace pigeon ever got beyond Omaha or not. The general fact seems to be that there are at least three peace birds somewhere in the sky, and all the belligerent hunters are out gunning for them. The enemy-nations seem to be fighting now more briskly than ever—which is perhaps due to the fact that they all know now that they are fighting for peace!

But though California's peace bird may surely be trying to fly with a broken wing, and though the whole peace output seems to be worse war, there is some consolation in the claims, which are now being made, that whether in peace or war, California will go ahead in her regular line of business of benefiting the world just the same. John Perrin, chairman of the Federal Reserve Board of the San Francisco district, in his review for December, points out the fundamental reasons why peace cannot affect the Pacific Coast States adversely. He says:

"The industries of the Pacific Coast have not been developed to such an extent as in the East. In no sense have we had the feverish activity in all lines which have characterized the Atlantic States. On the other hand the Pacific Coast has sold its raw materials at extremely high prices, and has been enriched by the effect of the war without entering upon an era of over-speculation and expansion. If the war were to cease, industries such as lumbering would be greatly stimulated, and other activities which have been repressed by the lack of transportation facilities would receive a new forward impetus. It seems probable that the transition from a war condition to one of peace will be marked by a minimum of disturbance of the conditions of prosperity which now prevail quite generally throughout the Pacific Coast.

AMERICANIZATION OF CALIFORNIA.

O NE result of the war which will be of permanent and wide value in the development of many California industries will be the more thorough alliance of our production with consumption in the United States. Readers will remember, for instance, the drive which speculators made on our cured fruits, on the ground that embargoes and high cost of ocean freights would cut us loose from our great European consumers, and render our products nearly worthless. It hardly worked that way for a minute. The United States rose immediately to full values for home use, and showed such capacity that we have had, right in the midst of the war, the easy capitalization of the greatest producing combination in the line of cured fruits ever realized on

this coast. How it will behave toward fruit-growers needs to be demonstrated, but as manifesting the confident attitude toward the outlook for the marketable product itself, the success of this capitalistic venture leaves nothing to be said. On the growers' side, the continued success of the orange, raisin, walnut, almond producers, etc., and the enthusiastic support of the peach, prune, and apricot organizations, are all demonstrations of the strength and confidence in our fruit industries. We believe these demonstrations rest in large part upon the newer view and confidence in the opportunity for these unique products in American markets. It is clear now that previous to the war we were viewing California too much in the light of an appanage of Europe, and figuring that our great surpluses must largely go that way. We can now see that this was an error. It was easy to deliver vast consignments of fruit products and allow European distributors to make the chief money out of them. It is perhaps more difficult and expensive to develop American markets to greater capacity, but it has already been shown to be quite practicable and more profitable, and all our large growers' organizations are working very intelligently toward that end.

WHY IS THIS DESIRABLE?

W E CAN see at least two very promising conditions proceeding from our experience during the last two years:

The popularization of our unique products in American States and increasing dependence of American consumers upon California products will increase national concern in and appreciation of those products and will generate much wider interest in protecting these products from competition with cheap labor products in foreign countries. It will be more clearly seen that such protection will not advance cost of such products to consumers, but will shear closer to the skin a lot of traders who have been spending a good part of their incomes to remove protection from California products, not that they may sell them for less to consumers, but that they may increase the profits on importation after they get the open ports they are willing to pay for. Every carload of good stuff which we can sell at the East, the more difficult and less profitable it will be to play the importers' game.

The unfolding of this new view of American patronage of California products widens our outlook for profitable production. We shall still sell in Europe, perhaps more largely than ever, but in less ratio to the total product. This is the view which justifies the wide disposition toward greater fruit planting which prevails this year. It also warrants an interest in planting a greater variety of fruits which have demonstrated their acceptability to canners and their value in orchard curing. We shall probably need not only more fruit, but more kinds of fruit.

CALIFORNIA FOR TARIFF BOARD.

A S WE have incidentally mentioned protection as more likely to be secured as we secure wider American knowledge and interest in our products, we wish to make a more direct reference to tariff matters. It is now pretty well understood that the tariff will retire from the political need. At the last election both parties committed themselves to the adjustment of tariff questions by an expert tariff board—so that whether staying with the Democrats, as we did; or going with the Republicans, as we might easily have done, the tariff quarrels would be settled by the same agency—a national non-partisan tariff commission. And now it is announced that President Wilson may appoint Willis H. Booth of Los Angeles as a Republican member of that commission. Mr. Booth will be very satisfactory as a California representative on the commission, because he is a thoroughly qualified expert on all matters entering into conditions of production in this State. It is also pointed out that Mr. Booth is one of the best qualified foreign trade experts in the United States. He has traveled in practically every country on the globe and has made first hand studies of the conditions that must be met by American producers. In this way Mr.

Booth has prepared himself for service such as the provision of a tariff commission contemplates. It is also fitting that Mr. Booth's knowledge and experience in California production should be recognized since California has more industries that need a fair measure of protection than probably any other States in the Union. Besides, in California protection is perhaps more directly allied to the interests of the multitude of small producers and freer from the danger of ministering to monopolies and trusts than in any other State. California desires that the tariff be adjusted to secure fairness in production and sale and cancellation of advantages to those who exploit cheap, foreign-labor production in American markets. We hope that Mr. Booth will be appointed and that he can give his time to this patriotic service.

WHY CALIFORNIA IS GOOD FOR PEOPLE

I S IT not strange that Californians who have been busy for more than six decades demonstrating the superiority of California over wintry countries for the growth of fruits, vegetables, grains and domestic animals, should only at this late day be doing something in systematic demonstration of what California is doing and can do for the human race? Of course, California has not just awakened to consciousness of the fact. It has been insisted upon, with more or less poetry and oratory, ever since the mining pioneers passed their first winter in the foothills; it has been embalmed in our real estate literature from the time the first authenticated sale of climate was made; in fact, it has been so common that some people have become ashamed of it, and have blushed when an orator has said that climate was the most distinctive and beneficent resource of the State—as though he were proclaiming something fanciful. Of course, then, Californians have always had consciousness of the forcing, developing power of the California climates, but they have given the world no definite measures of it; the efficiency percentage of the California climate in the making of people has not been worked out in a scientific way. In the case of fruits it was done years ago—in fact, in the '50's, when drawings were first made of outlines of Eastern-grown fruits far within the outlines of the same fruits grown in this State. It was done with grains when a Californian horseman was pictured tying the heads of grain across his horse's withers, while grain of Eastern stature passed under his belly. It was done with sheep when wool staples were accurately compared in length and when the California yearling came along with the teeth of an Eastern two-year-old. And there were many other definite measurements of the wonders of the California climate in the development of superior forms, precocity, etc., with both plants and lower animals, which need not now be cited; but nothing definite and systematic with people. There was plenty of impressionable evidence—such as the common experience of average Eastern-grown parents walking under the extended arms of their California-bred offspring, but such evidence is not of scientific record.

Fortunately such systematic record has now arrived. Dr. E. S. Sundstroem of the University of California and a race biologist of note, has tabulated the rate of growth in terms of weight and stature of about 1000 Oakland children of Scandinavian parentage and compared this with the growth of Scandinavian children in the old country, and also with the growth of the average Oakland children. The figures selected by Dr. Sundstroem for comparison are from the families of the well-to-do in Sweden, where food and surroundings are in no way inferior to those supplied by the American home. These are some of Dr. Sundstroem's conclusions:

"The only difference, then, is the difference in climate manifested. And the effect of climate upon growth is manifested by the fact that in regions suffering from severe winters the children stop growing when the cold weather sets in, while in California they grow almost continuously during the whole year, and therefore have a chance to get ahead of their less fortunately located foreign brothers and sisters."

"Thus, it is actually probable that of twins separated in childhood, the one raised in California would be taller and weigh more and reach maturity one year sooner than the other child reared in Sweden. The greatest average difference in stat-

ure is something over two inches—this much to the credit of the California child."

It is also interesting to note in this connection that the California-grown child has not only the chance to be larger and to mature sooner, but he may also expect to live longer. The last report of the California State Board of Health says this:

"Every year Californians live to be a little older. In 1914 the average age of death was 49.6 years, and in 1915 it was 51.6 years. The average age of death has advanced more than three years since 1911. The increase was greatest from 1914 to 1915, and applies to both men and women all of the principal causes of death in every geographical division of the State."

ROSES AND THORNS.

WE ARE much ashamed of the ignorance, stupidity or malice which has induced some of our San Francisco contemporaries to seek a vain glory for the bay region by unwarranted comments on the fact that roses were bought in this part of the State for the adornment of the rose carnival on New Year's day in Pasadena. We hope the use which they have made of the fact can be attributed to ignorance and nothing worse. They have been rejoicing that San Francisco could ship thousands of dozens of cut roses at a time when the Pasadena supply failed—which would have been well enough if they had frankly stated that the San Francisco roses were grown under glass. It would have been perfectly legitimate to have gloried at the fact that the San Francisco region has much greater resources and capacity in the way of house-grown roses than the Los Angeles region has, and has developed a fine long-distance ship-

ment business in cut flowers. But to convey the popular impression that we were cutting these tens of thousands of roses in the open air, and therefore have a better climate for holiday, blue-sky roses than the Los Angeles region has, is immoral. This year the latter region struck an unusual run of low temperatures, dark skies, and fogs—these discouragements to blooming of open-air holiday roses, starting in earlier in the south than farther north and reaching down to quite low December temperatures. Because of this the Southern California rose gardens did not come through as usual, and Pasadena had to buy hothouse roses to maintain her New Year's pageant. As the event is far more social than horticultural, the managers were justified in getting roses wherever they could to delight their guests, and they found them under glass in the San Francisco district. This fact has at least two significances. It shows that San Francisco has a large and growing business in cut-flowers from under glass, and investment therein is justified. It also shows that the Los Angeles district depends so much upon open-air cut-flowers that the business in higher-class glass stock can be developed only at considerable risk, and it is therefore neglected. San Francisco ought to be glad enough of its commercial development to honestly exalt it, and not try to play false pranks with it. Besides, it is not a good commercial policy to try to ruin the joyful business of those who buy stock from you. Once again, a great metropolitan journal ought to be above sectionalism and provincialism. It ought to admire a resourceful, progressive spirit manifested anywhere in California.

planted, they should be shaped up well now—sometimes cutting well back into the old wood to get good form and strength in main branches. An almond tree should surely be well pruned for three years and some claim it should always be pruned—but most growers have not brought themselves to that conviction yet. No doubt many rangy, wind-broken trees and trees full of dead wood or weak brush are the result of the non-pruning doctrine which is too often applied to the almond.

Irrigating Sweet Potatoes.

To the Editor: Do sweet potatoes need much irrigation? My sweet potatoes most all went to vines and long roots. They were in sandy soil. I thought perhaps I had watered them too much. —A. P., Red Bluff.

You probably did. Sweet potatoes may need irrigation and they may not: it depends upon how much natural water there is available in the soil in which they are growing. On moist river lands, they often not only do not need irrigation but do better if planted on ridges from which they can reach down and get the moisture they need. On the fine upland loams where most of the crop is grown they are often irrigated, but not so as to flood the surface but in furrows which place the water under the plant to be used as desirable. Try it again and do not irrigate so long as the plants make good growth of vines and have good fresh-looking leaves. If they show signs of stopping growth and of making too small leaves give them some water.

Onion Sets in California.

To the Editor: Which is the best time to get the best results from dry onion sets?—M. B., Novato.

In California valleys it is possible to get mature onions at nearly all times of the year by starting with the seed about five or six months ahead of the desired maturity and making the crop either with field-sown seed or small seedlings taken to the field from seed beds. As the onion does not object to light frosts the early onions in June come from seed sown in the preceding autumn and later onions from winter and spring sown seeds are transplants. Onion sets are particularly useful in places where winter temperatures are too low because you can start later with them and catch up with plants from earlier sown seed. Probably they can be used to best advantage in February and March, but they are not largely employed in this State. We grow sets chiefly for shipment to the Southern States for their early crop.

Grapes on Alkali Spots.

To the Editor: Last spring I set out 5 acres of Muscat vines. All started and some made a tremendous growth; others, in alkali spots, put out a few leaves, then died. I intend to reset this spring and want a Muscat budded on something that will withstand the alkali, such as Malaga or something else. What root will be best? Also, will it be worth while to dig out a pretty good hole and haul some sandy soil in to start them in alkali spots?—L. C. M., Selma.

It depends upon how strong the alkali is and whether there is hardpan which holds alkali water up for evaporation. Grapes will stand some alkali if the water can get through. We know of no grape root which will stand bad alkali. The Malaga has the reputation of standing more than the Muscat. If you can get a hole through an alkali pan and water can escape, it will help to start the vine to make and fill a hole as you describe. But if you cannot change conditions below, the improvement will only be apparent and temporary.

California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agricultural Weather Bureau at San Francisco, for the week ending at 5 p. m., January 9, 1917.

STATIONS	Past Week	Rainfall Data		Temperature Data	
		Seasonal To Date	Normal To Date	Max'm	Min'm
Eureka	1.30	13.52	18.64	51	36
Red Bluff	1.50	11.46	11.09	60	32
Sacramento .....	.36	6.52	7.89	56	30
San Francisco .....	.56	9.68	9.29	60	40
San Jose .....	.33	6.29	6.85	60	30
Fresno .....	.86	4.73	4.05	58	32
Independence .....	.....	.....	.....	.....	.....
San Luis Obispo .....	.10	13.80	7.25	70	34
Los Angeles .....	.30	7.50	5.87	76	40
San Diego .....	.06	3.03	3.64	72	42

By
the Editor

QUERIES AND REPLIES

Inquirers Must
Give Full Name
and Address

Killing Plants with Gasoline.

To the Editor: In the Pacific Rural Press of Nov. 4, 1916, I note you suggest the use of gasoline in killing out "lupus." Do you advise using gasoline in the same way for killing morning glory? If so, how deep would it have to be applied and would the ground have to be dry when application was made? If the gasoline used should strike tree roots, would it kill the tree? —M. S. D., Lafayette.

We suggested trial of gasoline for killing weeds with big tap roots because experiments have shown that tree sprouts or seedlings can be killed by pouring gasoline around the crowns so that it will follow such roots a certain distance. In such cases gasoline has killed the outer or growing layer and the plant has perished. Of course such suggestion does not apply to fibrous-rooted plants. To kill them all the ground would have to be saturated with gasoline, and that if effective would be too expensive. A more reasonable treatment for plants with such roots would be the use of carbon bisulphid which has been advertised from time to time in our columns by the manufacturers. They probably have testimony which would be interesting to anyone desiring to try this method and which would determine the condition of the ground which favors such treatment. We have seen no demonstration which would give us original knowledge of the subject. Presumably such treatment would attack all kinds of roots which intrude into the killing area.

What to Do with a Winter Pond.

To the Editor: There is on my ranch a depression which I have to plant to fruit trees. This is 1000 feet long and from 20 to 100 wide. Water stands there from December to April, and the water level is but 18 inches below surface about June 1st. The use of drain tile seems impracticable on account of the low grade. Do you think it can be effectively drained by blasting? The subsoil is hard granite, found at 4 to 6 feet deep. What would you plant on said land?—F. C., Newcastle.

You will have to take some time to study this proposition. It would probably not do any good to blast in the way soil-blasting is usually done because that would have no effect on underlying rock. If you know which way the water moves from the depression now, you can prospect that

place for a rim or crevice and widen and deepen that by excavating and rock-blasting so that water would not be held back. If you do not know that, watch next summer for a place where the weeds keep green late and put an open prospecting ditch into the depression that way, and see if there is any chance for effective blasting. We apprehend, however, that getting drainage would cost more than the land is worth. It is not now suited for any kind of fruit. You ought to be able to get a fine lot of summer and fall vegetables by planting as soon as the surface becomes workable.

The Souring of Figs.

To the Editor: I have a row of fig trees on one side of my ranch and the fruit sours quite a good deal every year. They are close to a main canal where the water runs all summer. Would too much water be the cause, or is the ground sour? Would an application of lime do any good? If so, when and how should it be done?—G. S. B., Chowchilla.

So far as we know, the causes of fig-souring have not been definitely demonstrated. Growing conditions may promote or repress it and one has practically full freedom for conjecture, until demonstrations are reached. It seems to us, however, more rational to seek the cause in the aerial environment of the tree rather than in the soil and water, and the behavior or internal functioning of particular varieties has perhaps more to do with it than any environment. These are the things that need to be demonstrated. We do not know whether lime would do any good or not. It may be worth trying—if only for the relief of your conscience. Whiten the ground thoroughly now at the rate of 500 lbs. to the acre so the rain will carry it into the soil and put on as much more before working the soil toward the close of the rainy season.

Pruning Young Almonds.

To the Editor: Do almond trees of two years' growth need pruning?—B., Red Bluff.

They surely do. If they were pruned right a year ago and are low-headed and sufficiently branched, they should now be cut back about half the growth they made last summer, to get shorter joints and stronger shoots this year. If they have not been pruned since they were

Grape Mealy Bug and its Control.

Crops of vineyards in the Southern San Joaquin Valley have been made unmarketable by the mealy bug. Learn to recognize and control this menace before it becomes widespread.

[Written for Pacific Rural Press from data presented by R. L. Nougaret of U. S. Dept. Agr. at Napa Fruit Growers' Convention.]

Have you noticed drops of honeydew on your grapes when about ripe? Have your Muscats or Thompsons unaccountably stuck to the trays? Have you found drying raisin grapes infected with green mold when you turned them? Have you found white silky eggsacs, waxy white cast skins, small cocoons and mealy looking bugs at the tips of fruit spurs, under the bark, or in the bunches of grapes? Have your table grapes been sticky and repulsive with these remnants of a new grape pest? Have you seen the short-lived adult female about one-fifth of an inch long with dull white waxlike threads around the body, four of which appear like a tail?

One vineyard of 2½ acres of Malagas in Fresno was so filthy with these troubles that for three years the crops were sent to the wineries. Last year the trouble was reduced by spraying so that practically the whole crop was sold for table grapes.

It is the mealy bug. It has been serious on grapes in California only very recently. It has been commonly found in Fresno and Kings counties, and to lesser extent in Tulare, Merced, San Joaquin, and Tehama counties. Since it has been found on pears in Sacramento, Contra Costa, and Nevada counties, it is likely on grapes there also.

In 1915, in co-operation with Horticultural Commissioners Fred P. Roullard of Fresno and Fred K. Howard of Kings county, the U. S. Dept. Agr. began experiments to find a means of controlling the pest. R. L. Nougaret, the phylloxera and pear thrips investigator, was put in charge. The writer of this article was present when the first mealy bugs in a Kings county vineyard were discovered by Mr. Howard in Sept., 1915. Control measures fairly satisfactory have since been worked out, but the investigation will continue.

How to Find Grape Mealy Bug.—The larvae, smaller than a pin point, live over winter under layers of bark, also in crevices and cracks of the arms and head of the vine.

In the first warm days of spring, about late March or early April, when sap flow begins, they get a move on. They can be seen with the naked eye on a hot sunny day following a period of warm weather, by the contrast of their light color against the dark wood. The best place to find them is at the tips of spurs. In pruning, the bark on one side of a spur is slightly bruised and loosened by the bar side of the pruning shears. Under this bark the active larvae settle in numbers. Later as they grow, "they wander away to scales of buds, and other scales at the base of young shoots, and even onto young leaves." They mature in June and lay eggs in June and July. About 125 light orange-colored eggs are deposited in each ovisac of white silky threads. The ovisacs as observed by Mr. Nougaret on badly infested vines are about 65 per cent in the bunches of grapes,

mostly of the first crop, 20 per cent in folds of dry leaves fallen to the ground, under clods of earth, and in soil crevices, 15 per cent on the vine itself, of which four-fifths are on the head and arms, and one-fifth under strips of bark on the trunk. The ovisacs are generally hidden. This generation matures in September. While growing and mature they attack the grapes among which most of them have hatched. They suck large quantities of sap from the grapes, etc., and excrete sweet sticky colorless honeydew. This is what sticks raisins to trays and furnishes food for green mold. The larvae cast their skins in growing. These cast skins, egg sacs, and honeydew make grapes unmarketable if abundant. The larvae maturing in fall, lay eggs in September and October, which hatch into the overwintering larvae.

Control.—"Spraying is the only practical means of control on a large scale," says Mr. Nougaret. "The best time to apply the spray is when the young larvae forsake their winter quarters and settle in more accessible places. This may be all at once or it may occur intermittently for one or more weeks. Our experiments demonstrated that the most propitious time to spray, using the formula below, is when the young shoots of the vines are four to six inches long for Malagas and Emperors, and somewhat shorter for Muscats." The "blossom forms" of vinifera varieties are not injured by the spray. These "blossom forms" are the buds up to the time the individual blossoms separate with each on its own pedicel just before blooming. Up to this stage, they have a resistant secretion and a hairy mat which protects the buds from a spray which burns the young leaves.

Deciduous Frost Fighting.

To the Editor: Are smudge pots sufficient to keep frost away from almond trees in Calaveras county? Where can I buy the pots, what do they burn, how many are needed per acre?—D. M. N., Wallace.

They are efficient if kept filled with oil and lighted at the proper time; you can buy the kind used for deciduous trees from a firm which has been advertising in Pacific Rural Press for some weeks; they burn crude oil. We reprint part of Andrew Ryder's experience in Placer county. He prefers 75 two-gallon pots per acre, set in the centers between trees. The larger pots burn 12 hours without refilling and furnish more heat. One-gallon pots burn about eight hours. If two frosty nights come in succession, the men are tired enough without refilling before the second night. Labor of refilling large pots is reduced, painting and storage costs are less than with the usual 100 one-gallon pots per acre.

Oil is bought by the carload of 10,000 gallons, very cheap, and stored in a 2500-gallon reservoir for

The spray recommended is made by mixing thoroughly 4½ gallons of 34° to 38° B. distillate oil with 1½ gallons cresol soap by pouring the former slowly into the latter and adding three or four gallons of water, stirring all the while. This mixture is poured slowly into the spray tank containing about 190 gallons of water keeping the agitator busy.* If hard water must be used, add one or two pounds of good soap powder containing a high percentage of soap.

Use at least 175 pounds pressure and a nozzle with a small orifice and narrow stream. Hold the nozzle close as possible to all pests of the vine to cover every inch and penetrate crevice, crack, and fold of the bark. Touch the tip of every spur with the nozzle, to shoot the spray direct into its cracks and under the bark. Direct spraying of the shoots is unnecessary, since the foggy cloud will rebound and coat the shoots. With high-headed vines, the lower part of the trunk does not harbor so many of the bugs.

Results.—The best definite results, aside from the small vineyard mentioned, were computed as an 80 per cent kill. This was obtained on Malagas sprayed when 60 to 80 per cent of shoots were four to six inches long, with three to five small but developed leaves besides the terminal bud.

Muscats sprayed when 50 to 60 per cent of the shoots were one to two inches long with two leaves unfurled besides the terminal bud, showed good effects, but had been sprayed too early to get the later-appearing larvae.

Tokays sprayed when buds had begun to swell, but very few had burst open, were frosted three weeks later, so the kill was not computed.

In all cases the leaves were burned but the fruit buds uninjured. Growth of shoots was delayed for three or four weeks, but at the end of a month the sprayed vines seemed as far ahead as the rest and the crop seemed not to have been injured except possibly the second crops.

his 10 acres. An automatic frost alarm rings at 34° F. and the oil is lighted soon or late according to rapidity with which the temperature has been falling. A home-made torch of gaspipe with a plug of cotton waste or lamp wick is made, to hold kerosene which supports a flame. A little gasoline is squirted onto the crude oil in each pot to get it started quickly. An extra line of pots should be placed just outside the orchard on the side from which air currents come on frosty nights. Temperatures can be raised several degrees in an hour if the air is still.

These pots are intended to produce a smudge, as well as heat which the smudge holds down, if it doesn't blow away. The smudge doesn't hurt deciduous trees as it would citrus foliage and fruit. In citrus districts they use pots which burn with very little smoke.

Lemon trees blooming and orange twigs sprouting in the midst of winter weather with frosts every night for a week, is a peculiar condition in sheltered spots in Tulare county.

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Drakes and Nonpareils for Pollenization.

To the Editor: In the Rural Press of Dec. 30 I note the query of I. O. R., San Francisco, regarding pollenization of almonds. Your answer would not be conclusive and satisfactory to me were I asking the question. For instance, you advise mixing by grafting different varieties on the same tree and then caution him about mixing these varieties when harvesting. Those are hard lines to follow and with your kind permission I will advise I. O. R. in my own particular way. There has been a great deal written from time to time in the Rural Press concerning cross-pollenization of almonds and no one as yet has hit the right line of thought, according to my observation and experience. All seem to recognize the necessity of difference in varieties, but none seem to have grasped the ideas that the greater the difference the more successful the results. Consequently a perfect cross-pollenization would be a bitter hardshell with a sweet paper-shell. I know that such a cross brings the very best results other than that the bitter nut is not profitable, consequently is not to be considered. The next in line would be a sweet hardshell and a sweet paper-shell. With this cross you will get almost as good results as with the bitter nut, but again the hardshell is not a seller. About the hardest shelled nut that the trade will take and class as a softshell is the Drake Seedling, and absolutely the softest shelled nut we have is the Nonpareil, which is strictly a paper-shell. Not only do the Nonpareil and Drake differ greatly in shell, but they also differ greatly in style of growth and

general appearance of tree and blossoms. However, they both bloom about the same time, which is of course necessary. They ripen at different times, the Nonpareil being an early and the Drake a late variety. Eliminating theories, when these two varieties are planted together in alternate rows, the results are all that can be desired. Drake Seedling and Nonpareil I consider the one best bet. Consequently, my advice to I. O. R. would be by all means to graft his I. X. L.s—all of them—into Drake Seedlings. True, as you have said, Nonpareils and I. X. L.s are high-priced nuts; but price doesn't cut much figure if you have none to sell, and these two varieties planted together will not produce, more especially so as the trees grow older. The difference in price between the I. X. L. and Drake is more than made up in the difference in weight between the two varieties, the Drakes weighing about 20 per cent more than I. X. L. One year with another they will bring in more money than any other variety I have ever handled. The only good cross I have ever found for the I. X. L. is the Jordan Hardshell. The I. X. L. and Drake would make a very good cross if they bloomed closer together. As it is, the I. X. L. is a big help to the Drakes, but the Drakes do not return the favor to a very great extent. The reason for this is, I presume, that when the Drakes bloom there is still plenty of pollen in the I. X. L. to help them, but before the pollen in the Drakes becomes active the I. X. L. are past pollenization.

F. L. Gordon.
Suisun.

Lemon Gummosis Notes.

[Written for Pacific Rural Press.]

An insurance against gum disease and scaly bark, and a great help in keeping lemon trees healthy, is Bordeaux paste, according to the experience of L. G. Duval and Joe Southwell on the G. C. Powers ranch in Ventura county—also their observations in neighboring orchards.

Some of the Powers lemon trees were painted in 1914. The bark looked sunburned and cracked. In 1915 it did not seem necessary to repeat the application because the bark had freshened and become green and healthy. Last summer another "painting" was given. Spring application is preferred.

A neighbor had 20-year trees which two years ago had "an awful dose of gum disease," the bark was peeling off, and the trees going backward. He painted with Bordeaux paste, and now a fine growth of healthy bark is pushing off the old.

Mr. Duval was afraid to apply it to one-year trees so he asked Prof. H. S. Fawcett, who has recommended the paste so generally for gum disease, but Prof. Fawcett said to go ahead.

The Powers trees are painted from below the bud union to three feet up the trunk to prevent gummosis and to keep moss off in this region of much ocean fog.

Gummosis has been observed nicely started where distinct hoe cuts had been made in the bark at the

previous hoeing. Only Bordeaux paste can be relied on to prevent this, either by application when the wound is made, or by scraping off all diseased bark when discovered, and immediately painting the surface.

DATTIER DE BEIRUT.

To the Editor: I have some Dattier de Beirut grapes grafted on Zinfandel, which bear well; but too many small berries are intermixed in the bunches. I stake and prune them like Malagas. Is there any known way to increase the size of the berries? The bunches are large enough.—A. R. P., Dinuba.

[Answered by Prof. Frederic T. Biondetti, University of California.]

The production of small seedless berries is a common and very bad fault of the Dattier de Beirut. This defect is intensified in the cooler regions and in cool seasons, and it does not seem to be diminished by grafting on any stock that we have tried. It is possible that it may be counteracted by some method of pruning, cultivation, or irrigation, but so far we have been unable to improve the variety in this way. This year, the grapes were very good and almost free from this defect at Kearney, but in other places, where we have this variety growing, it is as bad as ever. The variety is probably suited only to the hottest regions.

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Cherry Gummosis May be Prevented.

[Written for Pacific Rural Press.]

Gumming is simply thickening of exuded sap by exposure to air. The sap may exude for any of several causes, but one cause has been found, definitely in Oregon, to be due to bacteria. It seems worst at three to five years after planting the trees, and on the trunks or main limbs. It works under the bark, spreading far sometimes before breaking out. This characteristic has been noted on many trees in the Vacaville district and on old trees too.

The affected area quits growing, at least temporarily, and the growth all around it leaves a depressed "canker" later on. Often the bark hardens and cracks. Often, too, the trees recover naturally by growth of green bark over the affected areas.

In the bacterial disease, H. P. Barss of Oregon notes that it is most active late in winter and early in spring. By removing the outer bark from a rapidly spreading canker, the inner bark and even some of the wood are shown dead and discolored in the center; but away from center the discoloration is not quite so deep and at the margins of the canker, usually only the outer layers of bark are affected. Diseased tissue is permeated with gum which collects in the pockets under the bark, with pressure.

For Control, Prof. Barss recommends resistant stocks such as Mazzard, grafted with desired varieties into the branches, to get resistant trunks. Lambert has seemed more resistant than Royal Ann or Bing. He also recommends cutting out diseased bark and wood, sterilizing it with corrosive sublimate 1-1000, and covering exposed wood with grafting wax.

F. B. McKevitt writes:

"So far as I know, no remedy has been found for gummosis, which is especially bad in some seasons and is sure to be bad on low and poorly drained soil. I have found it good practice to cut out the spots of gum and to follow up the streaks in the bark secreting the gum, to a point where perfectly sound and good bark is struck. After having thoroughly cleaned the gum away, the wound should be coated with hot liquid asphaltum. In many cases this will temporarily, at least, give relief."

J. J. Fox, Horticultural Commissioner of Napa county, has noted gummosis on heavy soil showing up about the 5th year. He recommends similar treatment. A successful Santa Clara grower says, "The best treatment I have found is keeping a good cultivation and splitting the bark carefully." G. W. Worthen, also of Santa Clara Valley writes, "For gummosis, slit the bark longitudinally on north side of tree and apply lime-sulphur wash."

San Jose Scale is reported from Oregon as a cause of unthrift and excessive gumming. Says Prof. A. L. Lovett of O. A. C., "The base and main crotch of the tree and the outer limbs should be examined very carefully for scale, which, to the casual observer, will appear as small grayish or blackish specks scattered over the bark. A heavy infestation of the San Jose scale ap-

pears not unlike wet ashes spread over the bark. Where such condition occurs the back of the thumb nail should be drawn across the bark, when, if there is a yellow, oilish exudation, you may rest assured that the scale is present. For this pest there is nothing better than the early spring application of the commercial lime-sulphur spray. This spray should be applied in the spring just as the buds are opening, and before the leaves put out, using it at the rate of one part of the commercial lime-sulphur to ten parts of water. It is advisable to add the commercial black-leaf-40, a tobacco spray, to this commercial lime-sul-

phur, as by this practice one may also control the plant lice which are usually present on the tree in the spring. This should be used at the rate of one part of the black-leaf-40 to eight hundred parts of the lime-sulphur as diluted ready for spraying, or at the rate of two table-spoonfuls of black-leaf-40 to twelve and one-half gallons of the lime-sulphur spray solution."

PLANTING FIG CUTTINGS.

To the Editor: Would you advise placing fig cuttings in orchard form instead of rooted trees? Would there be any time saved, or would it be as well to start the cuttings in a bed and transplant when one or two years old? Young trees are not available in our locality this season?—W. A. A., Ceres.

Plant only rooted trees in or-

chard form. Your stand cannot be too good and it should not be bad, as it might be if you plant cuttings. Root your cuttings in a propagating bed for a year and get the use of your field for crops that will either fertilize and subsoil it, as alfalfa or sweet clover, or root crops, etc., by which it will be worked into good condition for the trees.

George H. Hecke, Horticultural Commissioner, plans to extend and enlarge upon the work of his department in various ways, the appointment of two additional field men, one for the north and another for the southern part of the State, being among his aims. He also hopes to appoint an assistant to Harry Smith, Superintendent of the State Insectary.

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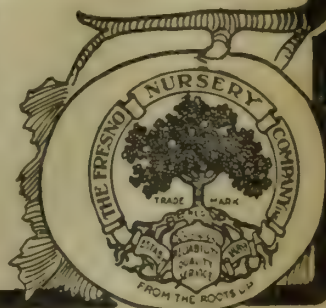
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Siloed Milo Stalks Replace Hay.

[Written for Pacific Rural Press.]

That the silo may be used to preserve a lot of material that would ordinarily be plowed under or burnt is shown by the experience of J. S. Moore whose ranch is located between Ripon and Manteca.

During the past fall Mr. Moore had a field of milo maize stalks, left after harvesting the heads for grain. As he was short of other filling for his 100-ton silo, he decided to try siloing the dry stalks for winter feed.

As the material was well dried out, it was necessary to run a stream of water into the cutter continually; and it was thought doubly important to do a good job of tramping. For that purpose a young colt was used in the silo instead of a man, his small, sharp hoofs packing the silage down in good shape. When the silo was filled he was hoisted out of the top with a block and tackle.

Regarding the feeding value of this stalk silage, Farm Adviser Frank Lyons says that Mr. Moore reports his milk flow equally heavy as it has been at other times of the year, notwithstanding the cold and wet weather which has been general since silo-feeding was started.

But of course the biggest value has been in the saving of other feed, the ration fed to the large Holsteins varying from 25 to 30 pounds of silage with all of the chopped alfalfa hay the cows will eat. The amount of hay also varies with the individ-

ual cow, but probably does not exceed 15 pounds in any case. It is fair to assume, therefore, that two pounds of the stalk silage is proving the equivalent to one pound of chopped hay. As to the cost of the silage, it has been the general experience of all of the silo owners in San Joaquin county that a dollar a ton covers the cost of cutting, hauling, chopping, and tramping silage. As the milo field had already been harvested and the stalks would otherwise have been plowed under, no charge, other than the harvesting and siloing, can be made per ton for the silage.

When Mr. Moore built his silo, his barn was an old one and not fitted with a feeding alley in front of the mangers, thus making the feeding of silage inside the barn an almost impossible task. To overcome this objection two rows of stanchions and mangers were built adjoining the silo. These are in the open corral. While they would be better if they were covered with a roof, they simplify the work of feeding to a considerable extent.

Another profitable use which Mr. Moore gets from his silo-filling machinery is the chopping of all hay before feeding. This not only makes a direct saving in hay, because of the small amount left in the mangers, but saves storage room as well, three tons of the chopped hay being stored where but one of loose hay can be cared for.

Rye Prevents Sand Blowing.

[Written for Pacific Rural Press.]

In a new arid country such as is still being tamed in many parts of California, there are many unusual problems to be solved. Not the least of these is to provide humus and stop the removal of farms by wind to the neighbors who do not want them. Blowing sand covers grain and alfalfa crops and cuts leaves from plants and young fruit trees.

Such a situation may be found in a certain valley of Los Angeles county which is only recently being reclaimed from the desert. Grain crops, principally wheat, had dwindled to 5 or 10 sacks per acre.

A student of conditions is Donald Graham of this Valley, and he has a "very efficient" solution. "This country lacks humus," says he. "Everything cries for humus. We have disked straw into the dry soil in the fall, but sand cut the leaves from young trees."

The wind blows from the southwest every afternoon from winter till July. Most of the heavy rains come in January. No rain this year since about an inch in October.

In the spring of 1915, Mr. Graham plowed in January, and sowed rye late that month and early in February at the rate of 20 pounds per acre. This did not make heavy enough growth and this year about 40 pounds of seed were used per acre. Seeding in November was tried in 1915 and the crop plowed under in March. At that time Mr. Graham said he would prefer sowing in October. Last fall 160 acres were sown solid, including 60 acres of fruit trees planted last year. The

100 acres will all be turned under in the spring, but in each row of fruit trees a six-foot strip will be left all summer, running as the water runs to avoid furrowing complications. The first year the strips were left north-and-south; the next, east-and-west with equal effectiveness. The seed was sown very deep and no irrigation given, but the October rains had brought it up about an inch tall. No irrigation is planned before turning the rye under. The strips will be left until fall when they will be disked and cultivated but not plowed, and sown again at once. The only objection is that coyote grass, tumble weeds, and Russian thistles are likely to require special attention; but prevention of sand blowing and addition of humus far outweigh this.

FOXTAIL-ALFALFA HAY.

To the Editor: Foxtail is so thick in alfalfa here that many are burning the first crop. Is it possible to cut it before the foxtail gets ripe, and would it make good hay if cut green?—E. M., Winters.

First-crop alfalfa badly mixed with foxtail makes better hay if cut before the foxtail gets ripe, but at best is rather poor. However the manager of a large ranch in Santa Clara county tells us that first-crop alfalfa mixed with foxtail made better silage than pure alfalfa. He had tried it.

One of the most encouraging things about sorghums is the success resulting from head-selection in the field.

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Indian Corn in the Delta.

[Written for Pacific Rural Press.]

In 1915, Chas. B. Smith's 85 acres of yellow flint was the only Indian corn raised in his district of the delta land in San Joaquin county. In 1916 there were about 500 acres. In 1915, it cost over \$30 per acre to sack and deliver Mr. Smith's 60-bushel crop to town. In November, 1916, he was expecting to sack and deliver his 70 to 75 bushel crop from the same land for not more than \$25 per acre. In 1915 about two inches of grain was eaten from the ends of the cobs by worms. This year it averaged less than an inch. In 1915, the hoeing that he gave the corn cost \$7.00 per acre. This year it cost \$1.70 per acre. In 1915, the kernels on the ears were shallow; this year they averaged considerably deeper. In 1915, it cost a lot to raise the crop; for Mr. Smith was inexperienced.

Seed Selection.—Much of this year's improvement was due to personal seed selection. In the fall of 1915, seed was selected for its depth, early maturity, and heavy yield per stalk. Early maturity has the advantage of being ready to husk that much sooner. This year when seen early in November, the stalks were dry and Mr. Smith hoped the corn would be dry enough by November 15 to husk into wagons and throw directly into the crib. Earlier corn is still sought by seed selection.

Flint was chosen rather than dent because, he says, flint hardens earlier in summer and prevents the worms going down so far on the ear.

Last fall about Nov. 1, some Mexicans were husking part of the corn for tamale shucks and throwing the ears on the ground. Already many of the best of these and other early ears had been laid out on the crib floor to dry more perfectly. This was later to be re-selected by Mr. Smith for seed for 1917.

As it stood then in the field, 10 to 12 feet tall, a thick heavy stand, with two ears on each of a large percentage of stalks, it was surely a pretty sight. Most of the ears were smaller and the kernels shallower than the good dent corn of

the East, but one ear not greatly larger than the average had 14 rows of solid kernels and was about a foot long.

Cultivation.—After sheep had eaten considerable of the fodder of the 1915 crop, a stalk cutter was run over the field and a rolling coulter put in front of the plow. The land was plowed in March. Mr. Smith believes it should be plowed in winter and again in spring just before planting. The chopped stalks were turned under 9 inches deep last spring, and did not bother the cultivators.

Seed was planted, 8½ pounds per acre, finishing about Apr. 20. Mr. Smith wishes to emphasize the advantage of "checking" it in, 42x42 inches instead of drilling. This is to give the stalks more room, and to permit cultivation both ways. A bean planter was used the first year. Four cultivations and one hoeing were given. In July when the corn was commencing to tassel was when it needed water, which was supplied through ditches a spade wide and a foot deep 150 feet apart. The sediment-peat soil is such here that it is readily subirrigated. When the ground is too wet, the surplus water is pumped out with an electric pump.

Rotation with Beans and Potatoes.—Corn needs the same growing moisture as pink beans, according to Mr. Smith; and he wished to emphasize the fact that while his second crop on the same land was considerably better than the first, he intends to plant beans on this piece this year and potatoes in 1918, for he does not want to kill the goose that lays the golden (corn).

Mr. Smith believes that the price of corn in California must drop when we produce all we use for ourselves, because we always have been paying enough to get Eastern corn and also pay the freight on it to the Coast.

A. Frederick Hinz, pioneer rice miller, who introduced rice culture in California, died last week at the age of 74 years.

NO PLUMS ON THE FARM LOAN TREE.

Last week we briefly outlined the way in which the district farm loan banks were to be organized. On January 7 the following declarations were telegraphed from Washington:

The Farm Loan Board announced tonight its determination to eliminate politics entirely in the selection of the men who are to set up and operate the new institutions—the Farm Loan Banks. The board's statement, explaining that pressure is being exerted for the appointment of men of party influence, particularly Democrats, says:

"It may be stated without qualification that these jobs will not be handed out as political plums. The only consideration which will be taken into account is that of merit, efficiency and ability. There is no division of opinion among the members of the board as to this principle."

For each bank the board is to name five directors, from whom a president, secretary, treasurer and vice-president will be chosen as managing officers. In addition, there will be for each bank a registrar to act as fiduciary agent of the Government. The board announces that in making these appointments every effort will be made to get men whose fitness will commend them not only to farmers who must borrow money, but to investors, who must look upon the farm loan boards as safe and prime securities if they are to buy them and accept a low rate of interest. Secretary McAdoo has addressed the Governors of all states, urging that they recommend to their respective Legislatures the enactment of laws to make farm loan bonds legal investments for trust funds and savings banks where such laws are necessary.



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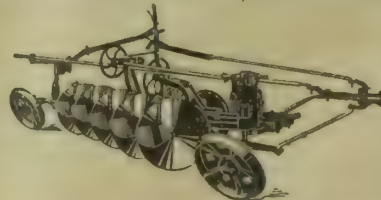
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Accident Liability of Ranchers.

To the Editor: If a rancher hires a man for a few days to do any kind of ranch work that may come up, and this man gets hurt while doing the work, such as losing an arm or an eye, is the rancher liable for damages? The man may have been hurt by his own awkwardness.—W. T. J., Shawmut.

[Answered by A. J. Pillsbury, Chairman of Industrial Accident Commission.]

The farmer is liable in damages for any injury to a workingman in his employment if the injury happened in the course of the employment, where it can be shown that it resulted from want of ordinary or reasonable care on the part of the employer or any agent or servant of the employer. The fact that the employee was himself guilty of contributory negligence does not bar recovery where his contributory negligence (awkwardness) was slight and that of the employer was gross in comparison. And in such cases the damages may be diminished by the jury in proportion to the amount of negligence attributable to such employee, but it is conclusively presumed that such employee was not guilty of contributory negligence in any case where the violation of any statute by the employer or his agent or other employee contributed to the injury. The only statute which an employer can violate is the one requiring employments and places of employment to be made safe.

Therefore, to sum the situation up we may say that whenever a farmer employs a hired hand he is responsible in damages if the hired hand is injured because the farmer did not give him a safe place to work or safe tools to work with or he was injured through the employer's negligence or the negligence of any member of the employer's family or any agent of the farmer or any other employee of the farmer. In short, the farmer is liable unless the employee was injured through his own inexcusable negligence, and the measure of the liability is whatever the jury may determine to be the damage done.

Now, there is another law known as the Workmen's Compensation Law which puts employer and employee in very different relations to each other as to injury. Under the Compensation Law the farmer is responsible for all of the injuries which his employee suffers while in the course of his employment without

regard to anybody's negligence. But the liability is fixed in advance at 65 per cent of the wages and medical and surgical treatment while the employee is laid up as a result of his injury or at three times his average annual earnings in the event of his death, leaving dependents. Up to the 8th of December, 1916, there were 11,710 farmers throughout California who had voluntarily accepted the compensation provisions of this Act. That is, they elected to be under compensation rather than under the law of damages based upon the negligence of the farmers or others in his employ, with the jury to assess the damages at anything the jury minded to assess. Practically all of the larger farmers of the State have seen the wisdom of coming under compensation and it is the belief of the Industrial Accident Commission that it would be wise if all the farmers came under compensation where the responsibility would be fixed in advance; they would be saved from law suits, and insurance costs no more for compensation than for liability against damages, and under either law, no prudent farmer will go without insurance.

Insurance coverage against all liability amounts to only \$1.50 on each \$100.00 of wages paid, not including the value of the board. That is, if a farmer pays an injured man \$25 a month and board, or \$300.00 a year, it will cost him \$4.50 in addition to insure him against all liability for injury and to make it certain that his employee, if injured, will be taken care of without any cost to the farmer beyond this \$4.50, and it will make no difference to the farmer whether he has one man for a year or twelve men for one month, the insurance coverage will be exactly the same.

In view of the fact that, at this writing, there are scattered throughout the State over 12,000 farmers who are operating under the Compensation Law and are satisfied with it, the time seems ripe to so amend the Act as to bring the rest of the farmers in. The Legislature will be asked to so amend the Act at the coming session and the Commission does not anticipate that there will be any serious objection to so doing. Under this law both farmers and their employees will be protected, if insured, and the cost of insurance will not be burdensome.

Gypsum for Alfalfa.

To the Editor: Regarding the use of gypsum and sulphur on alfalfa: Would it be better to mix sulphur and gypsum or use gypsum alone? How much shall I sow on heavy land on three- and four-year alfalfa? What is the right time of year to sow? What will it cost per ton?—Sub.

In June 27, 1914, issue, we printed a report of Prof. F. C. Reimer's experiments in Oregon, from which we gather that since gypsum contains sulphur, gypsum alone will be sufficient in your case. Apply whenever it will be carried down to the soil about the roots with rain or irrigation, but when there is but little danger of its leaching or being washed out of reach of the roots.

Use about 1000 pounds per acre. It is quoted now at \$8 per ton f. o. b. San Francisco in less than carload lots, with \$1 per ton rebate if sacks are returned in good condition.

It is said that the income of the ranches in the trading district tributary to Tulare for the year of 1916 has been estimated at \$2,000,000. Records of the creameries show that during last year the dairymen received \$986,000 for their butterfat. The grain crop marketed is put at \$422,000. Poultry products are put at \$250,000 and the shipment of stock and dairy cattle is put at half a million more.

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PLUNGER PUMP COUNTER-BALANCE.

In your issue of Oct. 16, 1915, there appears a very interesting description of a deep-well plunger pump, which for the quantity of water delivered and lift overcome, apparently consumes a very economical amount of power. This being a question of vital interest in this country where wells are deep and water has to be lifted all the way down to 100 ft., I would like a little more detailed information on this subject.

[The pump in question was raising water 80° to 90 feet. The plunger was attached to the end of a 3x12 plank, set edgewise at its center into the top of a post 6 or 8 feet high. On the other end were several bags of sand to help lift the water. Power from a small engine was applied to the plank about 18 inches from its pump-end, by means of a 4x4 whose lower end was attached to the wheel of a gearing run by the engine.]

The point I have in mind especially is the weight of the sand which is used at one end of the walking beam to help lift the column of water in the discharge pipe. Is there any advantage in making this greater than the weight of the pump rods plus what is required to overcome the friction of the water in the pipe? It seems to me that if the weight is made greater than this, the engine will be called upon to lift this greater weight on the down stroke when the column of water rests on the lower valve in the cylinder. Is that not correct? Now I have been contemplating installing a 12-in. diameter x 18-in. stroke cylinder which throws approximately 9 gallons per stroke, or on 30 strokes about 270 gallons per minute. My discharge pipe is 3½ in. which would give more friction than if I had a larger discharge. Under these conditions would there be any advantage to fix this pump up with a counterweight? I propose to set the cylinder down about 40 ft. Could the friction of this quantity of water in a 3½-in. pipe be overcome with the counterweight? The question of power is of course important in any country, but especially here where gasoline costs about 30 cts. per gal. laid down at the ranch.

As I have said, if there is any real reduction in the power required to run this style of pump it is of great interest to the settlers here, and this advantage may be great enough to overcome the extra care such pumps require in the renewal of leathers in the pumps. Another question I would like to ask in this connection is, whether there is any pump on the market with steel plungers and rings, similar to those in gasoline engines? If so is there any advantage in their use?—C. J. S., Stacy, Lassen county.

The object of the sand counterweight is to give the engine the same load on the up and down strokes. To do this, the weight of sand would theoretically be half that of the column of water plus the pump rod. Then, not considering friction, the sand would lift half of the weight of water and rod, while the engine would lift the other half. On the down stroke, the engine would lift the same weight in the form of sand on the other end of the balance beam. This reminds us, however, of putting a stone in one end of the bag to balance corn in the other end while the corn is being taken horseback to the mill. Double acting pumps may be obtained which lift water on both strokes, instead of sand on one of them.

GOVERNMENT SEEKS TEST FOR GASOLINE.

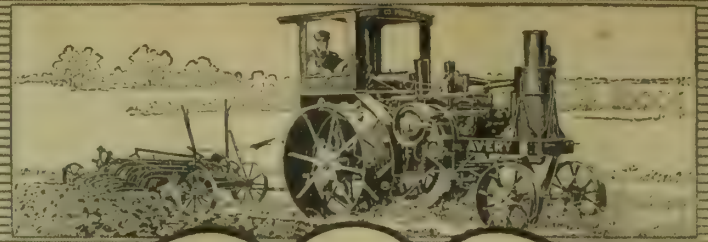
In a statement recently given out by the United States Bureau of Standards effort is made to correct two erroneous opinions generally held by the public regarding motor fuel. According to the report, specific gravity will not suffice as a check on gasoline when it is desired to gauge its value for use in motor cars. Just what is the proper test is still a matter of some doubt, and in this regard the report states:

"It seems most probable that the definition of gasoline will have to be based on the percentage that distills over between specified temperatures, when the distillation is carried out under specified conditions. This distillation test, speaking in non-technical terms, is a measure of the freedom with which the gasoline will vaporize. The gasoline must not vaporize too freely for two reasons—one that it would not be safe, and secondly, its loss in storage by evaporation would be too great. Hence, the specification may have to contain limitations of the percentage distilling over below a certain temperature, coupled, perhaps, with a proviso that certain percentages shall distill over below other fixed temperatures, in order that requisite amounts of low-boiling constituents shall be present to insure easy starting of an engine. Likewise the specification must contain a provision that all must distill over below a certain maximum temperature in order to exclude from the gasoline the heavier petroleum distillates, such as kerosene."

The report also informs the public that it must not expect the Bureau of Standards to take hasty action in formulating a gasoline test. It says:

"It is extremely important that we proceed with the greatest caution and in the light of the fullest technical information. There is only one way, or at most a very few ways, of doing the right thing, while there are an infinite number of ways of doing the wrong thing. A mistake of any kind, such as a specification that is unnecessarily restricted and which might unduly limit competition, will disturb economic and manufacturing conditions and might only result in imposing greater burdens on the consuming public."

"There are two aspects to the question under consideration, one local, the other national. There is no doubt that the advantages that would result from a satisfactory standardization of gasoline by the National Government are many. Not the least of these would be its influence on State and municipal legislation relating to this question, and its effect in making such legislation more nearly uniform throughout the country. Legislative bodies are beginning to take up this question, and much of this legislation is certain to be ill advised, although enacted with the best intentions, because it can not in the nature of things receive the careful consideration of technical



The Only Standardized Tractor Design

Avery Tractors are the only make built in five sizes (a size for every size farm) all having exactly the same design. There is practically no other make of tractors where there are more than two sizes of the same design.

When the Avery Company builds one size tractor and after thoroughly testing it out, builds another size, and then another, and then another, and then another, until it has five sizes of all exactly the same design, it is unquestionable proof of the success of that design.

Genuine Kerosene Burners

Opposed motor, strong crankshaft, renewable inner cylinder walls, patented sliding frame, all-gear transmission, no intermediate gear or shaft, no counterweights on crankshaft, no

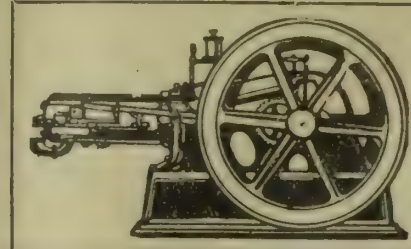
water pump, no fuel pump, no fan, no mechanical lubricator, no belts, no sprocket chains. Regular sizes 8-16, 12-24, 18-36, 24-40 or 40-60 h.p. and special 6-10 h.p. There's a size Avery Tractor and Plow to fit every size farm and a size Avery Thresher to fit every size run. The Avery Company has its own Branch Houses at convenient points, large repair shops and force of trained service men to serve owners of Avery Tractors. Write for a free copy of the new 1917 Avery Catalog and name of nearest dealer.

EVERY COMPANY
1800 Iowa Street
Peoria, Illinois



Tractors and Plows—6 Sizes—Fit Any Size Farm

We Are In Business To Stay



That ought to help convince you that we are mighty particular about the construction of **COMMERCIAL ENGINES**

We are building good pumping engines and a good reputation at the same time—so you see we can't afford to take chances by turning out engines that would in any way reflect discredit on the builders. Long after the cheaply constructed engines have been consigned to the scrap heap

Commercial Engines

will be on the job—faithful, steady and efficient.

Commercial Engine Co.

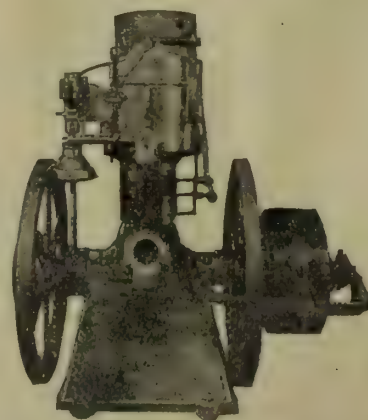
2424 Porter Street
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Branch: 1228 "H" Street
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With Gasoline at 4c per Gallon, an ordinary gas engine could not

produce power as cheaply as does the

Victory Oil Motor



This engine is made in California to operate on California asphaltum base oils. It has no valves, cams, batteries, or small working parts. No heating of fuel, no hot balls, and no torch required for starting.

Ask for our Rigid Guarantee.

Victory Motor Co.

Niles, California

Belting

That Must Make Good



When you buy a rubber belt you should know what service it will give you or have the belt service guaranteed by a responsible firm who will make good in case the belt falls down. Every belt-buyer should know how to judge a rubber belt, and we would like to send you a free sample of **Test Special** together with our folder that will tell you just how to judge a rubber belt so that you may know just what service you will get from any belt you buy.

Fill out the coupon and mail it to us and we will recommend a belt that we will unqualifiedly guarantee to do your work satisfactorily. We have had seventy years' manufacturing and selling experience.

NEW YORK BELTING & PACKING CO.
519 Mission St., San Francisco
Established 1846

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New York Belting & Packing Co.,
519 Mission St., San Francisco.

Send me samples of Belting that you will guarantee to give satisfactory service on my work and quote prices delivered at _____ Cal.

☐ Gasoline Engine
☐ Steam Engine
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Diameter { Driving Pulley _____
 in inches { Driven Pulley _____

Kind of Drive { Cross _____
 { Straight _____
 { Perpendicular _____

Width of Belt _____ Fly _____

Distance Between _____
Centers of Pulleys _____

Revolutions per Min. _____
of Driving Pulley _____

Kind of Mach- _____
inery Driven _____

My Dealer's Name _____

My Name _____

Address _____

Send pocket memo booklet giving speed and power tables will be sent FREE to all who mail this coupon.

**REDWOOD TANKS
SILOS**
Steel and Wood.
Windmills, Frames,
and Towers,
Water Troughs,
Prices the lowest.
BROWN & DYSON,
640 So. Center St.,
STOCKTON, CAL.

experts that is required for the satisfactory solution of questions of this kind. It will readily be seen that the effect of indiscriminate legislation might produce conditions nothing short of chaotic."

GEARING ENGINE TO PULL STUMPS.

To the Editor: I have a 2½ h.p. gasoline engine with 6-inch pulley on fly wheel, engine runs 500 revolutions per minute, 4-inch belt connected on a 20-in. pulley attached to a hoisting apparatus with a back gear of 6 to 1 on a 2½-in. shaft winding a rope. What pull will I have on this rope as compared with the draw bar h.p. of a team or tractor? I want to pull some peach trees that are too large for an ordinary team. Do you think this kind of an outfit rigged on a heavy wagon will do the work?—F. C. G., Atwater.

[Answered by Prof. J. B. Davidson, University Farm.]

The scheme proposed by the correspondent is an impractical one, as there must be a still further reduction of speed in order to secure a pull of any value. A cable operated by the engine and apparatus proposed above will have a speed of approximately 182 feet per minute. At 100 per cent efficiency the engine will only develop a pull of 450 pounds. The draw bar pull of the tractor will depend somewhat upon the speed in which it is designed to travel, but should vary somewhere near the range of 150 to 200 pounds per tractor horsepower. If, however, heavy pulling is to be done with the cable apparatus arranged as suggested, it is best to have it mounted on skids rather than on wheels.

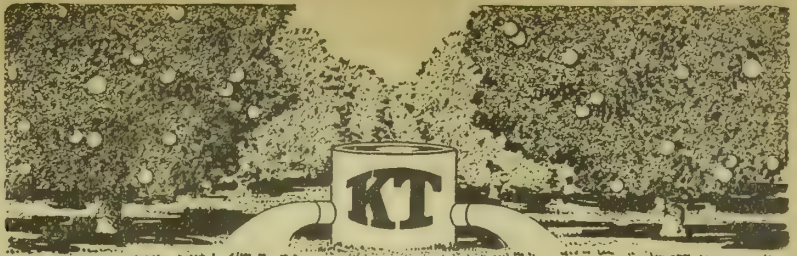
SMALL PUMP AND TANK.

To the Editor: I am contemplating putting in a pumping plant and I would like to know how large a tank I will need for house use and to irrigate 800 fruit trees. I expect to use a 5 h.p. engine.—R. J. J., Lincoln.

It would scarcely be worth while for you to put up a smaller tank than 1000 gallons, yet we know a rancher who has that sized tank for house and dairy use and to irrigate 400 fruit trees besides 10 acres alfalfa and some corn and grain. He uses a 3 h.p. motor and a 2½-inch centrifugal pump with a four-inch discharge. He previously had a three-inch discharge and it took nearly four horsepower to run the pump. A five-h.p. engine would lift 200 gallons per minute 50 feet, part of the 50 feet being lost by pipe friction.

CLEARING BRUSH ON A LARGE SCALE.

At the World's Fair was exhibited a machine for the wholesale clearing of brush land. It was to be hauled by a tractor. The first segment was an iron roller seven feet wide which humbled the brush. Next followed a frame with underground plowshares V-shaped to cut the roots. Following that was a "hay rake" twelve feet wide with solid-faced seven-foot wheels and teeth that dug into the ground several inches. A machine like it had been used to clear 18,000 acres in Nevada. We now have a note of one being used for scrub oak, manzanita, and greasewood in Santa Barbara county. In this case, however, instead of a roller, three railroad rails fastened together are dragged over the brush; and eight 12-inch plows



All Kinds of Irrigation Appliances

In these days of high prices and shortages of all manufacturing materials. It gives us pleasure to announce that we have a full supply of Irrigation Appliances on hand at convenient distributing points all over the Pacific States, and are prepared to make prompt deliveries through out the season.

We are the pioneers in this business, and the largest manufacturers of Irrigation Appliances in the world. Years of experience have taught us how to make the best possible goods at a fair price.

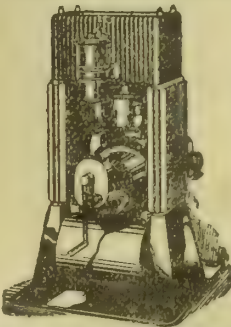
Write today for our booklet on "Irrigation"—or for any specific information you may require.

KELLAR-THOMASON CO.

"Originators of the Valve System of Irrigating"

1234 EAST 28th STREET,

LOS ANGELES, CAL.



Uni-Electric
LIGHTING SYSTEM

Electricity for Farm Homes

At one-third cost of juice from Power Company (this includes interest on cost of plant). It is the simplest and most economical plant on the market.

No Batteries - No Switchboard - No Rheostat

Will operate 50 lights 7½ hours for 11c. Will also operate electric fans, irons, small motors, etc. If your buildings are not wired, send us plans and we will give you full instructions so that you can wire them yourselves. Material furnished at lowest cost.

Karl A. Hedberg

ELECTRICAL ENGINEER.

104 Clay Street,

San Francisco, Cal.

WANTED-TRAINED AUTO MECHANICS



Thousands of NATIONAL graduates are making BIG MONEY everywhere as Chauffeurs, Auto and Tractor Repairmen, Machinists, Salesmen, Battery and Ignition Specialists, Garage Owners, Technical, practical instruction. Up-to-date equipment. 12 years' success. We help students earn living. Write for illustrated catalog and free \$40.00 Special Ignition Course TODAY.

NATIONAL SCHOOL OF ENGINEERING - Los Angeles, Cal.

followed by the rake are taken at a separate trip.

AUTOMOBILIST REDUCES COST OF SOLES.

To the Editor: The high cost of sole leather has no terrors for me. I have a substitute that outlasts sole leather, is cheaper, less trouble to apply, and water does not soak through it.

As I have an automobile, I used a piece of an old tire casing to half-sole my shoes. I just cut a piece of tire crosswise to fit the shoe sole and nail it on. Motor and bicycle tires for the kiddies' shoes. Don't sell your old tires to the junk man. Arbuckle. Al Fairbanks.

POWER FOR PUMPING.

To the Editor: Will a ten-horsepower engine pull a six-inch centrifugal pump volume of water through an eight-inch pipe 700 feet long with a total head of about 20 feet?—S. N., Middletown.

Your pipe friction will equal a 15-foot head. To lift the 900 to 1000 gallons per minute, able to be delivered by a six-inch pump, will require about 17 h.p. This includes both the 20-foot lift and the friction head.

The 1917 Studebaker Almanac, besides containing the usual almanac information, has considerable to say about the care and upkeep of automobiles, what to do when things go wrong, etc. Information on electric motors and gas engines are also indexed in a way to make this almanac of value to power users. Dairymen and stock raisers are re-

20-35 YUBA

BALL TREAD TRACTORS

WE BELIEVE

that a machine represents the men who are responsible for its making.

The ideals that guide them prove the quality of the production.

Mechanical precision and accuracy are an evidence of the integrity of character which has been tried and proven in YUBA TRACTORS.

THE YUBA CONSTRUCTION CO.
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433 CALIFORNIA ST.
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FREE ENGINE BOOK

Before you buy any Engine—Read my Book, "How to Judge Engines." Tells how to distinguish a High Grade Engine by the difference in cylinders, pistons, valves, ignition, etc., with less cost for fuel, up-keep and repairs. Book Sent Free together with my LOW "Built by FACTORY PRICES and Easy Payment Plan. Experts" 90-day trial offer, etc. Address

Save Half
ED. H. WITTE,
WITTE ENGINE WORKS,
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12, 16 and 22
H-P. Sizes. 1864 Empire Bldg.,
Pittsburgh, Pa.



membered with pages of handy information, and the home hints are valuable for the women.

General Agricultural Review.

FIELD CROPS.

Bacon Island, San Joaquin county, potatoes are reported to be bringing the growers \$2.50 per sack. If weather permits digging will be completed shortly.

The annual convention of the Northern California Beekeepers' Association met in Sacramento recently, and after discussing important problems elected new officers.

The U. S. Dept. of Agr. reports that after eight years of experimentation with yellow-flowered alfalfa they feel the plant cannot be recommended for general cultivation.

Seventy-five thousand acres of rice were planted in California in 1916, but owing to the damage done by early rains and heavy winds only about 60,000 acres were harvested.

The sugar beet acreage harvested in California in 1916 was 25 per cent larger than that of 1915. The 1916 prices averaged approximately \$6 per ton compared to \$5.40 per ton for 1915.

With over 15,000 acres of beets guaranteed and 25,000 acres more in sight the owners of the Visalia and Corcoran sugar factories are predicting a season run at these two factories above any yet enjoyed.

J. B. Neff of Anaheim, while in our office last Saturday, reported the Farmers' Week at the Agricultural College at Corvallis, Oregon, during the holidays, a great success. Fully 1,000 farmers registered.

W. H. Delphy, a rancher near Chino, is said to have grown the largest pumpkin ever grown in that district. It looks as big as an ordinary wash tub. Its actual circumference is said to be eighty-six inches.

The ranch of Andrew Kaiser, near Orland, has 350 acres in alfalfa. Mr. Kaiser contemplates adding 400 acres adjoining land, which will also be sown to alfalfa. It is intended to market the alfalfa in the shape of prime beef and pork.

At a meeting of hop growers held in Sacramento recently it was decided that the proposed California Hop Growers' Ass'n must be capitalized in order to provide growers with funds and keep them out of the hands of the dealers.

According to reports, a number of the ranchers of the Poplar district of Tulare county are contemplating the planting of sugar beets to a considerable acreage, the soil of that district being particularly adapted to beet culture, it is said.

State Horticultural Commissioner George H. Hecke has issued a quarantine order prohibiting shipment into California of alfalfa hay, cereals, straws and potatoes, except when screened and in fresh sacks, from Utah and certain counties in Idaho and Wyoming.

The British government has requisitioned 105,000,000 burlap bags from Calcutta mills, covering a period from January to March. Importers believe this will have the effect of still further reducing supplies landed in the United States early in the year.

Reports from Ducor, Tulare county, state that the estimated value of barley grown in that district in 1916 is \$500,000. The grain was sold on the average for \$2.50 a sack. Practically all grain grown there is said to be out of the growers' hands now.

State Horticultural Commissioner George H. Hecke has issued a quarantine against new chestnut stock entering this State. The quarantine brings out the point that imported chestnut stock invites careful examination, principally underneath the bark, where the fiber of the main trunk is found to be "punky."

Petitions are being circulated in Ventura county for the retention of the farm adviser, according to developments before the board of supervisors. A compromise movement is under way consolidating the three offices of forester, farm adviser and horticulturalist into one, the money saved to be expended for road work.

Preliminary steps toward the organization of a Farm Loan Association under the Rural Credits Law has been taken by some thirty or forty land owners of Solano county. Much interest is evinced in the matter. It is proposed to divide the county into three or four districts for the development of the association.

Santa Ana says rain was never more welcome than the recent one. It brought relief to foothill pastures and put the soil in excellent condition for the sugar beet men to plow and plant and the lima bean men will more easily work their ground to conserve moisture for planting in May. Orchardists and gardeners also welcomed it.

DECIDUOUS FRUITS.

Plans for the establishment of a peach-packing plant at Hanford are under way.

The large cannery of Libby, McNeill & Libby at Selma will be enlarged to almost double its present capacity before another fruit canning season begins.

Apricot fruit buds in the Ontario-Pomona District are heavily set and very plump, nearly double what would be required for a normal crop if all should mature fruit.

According to estimates 35,000 tons of prunes were produced in the Santa Clara Valley last year and the production of the balance of the State was about 33,000 tons.

Announcement is made that a \$20,000 peach-packing house will be erected at Reedley and an addition to the plant at Selma costing \$10,000 will be started before Feb. 1.

Frank Swett of Martinez reports a very heavy demand for almond and apricot stock. He says that prunes, pears and walnuts will also be set out in large numbers this season.

Articles of incorporation have been filed by a company to be known as the Bakersfield Canning Co. at Bakersfield. They propose to erect a fruit canning plant at Bakersfield.

County Horticultural Commissioner Fred K. Howard of Kings county reports heavy receipts of prune, apricot and peach trees dur-

Layne & Bowler PUMPS

The demand for these famous pumps is fast increasing. Ranchers and irrigators everywhere appreciate the incomparable service Layne & Bowler Pumps render.

We are in close touch with the rigid requirements of irrigation and meet them with absolute satisfaction. Our years of accumulated experience are at your immediate service. Consult with us regarding your pumping problems. Let us serve you.

Let us mail you a copy of our interesting pump catalog No. 25. It's free for the asking.

Layne & Bowler Corporation

900 Santa Fe Ave., Los Angeles



Orchard Heating WITH BOLTON ORCHARD HEATERS PREVENTS

Frost Damage

IN YOUR ORCHARD

1 and 2 Gallon Capacity.

SEND FOR BOOKLET.

The FROST PREVENTION CO.
Merchants' Nat. Bank Bldg.,
San Francisco, Cal.

Attention, Grape Growers!

Owing to the shortage of railroad cars and therefore the uncertainty of prompt shipments, the growers of California would do well to order their sulphur for immediate shipment, or as near a future date as possible. By placing the order for cars now, you would have the sulphur at the proper time.

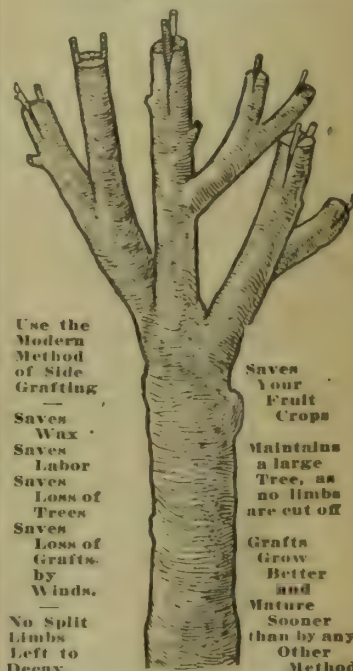
Sulphur early. Remember all the advices you have had from the University of California and others that sulphur will not destroy mildew, but it will prevent mildew if put on the vines at the proper time, that is, before the mildew appears. "Anchor Brand" Velvet Flowers of Sulphur is the standard of all the best brands of sulphur on the Pacific Coast.

Now is the right time to buy your sulphur.

SAN FRANCISCO SULPHUR CO.,
624 California St.,
San Francisco, Cal.

DON'T DESTROY YOUR CROPS and Ruin Your Trees

BY Grafting in This Manner



Use the Modern Method of Side Grafting

Saves Wax
Saves Labor
Saves Loss of Trees
Saves Loss of Grafts by Winds.

No Split Limbs Left to Decay.

Full information sent FREE.

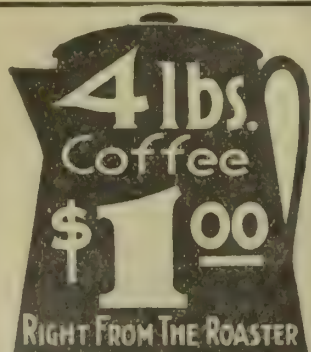
W. S. Tuttle & Co.

Sole Agents for California

208 Cap. Nat. Bank Bldg.,

Sacramento, Cal.

ASK YOUR FRUIT BUYER.



3 1/2 lbs., \$1.00; 3 lbs., \$1.00

NO MONEY FOR COFFEE!

WILSON'S OFFER—

Wilson will parcel post any of the above grades, all charges paid. You use 1 lb. If it is unsatisfactory, return the rest, and Wilson will send you postage.

MIND YOU, NO CHARGE FOR THE POSTAGE USED.

If you are pleased and keep the coffee, you agree to send the \$1.00 within 10 days.

IS THAT FAIR?

When ordering, kindly state how you want coffee ground—fine, medium, pulverized, or in the whole bean.

WILSON'S

908-970 Market St., San Francisco



BIG SEED COMPANY IS DISTRIBUTING NEW CATALOG

AGGELER & MUSSER SEED CO.,
Of Los Angeles, Issue 24th
Annual Book.

One of the largest seed houses in the West, the Aggeler & Musser Seed Company, Sixth and Alameda Streets, Los Angeles, have just received the first edition of their new 1917 catalog, and are giving it broadcast distribution. This is their 24th annual catalog and it certainly surpasses any previous edition.

It contains many new features, such as hints to the home vegetable gardener, how gardening may be made easy, etc. In fact, the supplementary booklet called the "Garden Manual," which heretofore has been printed separately, is this year incorporated in the big annual, and is claimed to be one of the most complete seed books published. It contains answers to more than 1,000 questions, and gives information regarding all varieties of plants listed and is fully illustrated. Not only does it tell all about seeds, but gives full data concerning the correct tools and implements agriculturists should use to obtain the best results. Valuable hints on poultry, spraying, fertilizing and the use of insecticides are also given.

The Aggeler & Musser Seed Company will gladly send this descriptive, illustrated and interesting catalog free and postpaid to anyone writing and requesting it.

CORY'S MAMMOTH THORNLESS Blackberry



No briars to tear the hands or clothing—an economy at harvest. The earliest berry to ripen—a guarantee of profit at market. A prolific bearer of gigantic fruit—insuring quantity. A luscious, almost seedless berry of unsurpassed flavor—the final requisite.

Thornless

Quality
is guaranteed.
Affidavits furnished.
Supply limited.
Booking orders now.
State quantity and
ask for prices.

Ekstein Nursery Co., Modesto, Cal.
SOLE DISTRIBUTORS.

MISSION OLIVES EARLY RIPENERS.

THE EHLMANN OLIVE CO.

Oroville, Cal., Nov. 17, 1916.
Mr. W. A. Hayne, Box 461, Marysville, Cal.

Dear Mr. Hayne: Answering your kind favor of the 15th, I am enclosing herewith photograph of some of this year's fruit on the Fogg grove, and you will note that they are above the average Mission. We also were able to harvest this entire crop before the frost, which shows that they are early ripeners.

We will be glad to keep in touch with you on this matter, and if we can be of any further service, don't hesitate to let us know.

Yours very truly,
(Signed) E. W. EHMANN.

I propagated the Fogg orchard thirty years ago. The origin of the Fogg trees was directly from the old Mission at Santa Barbara. The trees I have now for sale are full brothers to the Fogg olive trees, and, like the Fogg trees, they are all propagated from the large size cuttings.
W. A. HAYNE.
Box 461, Marysville, Cal.

Budded Avocado Trees

Write for new descriptive Catalog. Largest and most complete stock in California.

Newbery-Sherlock,

R. F. D. No. 2, Pasadena, Calif.

BLAKE, MOFFITT & TOWNE

Dealers 57 FIRST ST., SAN FRANCISCO
in Blake, Moffitt & Towne, Los Angeles
PAFER Blake, McFall & Co., Portland, Oregon

ing the past month for planting this season.

Fred P. Roullard, county horticultural commissioner of Fresno county, has appointed James A. Armstrong of Selma as deputy horticultural commissioner of Fresno county.

A report from Kingsburg states that orders are coming from the East for large amounts of the 1916 fruit pack and that it is thought the 1916 crop of canned fruit will be moved at good prices.

Fig land is being sought for in the Oroville section and contracts have been made for next year's crop at as high as \$115 per ton. Shipping plums are being planted as a filler in olive and fig orchards.

A representative of the Tulare County Growers' Ass'n has mailed contracts to peach growers in that district offering to pay \$16 a ton for freestones and \$20 a ton for clings during the coming canning season.

Kings nurserymen are predicting a brisk inquiry for all varieties of deciduous trees this year. Nurserymen say that the excellent prices that orchardists have been getting this last twelve months have resulted in numerous ranchers deciding to put in fruit trees.

CITRUS, NUTS, SEMI-TROPICAL.

Porterville estimates its frost damage to citrus fruits at 6 to 7 per cent.

Some San Bernardino county citrus trees have had young growth nipped by frost.

Packing houses in Tulare county expect to reopen for operation by Jan. 8, there being about 1,000 cars of fruit yet to ship.

Orange picking is now in full blast in the Redlands district and the fruit, it is said, was never finer. The crop is estimated at 4400 cars.

It is said that two ten-year-old olive trees at Holtville produced two barrels or 100 gallons of olives, 700 pounds, worth \$63 at the lowest market price of \$190 per ton.

Over 500 acres in the vicinity of Linden, San Joaquin county, have been purchased by San Jose people, and what was once a series of grain fields will soon become an immense walnut grove.

Nurserymen in San Joaquin county estimate that 1500 to 2000 acres of almonds will be planted in that county the coming season. It is said that there are 3000 acres of almonds in that county now in bearing.

The California Walnut Growers' Ass'n now comprises 2400 growers and handles around 75 per cent of the crop. Hereafter the association will not only handle all of the first-class nuts but all of the by-products as well.

Officials of the Redlands-Highland Orange Association, after an inventory of the groves belonging to the Association, show that the series of cold nights during Christmas week resulted in no appreciable damage to either the trees or fruit.

The Department of Agriculture has perfected a citrus fruit-peeling machine and developed processes for pressing and chemically treating the peel whereby an oil equal in quality to the imported oil may be produced at a cost to enable competition with the foreign product.

Practically every citrus fruit-growing section of consequence in the State will be represented at the coming Seventh National Orange Show, to be held at San Bernardino February 20 to 28 inclusive. It will be the most beautiful, comprehensive and elaborate exposition of its kind ever held.

Smudge pots saved a crop of 5,000 to 6,000 boxes of lemons for C. W. Buswell of Tulare county during the recent heavy freeze there. The pots were used continuously for 10 nights and Mr. Buswell states he is sure the crop would have been totally destroyed had it not been for the smudge pots.

A movement is on foot among orchardists of the Porterville district to have passed at the session of the next State legislature a standardization law which it is thought will be acceptable in all parts of the State.

Under this law standardization will be based on hygrometer readings, and oranges will be considered fit to ship when a spindle reading of the juices of the fruit gives 11 and 12 deg. irrespective of the acid content.

Nitrate of Soda



The CHEAPEST and Most Available
form of NITROGEN for All Crops

**Increases Crops
25 to 50 per cent**

Produces more powerful growth and
healthier, bigger plants.

Easy to handle, Clean, Odorless
Write for prices and valuable literature.

NITRATE AGENCIES' COMPANY
H. BOOKSIN, MGR.,
501 Bank of San Jose Building, San Jose

AVOCADOS

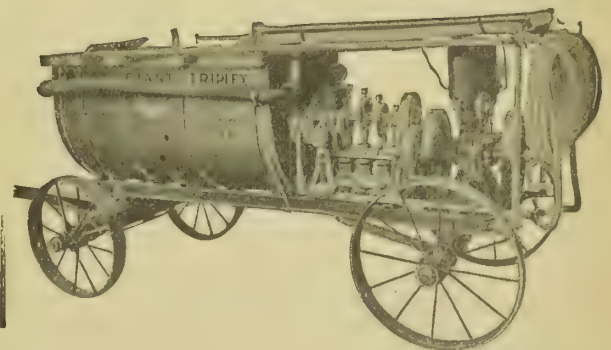
Only Guatemala Hard-Shelled Avocado trees in California, grown from imported buds. These buds were selected, imported and propagated by me after having lived for thirty years in the Tropics. Booklet sent on application.

E. E. KNIGHT
GUATEMALA AVOCADO NURSERY

Yorba Linda,

California

Trouble-less!



The BEAN is as free from temper-trying, time-wasting troubles as a power sprayer can be built. There is practically nothing to do but attend to the nozzles. Among the trouble-less features of

BEAN Power Sprayers

We call your attention to the following:

- BEAN PATENTED PRESSURE REGULATOR, which holds the pressure exactly where you want it, and demands practically no attention;
- BEAN THREADLESS BALL VALVES, which can't stick, and which can be opened up in less than two minutes, without stopping engine or lowering the pressure;
- BEAN PUMP WITHOUT STUFFING-BOX and therefore without stuffing-box troubles;
- BEAN REFILLER, which fills 200-gallon tank in 5 minutes;

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Livestock Facts and Fancies---XVI.

[By the Editor.]

Last week we gave quite a sermon on the troubles in stock-selling in California with the hope of making the coming meeting of the California Swine Breeders' Association (to be held January 18 and 19 in Los Angeles) as largely attended and important as possible. We are glad to know that this purpose is likely to be attained, for an attendance of possibly 500 is being anticipated. While we are waiting for that assembly to bring out much significant information, we can proceed with a few points on the general American situation in selling meat animals.

One has only to read the discussions of stock marketing in all parts of the country to become convinced that California is not alone in this problem of selling animals with fairness to the grower, though possibly California may have the worst end of it. Growers are evidently sore all over the country and all kinds of growers are sore, for the great range companies are crying to the government for help and the little farm producers are organizing co-operatively to such an extent that they have in some states actually hundreds of neighborhood associations which are trying to escape the clutches of country-buyers by joint car-lot shipments and are reporting considerable gains in price and reductions in cost in that way. Thus it appears that California is mired down, in this matter of selling livestock, in the same slough with growers in other states. If she is deeper in the mire, she should not be hopeless: it will probably only need a stronger rope and greater team work to pull her out. How shall this be done? Why bless you, patient reader, if we knew that, we would not be using so many words and showing so clearly that we do not know. If we had a prescription describing a sure cure for present trouble, nothing but a motorcycle could get us to the drug shop fast enough, and we would pour the stuff into all open mouths we could find, even though they were as many and as deep as "crater-pits" on the devastated farms of Belgium. The truth is we do not know what should be done nor how to do it. We are only sure that something has to be done, and done rather quickly, if California is to get what belongs to her in livestock development.

We have an idea that there is no one thing that can be done to make all producers sure of getting their rights in selling. It is more likely that several things ought to be done—perhaps not all at once, but in succession. It is not clear that all growers would be advantaged by the same course of action or by the establishment of the same agency or institution. For instance, our own H. A. Jastro, who not only handles large production and trade in his own way successfully, has, if we refer to him justly, made no concealment of the fact that he is not in favor of an open selling place like a "stock-yard," as a privately or corporately owned selling place is generally called. Mr. Jastro not only controls many thousands of

cattle on many hills in California, but he is the leader and exemplar of the whole range interest of the country. We quoted last week a resolution supporting Mr. Jastro's views as to what in general should be done for fairer stock-selling in this country. At the Chicago conference there was also a declaration made by E. L. Burke, prominent ranchman of Omaha, and Mr. Jastro's associate as a member of the Market Committee of the American National Livestock Association. Mr. Burke made a plea for support of the Borland Resolution requiring the Federal Trade Commission to make a thorough investigation of costs in the production and handling of cattle and its by-products. Mr. Burke also said something like this:

You already know of the rapid concentration during the past twenty years of buying power into the hands of a few large units; and on the other hand the tendency toward smaller and weaker units among the producers. You also know of the very unsatisfactory conditions that have prevailed for years at the market centers and that conditions had steadily been growing worse until a crisis was reached in 1914 and 1915, when conditions were so unsatisfactory among the feeders of the country that thousands were going out of business because they could not afford to stay in the game. During this time the large packing concerns were making their greatest profits in history.

At the same meeting M. L. McClure, of Kansas City, Mo., president of the National Livestock Exchange, said this:

If the present system of marketing on central competitive markets is the best, it should be supported, and the efforts of certain packers in trying to break down the price-making system by going to the country to buy their supplies should be discouraged.

He urged producers to refuse to sell to agents sent to their farms and ranches, and continued:

No packer would send to the farms unless he could buy cheaper there than in a competitive market. What is said of selling in the country is also true of the custom of shipping direct to the yards of private packing houses and letting the packer fix the price he will pay.

This seems to be equivalent to saying to the packers, with reference to buying on the ranches or in their stock yards: "You'll be damned if you do and be damned if you don't." The explanation is reasonable enough from the large range point of view, viz.: that there should be truly competitive stock yards under government supervision or the range interests should become their own packers in co-operative establishments and they expect a government investigation to show that one or both of these things is necessary.

Now while we presume the claims of the large range interests are rational and perhaps necessary from their point of view we are not at all sure that their ideals are at all practicable or attainable to the growers with fewer cattle and less money. We are inclined, at this moment at least, to think that a central selling place, even if it is established and maintained by a capitalist or a corporation who is enriched by its operation, will return the small grow-

ers more than they now get from the local or traveling buyers. It usually takes more corn to feed a bunch of small hogs than one or two big ones. Again we are not satisfied that making up community carloads and shipping to a packer, to be graded and priced by him, will not get nearer what good stuff is worth than to have a local buyer handle a community product in his own way. A large concern with a reputation to uphold may not have any more conscience than a small jockeying buyer, but it takes a lot of time to educate a large staff to be crooked and then crookedness is apt to return upon the educator like a boomerang. Reasonably honest operation is not only better, morally, but it is easier and the larger the business, the easier it is. We would rather fight a big, bold devil handicapped with business requirements than a pack of little ones which had nothing to save or lose.

For these reasons, and others like them, we are not sure but hundreds of small growers might do better by studying ways to get nearer to the large buyers we now have than by trying to displace them, though it may be reasonable enough for the great range interests to try to do this.

Of course the establishment of open markets at several points, as is proposed in the extract outlining Col. Weinstock's policy as State Market Director, which appears elsewhere in this issue, is ideal in many respects. The doubtful point is what will be the attitude of buyers toward such establishments. If large buyers need stuff they will go to them, as good business will require them to do, and they will nat-

urally take what they need and leave the rest to be scrambled for by local butchers or feeders who have forage to work up. It is not to be expected that these markets will be overstocked at first. Growers will be held back by their own doubts, by their obligations or friendships to and for the old traders and all the other things which make it impossible to make a drive of farmers toward anything, no matter how desirable. Heaven itself has to be content to get them one at a time. We presume Col. Weinstock will present his plan in detail at the convention in Los Angeles on Jan. 18 and we hope it will receive most careful consideration.

SUDAN FOR COWS.

[Written for Pacific Rural Press.]

Among those who are trying out Sudan grass as a feed for livestock this year is J. W. Goodnight of Kings county, who had five acres planted, part of which is on rather heavy soil and part of which is on a sandy knoll. Planting was done about the middle of March and by August 1 one crop of hay had been harvested and another was ready to cut; and this without irrigation. The stand, however, was not as good as it might have been. At the above date none of this hay had been fed as it was all being stacked for winter feeding; but last year Mr. Goodnight found that the cow fed Sudan from a small patch did just as well as on alfalfa and seemed to like it equally well.

By lining the horse stalls with three or four inches of sawdust, the other bedding will last longer and the valuable liquid manure will be saved.

Revada Guernseys BRED IN THE PURPLE



Junior and Reserve Grand Champion Cow at Sacramento.

Every animal on this farm is imported, and carries the blood of such noted sires as Governor of the Chene, Sequel's Monogram, and Governor of the Gree.

HERD BULL IMP, Ricardo of Edgmoor 34367

Some Fine Young Bulls
FOR SALE

See Our List of Winnings at the California State Fair

REVADA FARM

B. E. NIXON, Proprietor.

Yountville,

Napa County, California

New Livestock Marketing Methods.

[From Annual Report of State Market Director Weinstein.]

In the marketing of cattle and hogs the small farmer is obliged to sell to itinerant buyers who visit him at more or less irregular intervals, to ship to large centers on consignment. If he ships on commission he is at the disadvantage of being obliged to accept whatever is remitted to him. [Further disadvantage of high freight rates on small shipments and of dealing with shrewd bargainers are pointed out. —Eds.]

The ideal marketing condition, in the interests of the small farmer who has livestock to sell, is to have local organizations, the members of which can deliver their few head of stock at a central shipping point on a given day, in order to ship in carload lots, these to be transported to stock yards, located at convenient points for the assembling of the buyers.

The associations would be represented at such stockyards by the selling agents, who being expert livestockmen would grade and segregate the livestock and invite bids from the various buyers, selling for spot cash to the highest bidders. The approximate cost of selling under such a plan would not exceed 1½ per cent commission, which would include compensation to the selling agent and the feeding and housing in the stockyards.

Under the foregoing system the small farmer then would get the benefit of carload rates on his few

head of livestock and would enjoy all the advantages of having his stock properly graded and sold by expert salesmen, thoroughly informed as to market conditions and in a position to meet, on an even footing, the expert buyers for packers and others. He would secure all these advantages at the least possible cost and his sales would be made practically for spot cash.

It is my purpose to endeavor to have this plan carried out at the earliest day. To accomplish the desired end, it will be necessary to enlist private capital in the establishing of stockyards in suitable locations in various parts of the State. It will also become necessary to organize the farmers into local livestock associations and then federate them into State livestock marketing associations.

I am at present in correspondence with parties who are interested in the establishing of stockyards and there is now a strong likelihood that in due course the first of such stockyards will be established at some convenient point in the Sacramento Valley.

If the first effort in this direction can be made a success I anticipate little difficulty in duplicating the plan in other parts of the State; and when this shall have been accomplished I feel that the problem on the part of the small farmer in successfully marketing his livestock, will have been largely solved.

It pays to dispose of all ewes before they become too old. About eight years is the age limit.

Groom, rub and brush the legs well before leaving the team for the night.

Breed for Butterfat



Beryl Clothilde Hengerveld, Champion in Butter-fat Contest, Sacramento, 5-day record, 21.11 pounds, test 4.7 per cent.

The quickest and surest way to make your Holstein herd more profitable in spite of high cost of feed is to introduce blood from high-testing ancestry.

My herd has a larger percentage of high-testing cows than any other herd in the State.

My young herd bull, DUTCHLAND SIR PIETERTJE CREAMELLE, has high-test breeding, and is transmitting this breeding to his sons and daughters. Our tested daughters have records averaging 21 pounds, all testing better than 4%. One of these, Clothilde Pontiac Creamelle, is California Champion 2-year-old, with a record of 22.52 pounds at 2 years 1 month; test 4.72%.

Have a few fine young bulls that will soon be ready for service. WRITE OR CALL AND SEE THEM.

F. STENZEL

Breeder of High-Test Holsteins.

SAN LORENZO,

CALIFORNIA

El Dorado



Holsteins

My herd consists of 15 A. R. O. cows and 25 registered heifers, all selected females. Bull calves from such cows and sired by a son of a 33-pound cow are worth consideration when buying foundation stock. **SEGIS PONTIAC DE KOL BURKE LUIT**, now heading my herd. His dam, Luit Burke, has an A. R. O. record of 32.76 pounds butter in 7 days as a junior 4-year-old. She is a full sister to Riverside Sadie De Kol Burke—32.29 pounds butter in 7 days. His sire, Segis Pontiac De Kol Burke, is the senior sire of the A. W. Morris & Sons, Inc., herd, and was grand champion bull at 1916 California State Fair.

CORRESPONDENCE SOLICITED.

ALEX WHALEY

TULARE,

CALIFORNIA

Examine Backs of Cattle for Lumps.

The characteristic lumps or swellings which may be found under the skin on the backs of many dairy and beef cattle from January until April contain grubs. If these grubs are allowed to remain, they will complete their growth, drop to the ground and transform to heel flies which may reinfest the cattle during the spring and summer, according to T. J. Talbert of the University of Missouri College of Agriculture. The grubs weaken the cattle, cause them to fall off in flesh and milk, and decrease the value of the hide. The meat in the immediate vicinity of a grub becomes slimy and of a greenish color, and is known to the butcher as "licked beef." On an average the damage to the hides is placed at one-third their value and the loss of beef to each infested animal ranges from \$3 to \$5.

The grubs may be pressed out through the opening at the top of the swelling. A sharp knife and a pair of tweezers will often facilitate the work of removing the grubs. Care should be taken to crush all the grubs removed, to prevent their further development and transformation into flies. It is advisable to examine the cattle for lumps or swelling over the back every two or three weeks during late winter and early spring to detect the pest. Various oils are often used. The lotion is either smeared over the infested region, or applied to the mouth of the breathing hole of the grub. One or two applications will usually be sufficient. The objection to this method is that the wounds do not heal readily unless the grubs are

removed—the source of irritation.

Some have claimed that the arsenical and coal tar dips can be used in the case of large herds which can not readily be treated by direct removal of the grubs. It still remains to be determined, however, whether practical means of eradication can be made by the use of dips. Dips applied during spring and summer will no doubt kill many maggots, and eggs which are attached to hairs on the animals' bodies.

The adult of the ox warble is a fly about half an inch long, very hairy, and resembles a small black honey bee. The females in depositing their eggs on cattle worry and torment the animals and frequently cause them to stampede for shelter or water. The fly does not sting or bite, but the animals seem to have an instinctive dread of its approach just as the horse has for the bot-fly.

Fish oil, train oil, and other substances are often recommended as spray to keep off warble flies. To be effective, their use would have to be continued during spring and early summer, and such a practice would be difficult and expensive and impracticable except in the case of small herds of valuable cattle. The flies do not appear to attack cattle which stand in water or in dense shades.

A horse's bit should be neither too wide nor too narrow, the bar or mouthpiece reaching about the width of two fingers above or behind the corner teeth.



Time to think about a silo!

This is the month when a lot of men decide to order silos. They see how the cost of hay and feed puts a crimp in their bank-account. Around them neighbors with silos are living easy. They have a big fat cream check coming in every month.

Look around—talk with men who have an

INDIANA SILO

Have them tell you how the Indiana saved their frosted corn last Fall. How the sweet, succulent silage is keeping their cows sleek and contented. They don't worry over the high cost of feed, and there's no drudgery connected with the feeding.

Write for the Indiana Book—free to responsible farmers. Learn about the Special Discount to Early Buyers.

Sign and mail the Coupon—or a postal—today!

The Chas. K. Spaulding Logging Co. Salem, Oregon U.S.A.

Sign and Mail this Coupon Now!

The Chas. K. Spaulding Logging Co. (Dept. B) Salem, Oregon

I am tired of paying high feed prices every Winter. Send me your free Silo Book.

Name Address



Largest Silos Most Economical.

[Written for Pacific Rural Press by Wm. Curtis Clark.]

The question has risen in the minds of some dairymen as to whether it is better to build two small silos or a single large one.

Where the herd is sufficiently large to utilize the larger silo, with no spoilage, it will be apparent from the figures herewith given, that there is great economy in one large silo, as against two smaller ones of equal capacity.

Some people think that the saving of time and the greater facility with which silage may be fetched out of a small silo operates in favor of those whose diameters are 16 feet or less. However, by using two sets of doors, placed on opposite sides of the silo, an 18- or 20-foot silo can

A silo buyer spends his money for storage capacity by the ton. In column 5 of Table 2 we find that the cost per ton of storage space is \$4.39 in a 10-foot silo while it is \$1.96 in a 20-foot silo, or \$2.16 in a 20-foot silo equipped with double doors. In other words, the same dollar buys more than twice the storage space in a 20-foot silo than it does in one of 10 feet.

Again we find that in columns 3 and 4, the capacity of a 20-foot silo is 242 tons, which is exactly equal to the combined capacity of a 16-foot plus a 12-foot, but the difference in price makes a saving of \$181, besides a saving of 40 per cent in cost of foundation, 42 per cent on cost of

TABLE I.
Minimum Rate of Daily Feeding from Silos of Different Diameters to Keep Silage Fresh.

Diameter in Feet....	Summer pounds.	Winter pounds.	Required Number of Cows.					
			Summer			Winter		
			40 lb. ration	30 lb. ration	20 lb. ration	40 lb. ration	30 lb. ration	20 lb. ration
10	525	263	13	18	26	6	9	13
12	755	378	19	26	38	10	13	19
14	1030	515	26	34	52	13	17	26
16	1340	670	34	45	67	17	22	34
18	1700	850	42	57	85	21	28	42
20	2100	1050	53	70	105	27	32	53

be emptied as easily as one 10 feet in diameter.

When silo doors are closed at filling time, it is a good plan to put a smear of axle grease or cup grease in the door jamb angles as the gas pressure of the fermenting feed has a tendency to force small bubbles through the door contacts before the wood has fully expanded to hermetically seal them.

With carefully closed doors, there should be a negligible spoilage of the contents at these joints. It is

freight; and the larger double-door silo will be as easy to empty.

In column 9 we find that there is 5 inches of contact with the silo wall for each square foot of surface silage exposed in the 10-foot silo compared with 2½ inches per square foot in the large size.

Most of us have reversed and reset redwood fence posts known to have been originally set in the ground fifty or more years ago. I have been impressed many times with its remarkable durability, and

TABLE II.
Comparative Cost of Storage Space in Stave Silos of Different Diameters.

Height....	Diameter....	Tons Capacity....	Cost....	Cost per Ton....	Founda- on ft. of ton sizes under 100%.	Shipping Weights....	Weights Per cent....	Circum- to Surface....
36	10	61	\$268	\$4.39				5 in.
36	12	87	317	3.65				4 in.
36	14	119	338	2.84				3½ in.
36	16	155	389	2.51				3 in.
36	18	196	426	2.23				2½ in.
36	20	242	475	1.96	100%	12500	100%	2 in.
36	18 plus 10	266	704	2.76	110%	17900	113%	
36	16 plus 12	242	706	2.92	140%	17800	142%	
36	14 plus 14	238	676	2.84	140%	17600	141%	
36	12 plus 16	212	525	2.46	100%	12500	100%	

*Silo equipped with two sets of doors.

also a fact that there is less circumference to a large silo in proportion to the exposed silage surface, hence the chance of spoilage around the edges is proportionately less in large silos.

From Table I, it is apparent that one must have at least 27 cows to feed over the winter months or 53 cows over the summer months in order to use a silo 20 feet in diameter, giving 40 pounds of silage daily to each cow, and so on.

In this connection it is interesting to notice how many of our dairymen are using this material for purposes of silo construction.

DIGESTIBLE NUTRIENTS OF SEVERAL FEEDS.

To the Editor: What is the percentage of dry matter and digestible carbohydrates, protein, fat, and ash in ground alfalfa, wheat middlings, rolled barley, buttermilk, tankage, and mangels?—A. P. Dixon.

[Answer adapted from "Woll's Handbook for Farmers and Dairymen."]

Feed	Digestive Nutrients of Several Feeds. Percentages of Protein, Carbohydrates, Ash, Etc.				
	Dry Matter	Ash	Fat	Protein	Carbo- hydrates
Ground Alfalfa....	91.6	7.4	10.3	41.4	1.1
Wheat Middlings....	87.9	3.4	12.2	47.2	2.9
Rolls Barley....	89.1	2.4	9.5	66.1	1.2
Buttermilk....	9.9	1.7	3.9	4.0	1.1
Tankage*....	93.0	15.9	50.1	26.1	11.8
Mangels....	9.1	1.1	1.1	4.8	2.2

*Productive Feeding of Farm Animals, Woll.

These figures are averages of many analyses of each feed, but the feeds vary so much not only in moisture content but also to less extent in composition, that any lot of feed may vary somewhat from the values shown in the table. The ash or mineral matter is of vital value in making bones, teeth, etc.

IS IT THE BUSINESS, THE COW, OR THE MAN?

[Written for Pacific Rural Press.]

A farmer in our presence recently made this statement: "There are too many dairy cows in our country. I have run a dairy for several years; had a lot of money tied up in expensive equipment and stock, endured all sorts of labor troubles and got mighty small returns."

The same week we visited a large dairy, where a mixed bunch of mongrel-looking cows were being milked. Owing to the owner's absence we questioned the two milkers about the daily production of the herd and were informed that the 80 cows being milked were giving about 50 gallons of milk twice a day; a trifle over 10 pounds per day on the average of less than four per cent milk, or under four-tenths pound of butterfat per day per cow. This on alfalfa hay that was being hauled a long distance, together with corn silage.

The next week we talked with a dairyman from Humboldt county where, as he said, "most of us have made our money dairying." In previous visits to his county we had learned that they not only dairy, but they expect to dairy for all time, and, as a result have so bred their cows that many expect 300 pounds of fat yearly as a minimum for every cow in their herd.

Asked as to feed conditions, he said they were none too good; that practically every dairyman in his district had shipped \$20 alfalfa hay from San Francisco and river points the past year, but even then they could make "a little money."

Here's three experiences. Is it the business that is poor, the cow or the man?

The bull calf should be taught to eat as soon as possible. He will begin to nibble grain and hay or grass at two weeks of age. He should be fed quite liberally on grain in connection with his skim milk and hay. For grain, barley with oats and bran or oil meal gives good results while alfalfa or other leguminous hay is best.

Normandie Farms Immunized BERKSHIRES



WINONA ROYAL CHAMPION 5th,
Junior Champion Boar of the
Western Berkshire Congress
Show at Sacramento State
Fair, 1916.

GUARANTEED
AS REPRESENTED.

Breeding Stock for Sale All
Times at Prices that are Right

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VISALIA, CALIF.

MONTELENA HERD

Large Yorkshire Swine

THE IDEAL HOG
FOR THE
PROGRESSIVE FARMER.



MONTELENA BIG DICK,
First Aged Boar and Reserve
Grand Champion.

Won 9 Prizes
With 8 Entries
at Sacramento.

Young stock
for sale—both
sexes.

A.L. Tubbs Co.
Calistoga, Calif.

\$25 RURAL PRESS PRIZE GOES TO SANTA CLARA COUNTY.

Prof. F. W. Woll advises us that Bohnett Bros. of Campbell, Santa Clara Co., were winners of Pacific Rural Press prize of \$25 in the California State Dairy Cow Competition for the month of December. The average production of the five grades for the month was 1085.4 pounds milk and 49.319 pounds butterfat. The production of butterfat for individual cows was as follows: 77.578 pounds, 50.816 pounds, 24.458 pounds (for 14 days only) and 41.01 pounds (for 19 days). Particulars of the prize-winning herd will appear in an early issue. If you have not already entered your cows for this prize, do so at once by addressing Prof. F. W. Woll, University Farm, Davis.

CREAM WANTED

Ship to a House of Known Financial Responsibility.

Write Us, and We Will Send
You Regular Weekly Quotations

Western Meat Co.
Creamery Dept., San Francisco.

California Swine Breeders' Meeting.

To all hog raisers who want to know why they are not getting better prices the meeting of the California Swine Breeders' Ass'n in Los Angeles Jan. 18 and 19 will afford a grand opportunity to investigate the question. Some of the best informed meat packers on the Coast will put themselves where the farmers may ask all the questions they wish. The killing demonstration and visits to the packing plants will be worth a trip from any part of California. The railroads will carry you home for one-third fare if you get a certificate for the purpose when you buy your ticket to Los Angeles, and have the certificate signed at the meeting by Secretary J. I. Thompson.

Hog raising and hog marketing are the topics. Blanchard's hall is the meeting place; Hollenbeck Hotel is headquarters.

Program.—Jan. 18, 9:30 a. m., Business session; 10:00, "The California Swine Breeders' Ass'n," C. B. Cunningham, Mills; 10:10, "The Swine Business," Hon. Jas. Mills, Hamilton City; 10:30, "Feeding

Growing and Market Hogs," Leon L. Lamson, Holtville; 11:00, "The Breeding Herd and the Pure-bred Business," Wm. Bernstein, Hanford; 11:20, Discussion: Feeding Problems, Self-Feeders, etc.; 1:30 p. m., "Why the Prices of Swine in California are lower than in Oregon or in the Middle States," F. L. Washburn of the Western Meat Co., San Francisco; 2:15, "Why strictly grain-fed, milk-fed, alfalfa-fed, and acorn-fed hogs all bring about the same price in California," Frank Hauser, of Hauser Packing Company; 3:00, "How to Market Hogs in California," Harris Weinstock, San Francisco; 3:35, "What is being done and what should be done for the good of the swine industry in California," D. O. Lively, San Francisco; 7:30, Theatre party. Jan. 19, 8:30 a. m., Killing demonstration at Cudahy Packing Co.; 10:00, Cutting display at Wilson & Co. packing house; 11:30, Inspection of plant, and luncheon at Hauser Packing Co.; 1:00 p. m., Visit to moving picture studios, and other points of interest in Los Angeles.

Raise the Heifer Calves.

[Written for Pacific Rural Press.]

While we are not writing to discourage those who anticipate better and broader markets through the establishment of milk condensaries, casein factories, and cheese factories, it is well that everyone who is to depend upon these market factors should keep well in mind the necessity of raising the heifer calf.

Experience has shown in the few instances where dairymen have sold their whole milk to these agencies in this State, that there is likelihood of losing sight of the importance of home-grown calves, depending instead on the purchase of cows in outside districts for replenishment of herds.

There are two main dangers in this practice: (1) It does not allow a constructive policy in breeding better animals by the use of pure-bred sires and the careful selection of heifers to be raised through a thorough personal knowledge of the dam and (2) purchased cows are more apt to bring disease into the

herd than are home-raised calves.

F. W. Andreason, Secretary of the State Dairy Bureau, says in his annual report: "The dairyman who sells or kills his heifer calves and buys cows to keep up or increase his herd, will usually find that some of the cows he bought were diseased and have spread this disease to a larger percent of his own herd, while the dairyman who raises his own stock is usually found to have cattle free from disease."

High feed and labor costs, together with more stringent dairy legislation concerning diseased dairy cows, has compelled older established dairymen who sell whole milk to revise the practice of breeding and raising their heifer calves, using in some instances 16 or 17 per cent of milk in the calf buckets, and in other instances whole-milk substitutes. With this experience before us we can not too strongly urge the raising of heifers by those dairymen who are soon to begin the selling of whole milk.

Satisfying Results With Alfalfa Silage.

[Written for Pacific Rural Press.]

While there are some dairymen who report poor success with first cutting alfalfa for silage, A. Haley of Newark, Alameda county, is a firm believer in it because of its saving value.

In other years Mr. Haley has cured the first cutting, but it has been so badly infested with bur clover, fox-tail, and other weeds, that its value as a feed for dairy cows was small.

Last spring he put all of this first cutting into one of his large concrete silos, running it through the cutter as it came from the field, but not adding any water.

Last summer he fed this silage, together with green alfalfa; and said that his production of milk was fully 10 per cent greater than the previous year when green alfalfa and mill feeds were being used.

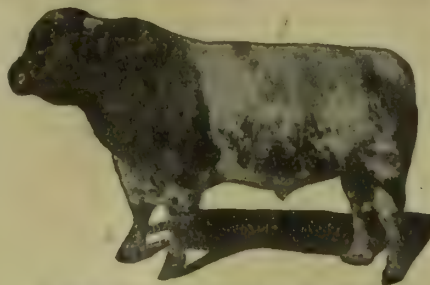
But the increased value of the first cutting hay as well as the increased production of the herd are not the only advantages that Mr. Haley attributed to the silo. He also found that it enabled him to put up a very much greater amount of hay than before, because of the lessened amount of green alfalfa the cows consume when fed silage.

But alfalfa is not the only silage crop on this ranch, as it is the intention to fill the silos twice a year, the latter filling to be made with corn, thus enabling the feeding of silage eight months out of the year.

Unlike some alfalfa silage, that of Mr. Haley's was neither rank smelling or tasting, but is nice and sweet; which is most likely due to the fact that no water was added to make it slushy.

Hillcrest Stock Farm

Shorthorn Cattle, Shropshire and Merino Sheep



King Lancaster, sired by King Edward, grand champion bull State Fairs, 1909-10-11.

Shorthorn Bulls for Sale, sired by such noted bulls as King Lancaster, Knights Perfection, Greenwood Knight and Greenwood King. Nearly all offsprings of the famous King Edward.

These Bulls are conceded to be the best offering ever made from the Hillcrest Stock Farm.

For Particulars Apply—

T. S. GLIDE
Proprietor.
Davis, California

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San Francisco,

Offers for sale fifty (50) head of eighteen months and two-year-old registered Shorthorn bulls; also a select lot of weanling registered bulls, sired by such bulls as Fond Lavender, College Count 3rd, Beasie's Council and Whitehall of Orange. For prices and particulars apply to

DAVID J. STOLLERY

320 Sharon Bldg.,

California.

Sires With Quality

DUROCS.

Our Durocs are of the big type, with big bone, well-arched backs and carrying good hams.

We have a few head of service boars, now ready for service, solid red in color and out of prize-winning animals.

SHORTHORNS.

Our 1916-17 offering of yearling bulls is small but select. They are all heavy boned, solid red in color and of Scotch and Scotch-topped breeding.

Suited for either the range grower or breeder.

EVERY ANIMAL POSITIVELY GUARANTEED.

Whether you buy or not, visit our ranch, 7 miles from Palo Alto on Woodside Road. We welcome inspection. Prices and pedigrees on application.

Shorthorn Cattle
Duroc-Jersey Swine

ORMONDALE CO.

R. D. No. 1
Redwood City,
California.



Let Me Buy Your Shorthorns - Herefords

I have bought show and breeding cattle for most all of the older breeders in California and my wide experience here, together with my knowledge of Eastern herds makes it possible for me to secure

THE BEST AT A BIG SAVING TO YOU.

I am now taking orders for my next trip East to secure on a strictly commission basis, high class stock for California customers. Write me at once of your wants.

As to the service you may expect I refer you to the following satisfied customers: W. Mayo Newhall, San Francisco; W. Bemmerly, Woodland; Parrott Est. Co., Chico; Frankenheimer Bros., Stockton; A. H. Noyes and Son, Sutter City; Stanford University Ranch, Vina; Wm. Russ, Eureka; and J. A. Donohoe, Donohoe-Kelly Banking Co., San Francisco.

ADDRESS ME

R. M. DUNLAP

DESK A, ROOM 217, UNDERWOOD BLDG., SAN FRANCISCO, CAL.

CATTLE FEED FOR SALE

I have both wild feed and hay to be sold together, and fed out by owner. Write me at once for prices, etc.

JAS. McCORD,

Hanford, Cal.

California Pasteurization Law Misquoted.

To the Editor: In a farm paper published in the East I found this item:

"A state-wide pasteurization law went into effect in California recently, but it has been found that the law must be administered with considerable judgment since both producer and consumer are still in need of education regarding this subject."

What does it mean? Is every farmer in California compelled by law to pasteurize his milk and make it unfit for human use? Isn't that pasteurization idea a cranky fad invented by job-hunting doctors eager to create positions for members of their profession unable to earn their living as doctors? I do not wonder that "the law must be administered with considerable care and judgment," for there must be men even in California who want to drink milk that has not been robbed of its power or life by boiling or half-boiling. If I lived in California I would try to be delivered from "education" whose purpose is to create artificiality. I hope that the wording of the above quoted farm paper is misleading; and that the inhabitants of California have a right to choose whether to drink their water cold or boiled, and their milk in its natural form or half cooked.

Ernest Skarstedt.

East Sound, Wash.

Read Western papers for reliable information regarding Western farming. We would rather drink our water boiled if it had typhoid germs in it; and if our milk contained tuberculosis (which is fully as common in States where cows cannot be outdoors the year around as they

are in California) we would like to be assured that "the bugs" would not hurt our baby. Our veterinary queries indicate many cases of open tuberculosis in cows' bags; our meat packers complain of the high percentage of condemned carcasses of hogs raised on skim milk because the Government inspectors find them tubercular; and we believe that the same is true elsewhere. In such a case, we would prefer the "life" taken out of our milk.

Our law does not make positions for doctors enough to shake a stick at; the only special "care and judgment" required in its administration are due to careless wording of the law itself; our producers need education toward the idea of reading Western farm papers to get the facts which have been published repeatedly in Pacific Rural Press.

Under the terms of the law Californians have the choice of drinking raw or pasteurized milk, but they have the privilege of knowing which it is. If they choose raw milk, they are reasonably sure that it does not contain tuberculosis; for no raw milk may be sold for direct consumption except from cows which have been tested free by the State Veterinarian or his deputies since Oct., 1916, when the law went into effect. Cows from which raw milk is sold must have been pronounced free from tuberculosis, etc.

Self-Feeding Hogs Without Waste.

[Written for Pacific Rural Press.]

One quite general complaint among hog growers who have used self-feeders is that the farm poultry take advantage of the open grain supply both for consumption and for scratching material, wasting in many instances more than they eat.

H. I. Marsh of Stanislaus county overcame this by erecting a feeder, wider than usual at the top with straight-sided bin part of the way down. At the joint where this straight side joined the inclined bottom of the feed container a set of hinged doors, made of rough lumber, were hung so that they would swing in from the top. By this arrangement the doors hang straight down when the hogs are not feeding, thus keeping out all kinds of fowl which are not strong enough to push the doors in. On the other

hand these doors are easily pushed back by the hogs when feeding, being held up by the back of their heads and swinging back in place when the hog leaves the trough.

The feeder is made large enough so that it may be placed on a division line between two pens, each side being alike in construction. There are four divisions in the feeder with a capacity of holding 200 pounds of tankage, 200 pounds alfalfa meal, 400 pounds rice middlings and 400 pounds rolled barley. Regulation of feed is done by board gates which fit into the feed slots and extend to the top of the bins. An improvement suggested by Mr. Marsh is to equip these gates with springs, so that they will fall back in place automatically agitating the feed by the hogs' rooting.

Hog Prices Lower Here---Why?

To the Editor: I am entirely familiar with practically all the conditions under which hogs are fed and marketed in California. I also know that the prices are not what they should be for certain classes of the raw product, and that the discrimination by packers against the home product does the hog-raising industry of the state great injury. For example: Paying 9 cts. a pound for some of the purebred stock which was exhibited at Sacramento, when the price for properly fed stock in Chicago was on the same date nearly three cents higher. This is information which I have obtained from the columns of the Rural Press.

I will tell you exactly what I believe is the trouble in California with the market prices of some of their products which are marketed locally. They need federal super-

vision. It is all right to exclude diseased hogs, and the government will see to that. It is also all right to make the price for a tute hog which has not been either properly bred or fed, proportionately low; but when they will pay a lower price for animals that are properly bred and fed than they do in Chicago or Omaha or anywhere else, and still have the retail product as high or higher than ever, they need regulation.

Tucson, Ariz. Mark A. Rodgers.

We suggest that you attend the meeting of the California Swine Breeders' Ass'n at Los Angeles Jan. 18 and 19. Several of the leading packers of the State are on the program and will be graceful targets for all such questions. Go to it while you have a chance.

TREWHITT'S BIG TYPE POLAND CHINAS



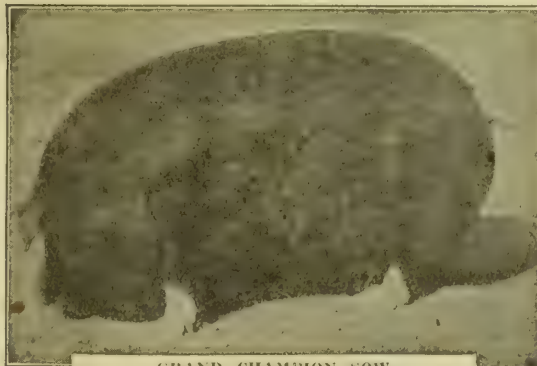
The blood lines of the herd are unexcelled, the foundation stock having been secured from the Topnotch Herds of the Middle West. Sows of fine quality, yet big and roomy. The sort that have large litters of vigorous pigs.

Offering for sale a choice selection of gilts, boars and bred sows.

W. D. TREWHITT,

HANFORD, CAL.

BASSETT'S POLAND CHINAS



GRAND CHAMPION SOW.
P. P. I. E. 1915; Sacramento 1916.

For many years, at widely separated how rings, under many different judges of varying type ideals, my Poland Chinas have been consistent prize-winners. My herd is large, and I cull closely. The animals sent out as breeders are the very tops of a large number. I KNOW that my kind of Poland China is a profitable farmer's hog, for I send carloads of them to the packer every year—uniform in size, high in quality, quickly and economically matured and finished. Young stock, \$30 Up.
M. BASSETT,
Bx. 1, Hanford, Cal.

The World's Grand Champion Hampshires

Pure-bred Hogs give more weight for less money in the shortest time. Sows, Boars, Gilts, bred and open, from the World's Champion Hampshire Stock. All ages for sale.



Write to

F. V. Gordon, or F. A. Langdon, Llano Vista Ranch, Perris, Riverside Co., Cal.

DUROC JERSEYS

Cherry Red Color.

HERD SIRES:

Tulare Boy

and

E. N.'s Colonel

Tulare Boy was Sweepstakes Winner at 1915 Fresno Fair. Weighed 276 pounds at six months of age.

Choice Breeding Stock For Sale

John P. Walker
Visalia, California

For young calves the best temperature for the milk is 100 degrees.

TAMWORTH'S

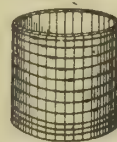
(The Bacon Hog)
Largest Herd in the State

DUROC - JERSEYS

Mature Stock and Weanlings of both sexes. Sure to please.

SWINELAND FARM.

W. O. Pearson, Prop. Woodland, Cal.



BEDWOOD TANKS — SILOS. Thirty-five years in this business in Stockton.—A 500-gallon tank, \$8.00. A tank 6 ft. x 2 1/2 ft., \$7.50. Other tanks equally cheap. I deal direct with the consumer, saving 10% to 25%. All sizes in stock. Clear, dry redwood direct from the mill. Write for price today.

Latest improved machinery. Doors, Windows, Frames, Mouldings.
E. F. WILSON, STOCKTON, CAL.

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Will conduct sales anywhere in California

Purebred livestock sales given special attention

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T. J. GILKERSON, Lemoore, Cal.

Rhoades & Rhoades

Expert Live Stock Auctioneers

Purebred Stock Sales a Specialty

Sales Conducted in All Parts of Calif.

Ben. A. Rhoades, Auctioneer.

1501-3-5 So. Main St., Los Angeles, Cal.

Live Stock and Dairy Notes.

[Livestock breeders all over the State are invited to send on postal cards, notes regarding their sales, State and County Fair intentions, new stock, etc.]

THE DAIRY.

C. H. Gillespi and D. S. Wall of Los Angeles have recently purchased 100 acres of land near Orland where they will establish three dairies.

During the past month the Hutton certified milk dairy at Dixon has suspended operations and the cows sold to the Timm Dairy at that place. Mr. Hutton has been in the milk business a number of years.

Wing and Wing, proprietors of the Golden State Dairy Farms at Dixon, are now shipping about 500 gallons of milk a day to Oakland from their combined dairy and pasteurizing plant at Dixon.

D. M. Campbell is starting a cheese factory at his ranch north of Dixon and during the next month expects to enlarge his plant to a capacity of 5000 pounds of milk daily. Dairymen in that section are disgruntled at the treatment accorded them by San Francisco milk dealers.

Owen Duffy, business manager of the Napa State Hospital, advises us that he is endeavoring to have the members of the California Holstein Breeders' Ass'n hold a spring meeting at the Napa State Dairy. The model barns and good cattle will doubtless appeal to the association's members.

W. L. Bowron has just completed a new dairy barn, 128 feet long and 34 feet wide, on his place in Stanislaus county. The barn will accommodate 60 cows, has concrete floors and is equipped with milking machines. Mr. Bowron expects to engage in the dairy business on a large scale.

Charles H. Holmes, of Los Angeles, who owns a ranch five miles east and one mile north of Tulare, has just shipped a fine Holstein bull to Tulare. The bull is a son of Prince Ruda Korndyke, and his dam is from a brother of Aralia De Kol, world's record cow, who produced over 1100 pounds of butter in one year.

*Word was received last week from the East by Clifford F. Reid of Oregon that his Jersey cow Goldie's Nehalem Beauty had broken the world's butterfat record by producing an average of two and a half pounds of fat a day for an entire year. The record was previously held by Lass 74th of Hood Farm.

Although January 1 was the day set for the new Cream Pooling Association in Madera county to have commenced operations a report from Chowchilla states that many dairymen in that district were doubtful of the ability of the successful bidders to pay the proposed price and did not, therefore, change creameries.

At a meeting of milk producers held at Stockton last week at which State Market Director Weinstock was present a movement was started to get reliable information as to the cost of producing milk in that district. One dairyman present stated that he had kept accurate account of his business and found that it costs him 13 1/2 cents to produce a gallon of milk.

In order to more fully acquaint dairymen and breeders with the California Cow-Testing Competition Prof. F. W. Woll of the University of California addressed members of the Humboldt County Dairymen's Ass'n at Ferndale Jan. 10 and members of the Ferndale Cow Testing

Ass'n on Jan. 11. He will also address members of the California Milk Producers' Ass'n at Los Angeles Jan. 17.

Two of the high records recently made by Holsteins at the Stanford University's ranch at Vina, Tehama county, are 468.6 pounds of milk containing 31.92 pounds of butter, produced in seven days by Boweda, a six-year-old cow, and 491.8 pounds milk containing 26.09 pounds butter by the six-year-old cow Dormoon. Both of these cows were sired by Sir Dorinda Jewel and both are entered in the California State Dairy Cow Competition. The work of improving small dairy units on this great ranch to lease to dairymen is progressing satisfactorily.

SWINE AND SWINEMEN.

E. B. McFarland of San Mateo county has recently purchased five sow pigs, granddaughters of Laurel Champion, from Frank Steel of Grants Pass, Oregon.

Dr. T. B. Spaulding, veteran Poland China breeder of Turlock, advises us that he has recently sold six Poland China pigs to the Houston Pig Club members, five splendid gilts to Mr. Anderson of Denair, a fine boar to Ralph Scott of Selma and an elegant yearling boar to E. P. Campbell of Atwater.

At a hog raisers' meeting held at Hanford last week Dr. B. J. Cady warned farmers against indiscriminate buying of hogs because of the danger of hog cholera involved. He believes that growers must cooperate if they would lessen the loss from this disease and recommended the more general use of hog cholera virus and serum.

J. M. DeVilbiss, breeder of purebred Duroc Jersey swine at Patterson, Cal., after a few much-appreciated words in commendation of the Pacific Rural Press as a journal of rural information and also as an advertising medium, says: "When I came from the corn belt I had no idea of starting a purebred herd on the Coast, but, having handled purebred hogs for over thirty years, it has become a habit. I believe the prospects for the breeder are very bright, and I have in the last twelve months added a thousand dollars' worth of new blood to my herd."

Geo. M. York and Son of Modesto announce a dispersion sale of their purebred herd of Berkshires at Modesto, January 20. In establishing this herd Messrs. York took great pains to secure highly bred foundation animals, securing as herd headers the boars Premier Leader, a son of Grand Leader that was awarded grand championship honors at the Stanislaus County Fair last year, also Loyal Duke 6th, a boar that was second in the senior yearling class at the 1916 State Fair. There will also be a number of aged sows and bred gilts in the consignment.

To further strengthen his already strong herd of Berkshires, Arlington Smith of Visalia has recently purchased from Winona Ranch, Grants Pass, Ore., a young breeder's show herd that Mr. Steel had contemplated showing himself next year. The three gilts of this lot are daughters of Laurel Champion and out of Princess Royal, making them full sisters of the Smith boar Winona Royal Champion 5th. The boar to head this herd is a son of Big Four and out of Silbirta Duchess 15th. Mr. Smith also purchased at the same time a daughter of Laurel Champion out of an English bred sow and will accordingly have a strong show herd in all classes at the coming year's fairs.

HENDERSON CO. MAKING RECORDS.

The following seven-day records have recently been made at the Hen-

LIVESTOCK DIRECTORY.

Rates in this directory, 3c per word each issue; or if carried weekly for one year, 2 1/2c per word.

SWINE.

Poland Chinas.

SMITH'S POLAND-CHINAS—Sows and gilts bred to order. First Prize Boar at the Wisconsin State Fair, 1915. These sows and gilts, sired by Iowa Wonder, who is a son of A Wonder, the most celebrated Poland-China boar, living or dead. Litters from this mating are the best I have ever seen anywhere. Prices low quality considered. Will sell one or a carload. As a special inducement each purchaser will be given a year's subscription to the American Swineherd, the best swine paper published, and a copy of the Handbook on the Sow; also a copy of the Pig Feeders' Manual. Geo. A. Smith, Corcoran, Cal.

TURLOCK PARK RANCH, Turlock, Cal.—Registered—Biggest Type, Big-boned breed of Poland Chinas. The prettiest, the most prolific and the easiest fattened—the biggest and most profitable hog on earth. Sows weighing six and eight hundred pounds, with coats like silk and with showing quality. Open and bred sows and massive young boars for sale from a line of 1000 pound boars—the largest and best blood-lines of the breed. Nothing but tops tolerated or sold from my ranch. Inquiries and visitors cordially welcomed. Dr. T. B. Spaulding, Importer and Breeder of the World's best hogs.

MAKE BIG MONEY with our Big-type Poland-Chinas. Smooth, easy feeders that make greatest weight in shortest time at lowest cost, topping the market at 225 lbs. in 6 months. 300 head, both sexes, all ages, reasonable prices. Best Eastern blood lines. Satisfaction guaranteed. Ranch in Tulare county, but address owner, E. H. Whitten, 610-A Security Building, Los Angeles.

GRAND CHAMPION SUPERBA POLANDS—A few choice spring Superba boars ready for service. Sows bred to Superba for fall litters. Prices reasonably low. Rough's Greenfields, Arlington Station, Riverside, Cal.

FOR QUICK SALE—Registered Poland-Chinas. 15 boars four to six months old, \$20 each. 10 gilts same age, \$15 each. Registration free. Stock first class. C. L. Vanschoeck & Sons, Chico, Cal.

REGISTERED POLAND-CHINA BOARS of serviceable age. A Wonder and Chief Picture breeding. Every animal guaranteed. Price \$25. Bar N. Ranch, E. A. Noyes & Son, Irons, Sutter, Cal.

POLAND-CHINAS—Bred gilts, \$15; young boars, \$10 and \$15; bred sows, \$25. Weanlings, either sex, \$6. Registered and crated, purchaser to return crates. E. A. Hall, Watsonville, Cal.

REGISTERED POLAND CHINAS—Young boars ready for service. Weanling pigs, both sexes. Prices attractive for quick sales. J. H. Cook, Paradise, Cal.

REGISTERED POLAND-CHINAS—Prolific, fabulous, profitable porkers. Choice boars now ready for service, \$25 each. Weanlings, \$15. Dr. J. A. Cawshaw, Hanford, Cal.

LAKESIDE STOCK FARM POLAND CHINAS—money-makers. Satisfaction or money refunded. Geo. V. Beckman & Sons, Lodi, Cal.

FOR SALE—Two O. I. C. Registered brood sows, one registered Poland-China boar, 47 shoats and pigs. John Willerton, E. F. D., Oakdale, Cal.

POLAND CHINAS—Big type. Shoats, either sex, or in unrelated pairs. O. L. Linn, Linview, Route 4, Modesto, Cal.

POLAND-CHINAS—Big type combined with quality. Choice bred sows, gilts, boars. W. D. Trowbridge, Box 824, Hanford, Cal.

REGISTERED POLAND CHINA SWINE—Prize-winners. Finest stock in the State \$20 up. M. Bassett, Hanford, Cal.

POLAND-CHINAS—Stock for sale at all times. We please you or refund your money. W. A. Young, Lodi, Cal.

BIG-TYPE POLAND CHINAS—Stock from the best herds of the Middle West. N. Hauck, Alton, Humboldt Co., Cal.

REGISTERED POLAND-CHINAS and Duroc Jerseys—Cholera immune for life. T. H. Beckman, Lodi, Cal.

POLAND-CHINAS—Large type. The Browning Stock Farm. W. H. Browning, Woodland, Cal.

DEACON RANCH POLAND CHINAS—Prize winners. Young stock reasonable. Box 27A, Davis, Cal.

KNOB HILL STOCK FARM—Registered Poland-China Swine. A. M. Henry, Farmington, Cal.

AMAWAGE FARMS—Poland-China hogs and Holstein cattle. G. H. Loughery, Visalia, Cal.

POLAND-CHINAS—Prize-winners. Money-makers. W. Bernstein, Hanford, Cal.

REAOAKS RANCH herd of registered Poland Chinas. W. J. Hanna, Gilroy.

REGISTERED POLAND-CHINA HOGS—J. A. Clark, R. 4, Lodi, Cal.

Berkshires.

GRAPEWILD FARM BERKSHIRES—World's Fair Grand Champion Grand Leader 2nd heads our herd, not only himself a champion, but the sire of Champions. At the 1916 California State Fair his daughters won first in all of the senior sow classes, including the Grand Champion Sow. At the 1916 Oregon State Fair a Grand Leader sow was Junior Champion. We are offering a number of choice boars of exceptional breeding and are also booking orders for fall pigs. A. B. Humphrey, Escalon, San Joaquin Co., Cal.

30 BRED SOWS AND GILTS—50—of true Berkshire type and quality, bred to Grand Champion boars, are included in our private sale list now ready for mailing. Write for it today. Silver Birch Farms, Box R. P., Newport, Wash.

REGISTERED BERKSHIRES—Progeny of Improver B. Young stock now ready for sale. Start your herd with breed and strain of established reputation for California conditions. Geo. G. Mockfessel, Berlin, Cal.

BERKSHIRES—I have one of the best herds on the Pacific Coast, including Grand Champion Sow, Reserve Grand Champion Boar under one year, Third Aged Boar, etc. Frank A. Brush, Santa Rosa, Cal.

WINONA BERKSHIRES—Four Sept. 19 and Oct. 6, 1916, sons and three daughters of Winona Lee Champion 2nd, the 650 lb. at 14 months Grand Champion son of Laurel Champion. Average weight pigs, 81 lbs at twelve weeks. Winona Ranch, Route 1, A. Box 10, Grant's Pass, Oregon. F. R. Steel.

FOR SALE—Registered Berkshire Boar Suisun Rival Duke 2nd, 2037 lbs. Farrowed May 18, 1914. Apply Geo. McNally, Middletown, Lake County, or 278 Russ Building, San Francisco.

CHOICE REGISTERED BERKSHIRES—Extra fancy and growthy August sows and sows, \$25 cash. Bred sows, service boars and gilts at reasonable prices. W. H. Waugh, Riverside, Cal.

SPECIAL—Six good service boars and a few sows in pig to Premier Leader due to farrow in October. Geo. M. York & Son, Berkshire breeders, Modesto, Cal.

IMMUNIZED NORMANDY BERKSHIRES—Good type. Breeding stock, any age, for sale at all times. Cast iron guarantee. Arlington Smith, Visalia, Cal.

BERKSHIRES—Bred sows and weanling pigs. Write for prices and pedigrees before buying. Butte City Ranch, Box P, Butte City, Glenn Co., Cal.

REGISTERED BERKSHIRES of prize-winning blood. Write for description and photos. Imperial Stock Farm, Morgan Hill, Cal.

ROSE CREST BERKSHIRES—Rivals Champion Best blood. Open and bred gilts. Service boars. F. L. Hall, Perris, Cal.

CARRUTHERS FARMS BERKSHIRES—Cholera immune. Second annual sale August 2, 1917. Mayfield, Cal.

30 REGISTERED BERKSHIRES—Boars and gilts for sale. J. H. Benedict, Lemoore, Kings county.

HOPLAND STOCK FARM—Registered Berkshires. Prices on application. Hopland, Cal.

REGISTERED BERKSHIRES—Young stock for sale. F. W. White, Elk Grove, Cal.

CHAS. GOODMAN—Breeder of high-class Berkshire Swine. Williams, Cal.

Duroc-Jerseys.

DUROC JERSEYS—My hogs won highest honors at State Fair, taking first prize herd, first prize sow, second prize boar. Were the largest of their age exhibited. Stock all ages for sale. Prices reasonable. Breeding and satisfaction guaranteed. Haden Smith, Route 1, Box 84D, Woodland.

DUROC JERSEYS FOR SALE—Third Prize Senior Yearling at 1916 State Fair. One choice 8-month-old boar. Weanling boar pigs. Enterprise Stock Farm. H. P. Eakle, Jr., Woodland, Cal. R. D. 3.

REGISTERED DUROC-JERSEYS—Service boars from prize-winning stock are money-makers. They grow faster. New England California Corporation, Ripon, Cal.

CROLEY'S BALANCED HOG FEED—the cheapest feed to fatten hogs. Write Geo. H. Croley Co., Inc., Live Stock Supplies, 631-637 Brannan St., San Francisco.

DUROC JERSEYS—Herd boars, E. N. N. Colonel and Tulare Boy. Sweepstakes winner at Fresno, 1915. Choice breeding stock. J. P. Walker, Visalia.

REGISTERED DUROCS—Service boars and open gilts from High Model, Defender and Crimson Wonder stock. River Bend Farm, St. Helena, Cal.

RANCHO RIBUS DUROCS—All sold except a few July and September gilts. Extra good. Write for prices, Elmer Lamb, Cores, Cal.

REGISTERED DUROCS of guaranteed breeding. All ages. Weaned pigs, \$10. H. E. Boulder & Son, Napa.

HEAVY BONED DUROCS—A few service boars for sale. Ormondale Co., Route 1, Redwood City, Cal.

REGISTERED DUROCS—Crimson Wonder stock. Young stock, both sexes. L. D. Collins, Denair, Cal.

REGISTERED DUROC-JERSEY SWINE—Both sexes. Big-boned type. B. F. Kendall, Hanford.

WINTON DUROC-JERSEY FARM, Winton, Cal.—High-class pure-bred hogs both sexes, any age.

DON HERMANOS REGISTERED DUROCS—Duveneck & Pickersgill, Ukiah, Cal.

CURTIS DUROCS of either sex at all times. E. C. Curtis, Napa, Cal.

REGISTERED DUROC-JERSEY SWINE—Feedstock M. Johnson, Napa, Cal.

DUROCS—For type, both sexes for sale. Ed. E. Johnson, Turlock, Cal.

REGISTERED DUROC-JERSEYS—S. S. Southworth, Napa.

Yorkshires.

LARGE YORKSHIRES—Choice spring boars, gilts and weaned pigs from Champion sow P. P. I. E., or from breeding of champion boar and sow, Sacramento, 1916. If you see them grow you will like them. Riverina Farms, Paradise Road, Modesto, Cal.

LARGE YORKSHIRES—The ideal hog for the progressive farmer. Young stock for sale. A. L. Tubbs Co., Calistoga, Cal.

Chester Whites.

BILLIKEN HERD OF CHESTERS—The big prize-winners at the 1916 California State Fair. A real utility breed that makes money for its owners. A few young service boars left; twenty young, open gilts that will be bred as may be desired by buyer. Write for the booklet Chester Whites. C. B. Cunningham, Mills, Cal.

EASY FEEDING—Quick-growing type Chester White gilts and boars for sale. Address M. L. Co. Oak Knoll Ranch, Napa, Cal.

REGISTERED IMPROVED CHESTER Whites—Grizzly Bear Ranch, East Auburn, Cal.

Essex.

LITTLE BLACK ESSEX—Service boars and weanlings. Only herd in the State. Limited supply. Yolo Essex Herd, L. W. Millsap, Yolo, Cal.

Hampshires.

BELLA VISTA HAMPSHIRE SWINE—from prize-winning stock. J. W. Henderson, First National Berkeley

Hog Cholera Serum

I represent one of the greatest Government Inspected Hog Cholera Serum Plants in the whole country.

NO BETTER SERUM MADE.

An ounce of prevention is worth a pound of cure. Find out about this serum today. Price Right.

For particulars address.

CARRUTHERS FARMS,

MAYFIELD,

CALIF.

DAIRY CATTLE.

Holsteins.

FOR SALE—From 1 to 100 extra fine, straight, well-marked, light colored, highly bred, registered Holstein heifers from 6 to 18 months old. They are rich in the blood of King of the Ponds, Pontiac Korndyke, Hengerveld De Kol, Hag Apple Korndyke 8th, King Segis and other most celebrated sires of the breed. Prices very reasonable. Write Geo. A. Smith, Corcoran, California.

REGISTERED HOLSTEINS—Herd sire King Korndyke Hengerveld Ormsby 7th, 86623. His full sister as Junior 3-year-old made 32.04 lbs. butter in 7 days. The record of his dam and his sire's dam averaged 30.98. George Kounias, Modesto, Cal.

REGISTERED HOLSTEINS—Grandsons of King Segis and of world's record cow Creamchale Vale. Will build up the production and value of your herd. Write or call and see them. F. H. Stenzel, San Lorenzo, Cal.

25 HIGH-GRADE HOLSTEIN Heifers, sired All tuberculin tested. Also 35 yearling heifers sired by same bull. Terms and prices apply to W. H. Nichols, 2552 Haste St., Berkeley, Cal.

REGISTERED BULLS by King Korndyke Pontiac and out of A. R. O. cows. A splendid selection old enough for service. Write or call. J. H. Harlan, Woodland, Cal.

40 HEAD of high-class heifers—28 Holstein, 9 Jersey, 4 Durham, 1 Brindle, ranging in ages from six months to thirty. Out of high-class dairy stock and in fine condition. Almondale Farm, Modesto, Cal.

TULARE GUERNSEY AND HOLSTEIN Farm is offering young bulls of both breeds. Excellent breeding. Prices reasonable. W. J. Higdon, Tulare, Cal.

A NICE YOUNG SON from El Prado Wayne Colantha and from a 24.26 lb. dam. J. W. Benoit, Breeder of Registered Holsteins, Route C, Modesto, Cal.

THE McCLOUD RIVER LUMBER CO., McCloud, Cal.—High-class thoroughbred Holstein bulls for sale. Write for prices and pedigrees.

THE HENDERSON CO.—Breeders and importers. Registered Holsteins. Sacramento Bank Bldg., Sacramento.

BREEDERS OF REGISTERED HOLSTEIN cattle and Berkshire pigs. Whittier State School, Whittier, Cal.

REGISTERED HOLSTEINS—A. W. Morris & Sons, Corp., Importers and Breeders, Woodland, Cal.

CREAMCUP HERD—Registered Holsteins Pontiac bull calves. M. Holdridge, Modesto, Cal.

SUNNYSIDE HERD—Registered Holstein cattle. R. F. Guerin, R. 3, Box 58, Visalia, Cal.

REGISTERED HOLSTEIN CATTLE—E. E. Freeman, Route B, Modesto, Cal.

REGISTERED HOLSTEIN BULLS for sale. Sunnyside Ranch, Willits, Cal.

REGISTERED HOLSTEIN BULLS for sale. C. L. Morse, Route B, Modesto, Cal.

REGISTERED HOLSTEIN BULLS from A. R. O. dams. B. F. Anderson, Modesto, Cal.

BREEDERS OF REGISTERED HOLSTEIN Cattle—McAlister & Sons, Chino, Cal.

FOR SALE—Registered Holstein Bulls. Prices right. E. B. Church, Sierraville, Cal.

REGISTERED HOLSTEIN BULLS, \$50 to \$150. Glorietta Stock Farm, Woodland, Cal.

CHOICE HOLSTEIN bulls for sale. No females. Millbrae Dairy, Millbrae, Cal.

HOLSTEIN COWS for sale with records. Dr. Stetson, Napa, Cal.

REGISTERED HOLSTEIN-FRIESIAN Cattle—J. M. Campbell, Escalon, Cal.

A. R. O. HERD OF HOLSTEINS—Alex. Whaley, Tulare, Calif.

Jerseys.

JERSEY BULLS AND BULL CALVES—Sons and grandsons of 2 and 3-lbs. cows. None better. Cheap for quality. N. H. Locke, Lockeford, Cal.

VENADERA HERD OF JERSEYS is now offering the heifer calves from register of merit cows with official yearly record. Guy H. Miller, Route 1, Modesto, Cal.

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JERSEY BULLS AND HEIFERS from Register of Merit Cows for sale. C. G. McFarland, R. 2, Tulare.

YOUNG REGISTERED JERSEY BULL Calves at reasonable prices. O. J. Ames, Oakdale.

JERSEY BULLS—Sons of Gertie's Lad and Gertie's Son's Victor. A. A. Jenkins, Tulare, Cal.

REGISTERED JERSEYS—Young bulls and bull calves. T. B. Purvine, Petaluma, Cal.

JERSEY BULLS from Register of Merit cows. C. D. Hayworth, Modesto, Cal.

Guernseys.

PACIFIC GUERNSEY HERD—Cattle selected from best imported and Advanced Register Stock. Now offering choice bulls. C. S. Rasmussen, Lolo, Cal.

EDGEWOOD FARM GUERNSEYS—First in the show ring and in official records. Few animals of either sex for sale. Edgewood Farm, Santee, Cal.

BELLA VISTA GUERNSEYS—Males from A. R. dams, \$100 up. J. W. Henderson, 1st National, Berkeley.

Ayrshires.

AYRSHIRES—Registered; all ages. E. B. McFarland, 412 Claus Spreckels Bldg., San Francisco.

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1500 HEAD HIGH GRADE HEREFORD cows. Some calves by their side. 300 head fine yearling steers. 200 mixed weaned calves. Sixty head exceptionally well-bred grade Hereford bulls. Ten head of very choice registered Hereford bulls ready for service. G. R. Patton, Porterville.

derson Company's ranch near Galt by members of their registered Holstein herd:

Sunnyslope Anna Prilly, a 2-yr.-old, 13.93 pounds of butter from 359.2 pounds of milk; Bessie Oak Segis, a 2-year-old, 18.61 pounds butter from 290.1 pounds milk; Cleopatra Walker Colantha, a 2-year-old, 15.10 pounds butter from 372.0 pounds milk; Margill Pauline Pet, 6 years old, 21.01 pounds butter from 500.9 pounds milk; Nina Walker Pauline, a 2-year-old, 17.66 pounds butter from 396.4 pounds milk; Daisy Oak Segis, a 4-year-old, 20.5 pounds butter from 407.2 pounds milk; De Kol of Glenna, a 2-year-old, 18.05 pounds butter from 377.1 pounds of milk; Susie Fayne Walker, heifer with first calf, 7½ months after calving made 13.30 pounds butter from 353.7 pounds milk; Lorenzo Clothilde Hengerveld, 186935, tested at 4 years of age; 18.26 pounds butter from 443.4 pounds milk.

RIVERSIDE JERSEY SPECIAL ARRIVES.

A shipment of purebred Jerseys has just arrived in Riverside, being

SHORTHORNS—Herd headed by grandson Whitehall Sultan. Calves sired by \$10,000 Prince Imperial for sale. One or a carload for sale. Get our prices before buying. Butte City Ranch, Box P, Butte City, Glenn Co., Cal.

SCOTCH AND SCOTCH-TOPPED SHORTHORNS—We have the largest herd of straight Scotch cows in California. Foundation stock of both sexes for sale; also a choice lot of range bulls. Barco Ranch, Hollister, Cal.

D. O. LIVELY, 215 Hobart Bldg., San Francisco, offers for sale a registered Hereford bull twenty-two months old and a registered Shorthorn bull coming three years old. Correspondence solicited.

FAIR OAKS RANCH, Willits, Cal.—Young registered Shorthorn bulls for sale. Sired by Landseer 379318, grandson of Imported Villager 295884.

REGISTERED YEARLING SHORTHORN Bulls—Heavy-boned, thick-meated Scotch and Scotch-topped breeding. Ormondale Co., Route 1, Redwood City, Cal.

BREEDERS OF REGISTERED SHORTHORNS—Milk strain. Choice young stock for sale. John Lynch Ranch, Box 321, Petaluma, Cal.

REGISTERED AND UNREGISTERED—Shorthorn bulls for sale. Paicines Ranch Co., 320 Sharon Bldg., San Francisco.

INNISFAIR DAIRY SHORTHORNS—Registered young bulls for sale. Alexander & Kellogg, Suisun, Cal.

HOPLAND STOCK FARM—Registered Shorthorns. Prices on application. Hopland, Cal.

REGISTERED HEREFORDS—H. H. Gable, Diamond G Ranch, Esparto, Cal.

SIMON NEWMAN CO., Breeders of Registered Herefords, Newman, Cal.

GEORGE WATTERSON—Breeder registered Herefords. Bishop, Cal.

SHORTHORNS—Carruthers Farms, Mayfield, Cal.

SHEEP AND GOATS.

F. A. MECHAM ESTATE, Petaluma, Cal.—Breeders and Importers of Shropshire, Rambouillet and American Merinos, both sexes. Also Red Polled cattle. Take electric car at Petaluma for Santa Rosa for Live Oak Ranch.

SHROPSHIRE—Ewes and Ewe lambs for sale. International winner heads flock. Butte City Ranch, Box P, Butte City, Cal.

KAUPKE BROS., WOODLAND, CAL.—Breeders and Importers of Hampshire sheep.

DORSETS AND ROMNEYS—Dorset ram lambs for sale. John E. Marble, Los Angeles.

WANTED—Small carload of goats for cleaning brush. H. M. Barngrover, Santa Clara.

BISHOP BROS., SAN RAMON, CAL.—Breeders and Importers Shropshire.

CHAS. KIMBLE—Breeder and Importer of Rambouillet, Hanford, Cal.

HORSES AND MULES.

1100 LB. 7-YEAR-OLD CHESTNUT HORSE—Sound, fearless. Good driver, harness and buggy. Write G. L. Camden, Fair Oaks, Cal. Telephone 33F5.

REGISTERED SHIRES—Black Hawk Stock Farm, Importers and Breeders, Easton & Ward, Proprietors, Burlingame, Cal.

REGISTERED IMPORTED PERCHERON Stallion for sale cheap. Hewitt & Hewitt, Dixon, Cal.

MISCELLANEOUS.

SAN FRANCISCO LIVESTOCK EXPORT CO., Eugene R. Croley, Manager, solicits foreign orders for purebred registered and merit breeding animals and fowls. California has great diversity of climatic and other conditions that enable us to select animals that have been raised under conditions similar to those of the location for which they are intended. We should be informed regarding these conditions and be allowed ample time to make selections. Nearly all disappointments in buying afar are the result of insufficient information as to conditions or to lack of time for proper selection. Our plan and terms for "raising animals to order" to fit into peculiar foreign conditions is worth investigating. References: Dunn or Bradstreet, or San Francisco banks. Office 319 Underwood Building, 525 Market St., San Francisco.

CROLEY'S BALANCED DAIRY FEED—the cheap milk producer; and Croley's Calf Meal—the best California calf raiser. Geo. H. Croley Co., Inc., 631-637 Brannan St., San Francisco.

the first importation into that orange kingdom of this particular breed of stock and the future rival of old King Citrus.

The shipment was selected by a representative of the Riverside Jersey Breeders' Association, together with J. M. Roberts, Field Agent in California for the American Jersey Cattle Club, after a diligent search lasting six weeks, in the East and Middle West. Twenty-one head were included in the shipment, and all are representative of the foremost Jersey families.

The Riverside Jersey Breeders' Association recently started a campaign to advance the interests of purebred livestock in this fruit community, and having backed this trip they are now ready to go ahead at a rapid clip to help diversify the resources of Riverside county and advocate better and more purebred livestock.

COW-TESTING RECORDS.

The following are the names and records of the cows in the Gridley Cow-Testing Association which have produced more than 40 pounds of butterfat during the period of 30 days ending Dec. 31st, 1916:

S. A. Mealey, Gridley, Holstein, 55; J. H. Guill, Chico, Holstein, 49.9; H. F. Harrger, Gridley, Durham, 46.2; L. Hess, Tudor, Holstein, 45.1; H. E. Wickman, Gridley, Durham, 44; H. E. Wickman, Gridley, Holstein, 40.3; Cronby & Keifer, Gridley, Holstein, 43.3; Cronby & Keifer, Gridley, Holstein, 42; Freisleben Estate Co., Durham, 43.1; R. E. Fields, Biggs, Holstein, 42; R. E. Fields, Durham, 42; R. E. Fields, Durham, 41; R. E. Fields, Durham, 40.7.

U. OF C. SELLS BERKSHIRE FOR \$1500.

What is the highest known price ever paid for a purebred hog in California was the \$1500 paid the University of California for the Berkshire boar Star Leader by Mark Regua of Orland during the past month.

This boar was purchased by Prof. J. I. Thompson from A. B. Humphrey at the P. P. I. E. before judging, and is conceded to be the best son of Grand Leader ever exhibited. He has been used at the University Farm to head the Berkshire herd there. We understand Eastern breeders were also endeavoring to purchase him at the time the deal with Mr. Regua was made.

SOUTHERN DUROC BREEDERS TO MEET.

The Southern California Duroc Jersey Association will hold a regular meeting on Jan. 18, 1917, the exact hour and place to be announced by one of the speakers of the California Swine Breeders' Association on that day, at Blanchard hall. All people interested in Durocs in Southern California should attend this, and any desiring membership should send their names to R. K. Walker, Devore, Cal., enclosing one dollar for one year's membership.

NEW STATE HORTICULTURAL COMMISSION SECRETARY.

Announcement is made that G. H. Hecke, State Horticultural Commissioner, has appointed Harry Maddox, former secretary of the Yolo County Board of Trade, as Secretary of the State Horticultural Commission. Mr. Maddox has been more or less familiar with the horticultural problems of the State through his association with Mr. Hecke, while the latter was horticultural commissioner of Yolo county.

HOLSTEIN BREEDERS TO RE-ORGANIZE.

As a result of the meeting of the California Holstein Breeders' Association at Sacramento last week, Fred W. Kiesel of Sacramento was elected president and Kenneth Abbott of Milpitas, secretary-treasurer. It is the intention to revise the by-laws and constitution of the association and make the association an active medium in the work of breed promotion in the State.



Gertie's Son, Victor, No. 123159. Dam, Victor Lady Lake (R. O. M.) of 536 pounds butter in 303 days as a 4-year old.

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135 Registered Jerseys in my herd, including 18 Register of Merit Cows. Blue-ribbon winners at 1916 Hanford, Bakersfield, and Visalia Fairs.

Correspondence solicited.

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Testing your cows tells whether they are earning money for you. By the Register of Merit work you can now build up your herd from animals of known production. Science is driving guesswork out of the dairy business. Government records show that the average net profit per cow was increased 129% in eight years by testing. Selection based upon actual dairy merit will produce like results in your herd. Our booklet, "What is Accomplished by Testing Cows," will help you. Send for now. It's free.

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Indispensable in the orchard with special fitness for all low down work. You can hitch closer to your load, plow and cultivate close to the row and save all the worry to man and team. No weight of whiffletrees for man to lug. Everything clear behind team. Use our outfit and save your trees. Highest endorsement of farmers and fruit growers.

Write now. B. F. BAKER CO., NUMBER MAIN ST., BURNT HILLS, N. Y.

VETERINARY QUERIES.

[Answered by Dr. H. B. Wintringham, Petaluma, Cal.]
[Subscribers wishing an immediate reply should send money order for \$1.00.
No charge for questions answered through this department. Name and address of
subscriber must accompany each query.]

HORSE ALMOST PARALYZED.

To the Editor: I purchased a 5-year mare from a grain rancher in the foothills a year ago. She seemed in perfect health. After bringing her to the valley and feeding her alfalfa from December to April, she would seem stiff in the hind quarters when hitched up after being idle 24 to 48 hours, and if driven any distance will get almost paralyzed, sweating profusely. I have changed her feed from alfalfa to alfalfa and grain hay, being careful to feed lightly when not at work. Is it azoturia?—J. R. W., Modesto.

Light feeding when not exercising is the prevention of azoturia and the only one.

BULL LAME AFTER SERVICE.

To the Editor: Two weeks ago a six-year dairy bull covered a cow twice and I left her with him. About 20 minutes later I noticed that the bull was quite lame in his hind foot or leg. He does not bear any weight on the leg. I can't see any swelling, but he doesn't like to have it touched.—W. J. P., Pixley.

Your bull injured himself while serving this cow. If you can locate the seat of lameness apply a good liniment to it twice a day.

SWELLING ON HOCK.

To the Editor: A 7-months colt has a swelling on the hock joint inside and outside. I used a bottle of Absorbine, but it is still a soft puff.—H. S., Plymouth.

Rub tincture of iodine over the swelling daily. You will have to carry the treatment over a period of several weeks.

CHICKEN POX VACCINE AND DISINFECTANT FOR DRINKING WATER.

To the Editor: What is the latest and best way to doctor for canker and chicken pox, and the best thing

to use for disinfecting and to put into drinking troughs?—C. E. H., Modesto.

Vaccination is very successful for chicken pox and canker. The writer prepares this vaccine which sells for 2½ per chicken. Sulphocarbolates is the best internal antiseptic to use in the drinking water.

BLOODY MILK AGAIN.

To the Editor: One of our heifers gives bloody milk from two hind teats. For six or eight weeks after calving she was all right.—B. B. Pacheco.

Many remedies have already been given for bloody milk. See the indexes in last issues of June and December.

PONY'S LEGS STIFF.

To the Editor: Our pony has got so stiff in the shoulders and forelegs that she can hardly move about. We think it water founder.—V. S., San Jose.

Give this animal alum in ounce doses four times a day for two days.

CALVES DIZZY.

To the Editor: From one feeding to another, my calves start walking around dizzy, and drink milk but very little; scour very little. Were doing fine before they sickened. Fed separator milk.—E. R. B., Cayucos.

Additional symptoms will be necessary for diagnosis.

SORE ON BAG.

To the Editor: Our 5-year cow came fresh 5 weeks ago: has a two-inch sore spot on front part of udder just where it joins the belly. I scraped the scabs off to syringe it out with diluted creolin and found it very offensive and mattery. Have been syringing every day, but it doesn't heal at all.—C. E. H., Modesto.

Swab this sore with tincture iodine daily.

Wormy Horses Eat, but do Not Thrive.

Many horses lose condition, or fail to make gains during winter months, because they are infected with worms. This is especially true of colts. Horses suffering from worms generally have a good appetite, but apparently benefit little from the food eaten.

There may be no symptoms which point conclusively to worms, but this

trouble is so common that if the colts and horses are not doing as well as they should for the feed given, a worm remedy may prove of decided value. In treating horses for worms, Dr. L. S. Backus, of the Missouri College of Agriculture, suggests, it is well to keep in mind that the drug is meant for the worm rather than the horse and should therefore be given in as concentrated form as possible. To insure this, little or no bulky food should be fed during the course of treatment, and as the parasites are stupefied by worm remedies rather than killed, the animals bowels should be kept in an active condition so that the stupefied worms may be passed out before they regain their vitality. A well-salted bran mash once a day will generally insure such an action.

The following formula is a worm remedy which is also of value as a tonic: Powdered nux vomica 2 ounces; powdered gentian root 4 ounces; powdered areca nut 6 ounces; sodium chloride 4 ounces; arsenious acid 2 drams. Mix.

Give one heaping teaspoonful to every 250 lbs. weight, every morning and evening for about ten days. The medicine may be mixed with ground feed or sprinkled over oats or corn which has been dampened.



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Will trade for young mules, horses or land.

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Hanford, California

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Raising Poultry for Profit

STARTING THE INCUBATOR.

[Written for Pacific Rural Press by Susan Swaysgood, Pomona.]

The first thing to do in starting an incubator is to clean everything up well with good hot water and sal soda. Start the lamp after boiling the burners in the same kind of water, putting in a new wick, and if they are on hand, put in two thermometers, so as to guard against mistakes. It will require more heat to keep your incubator going in winter than in summer, so turn up the wick fairly high. To be safe in turning the wick up you must know the kind of oil you are using, as a poor grade of oil is more or less sooty and will be sure to cause trouble. Few incubators have draft enough to consume poor oil without making soot which gathers in the air passage, sometimes putting the lamp out and filling the egg chamber full of smoke. When this occurs, always investigate the oil and change for a better grade as soon as possible.

It sometimes happens that the lamp takes fire when a poor grade of oil is being used, and this usually happens without a bit of warning, at least that is what the operator thinks, but it is simply that he has not understood the warning or not noticed it. When the operator happens to be a woman that is new to the work, she gets scared when the room fills up with smoke. Of course it is time to get in action, but not scared action. Keep cool and grab a gunny sack to handle the lamp with, getting it off the board as quickly as possible, then just wrap the gunny sack around the lamp and the light will be smothered at once.

Never put the lamp on again when this happens, until every vestige of soot has been cleaned out of the pipes and tubes leading to the egg chamber. If the temperature has run up, open the doors and take out the eggs; but if it happens that the egg chamber is too cool, use some means of increasing the heat such as hot water put under the eggs or a hot flat iron, just to keep things going until you can thoroughly clean out all soot, and wash your lamp. Put in a new wick and fresh oil, but, whatever else you do, be sure to make everything clean and free from soot, or you will have the work to do over again and perhaps lose your eggs and courage.

People who write poultry topics do not often touch on these things, for one thing they have gotten away from them with practice themselves, and again, they like to pose as never having had such "terrible experiences"; but we have all had these troubles, and it was not always our fault, nor is it always your fault, because you may pay a good price for oil and yet it may not be good quality, and I don't know of any sure way of testing oil without using it in an incubator. That is a certain test of quality, for if it burns clear without soot or sparks it is all right. When the thermometer registers 100 degrees, watch it closely, note how long it takes to gain the last three degrees and then commence to regulate it. When it runs evenly at 102½ for three or four hours with-

out changing, it is safe to consign the eggs to it, and if possible this should be done early in the morning so that there will be time to warm them before night. If the machine has been properly regulated before putting the eggs in, it will not need much regulating for several days; but it is always best to keep close tab on it. There is no such thing as "luck," in running an incubator; it is simply paying attention to details and being faithful and regular in doing what is to be done.

For instance if your lamp is filled at four o'clock today and five o'clock the next day and somebody calls your attention away the next day at five o'clock, then you begin to think of supper; and filling incubator lamps does not jibe with supper conditions at all, so it clear escapes your memory until bedtime. You may think, if the lamp is still going, that this is "luck," but it is not. It may be nice weather and the incubator is not consuming as much oil as usual, so just congratulate yourself and be more careful in future. Personally I like to fill lamps in a morning, but if the weather is very cold, unless the lamp is large, I always put in a little more oil to make sure at egg turning time in the afternoon. This lets me sleep easier because then I feel sure all will be well until morning. Running incubators under changing weather conditions is hard on the nerves, at least it is on me, and there are very few incubator houses weather-proof in California.

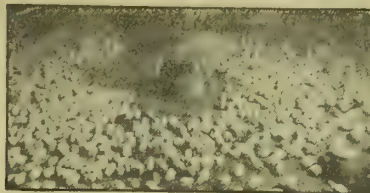
Always turn the eggs before filling the lamps, then there will be no oil on your fingers to hurt the eggs. Always do both chores at the same time each day, making as equal a division in time as possible. This means if you do not turn the eggs and air them until eight o'clock in the morning don't hurry to turn them in the afternoon but give them all the time you can compatible with your other work. Running an incubator is simple and easy, but it does require a certain amount of judgment and a great amount of common sense in following directions and keeping track of time.

I never turn the eggs at first until forty-eight hours have passed, then take out one tray at a time, turn the eggs swiftly but gently and put pack at once. At this stage the germs are barely started; and if the eggs receive a jar or jolt the germ is injured if not killed outright, so we handle very carefully until after the ninth day when they will stand considerable rough handling, in fact it seems to do them good.

The danger zone is from the first to the fifth day, if eggs are either chilled, over-heated or jolted during that period they will not hatch so well nor will the chicks be so strong if they do hatch. After the fifth day the eggs should be turned twice a day; but not until the ninth day will it be necessary to air them over a few minutes during cold weather. When the warm days of summer comes they can be aired from the fourth day to good advantage.

After the tenth day let the thermometer creep up to 103, but not

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over that because if you do you will have to give them more heat in brooding. Don't forget that when the incubator is run high, the chicks always need a higher temperature to brood them; and if they don't get it they suffer from chills and diarrhea. I think it would pay hatchery men to warn customers to brood extra warm in such cases, but nine out of every ten, chick buyers have no proper brooding devices, and the chicks get chilled and die, when they could be raised by better and warmer brooding.

Hens Stop Laying.—Will feeding hens moldy Egyptian corn and letting them out early on frosty mornings stop them from laying?—G. L. J.

Feeding moldy grain of any kind is injurious to all poultry, because it causes disease of the lungs and intestines, but whether it would stop them laying, suddenly, I do not know. But letting them out on frosty ground may stop them as sudden as a gun. Keep them in until the ground warms up and furnish them something to scratch in to start up circulation.

Six thousand turkeys were shipped from Tulare for Christmas consumption. The value of the shipments was placed at \$18,000.

California Poultry Practice

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EXTRA QUALITY White Leghorn chicks, 13¢ until March 1st, then 15¢. Carefully bred from MacFarlane, Young, Martin, and Cyphers strains of foundation stock. Eggs, \$1.50 per 15, \$2.50 per 30, \$5.00 per 100, \$50.00 per 1000. Acres of free range connected with our breeding pens, 20,000 feet under roof. Only Jubilee incubators used; despatched every hatch. Don't save 2¢ per chick in buying, and lose a dollar per pullet in raising; get the best and succeed. Newton Poultry Farm, Dept. 1, Los Gatos, Cal. Catalogue free.

THE J. K. BIGELOW POULTRY RANCH and Hatchery—300 acres devoted to superb vigorous Hoganized White Leghorns. Bigelow chicks are incomparably superior to the product of ordinary commercial hatcheries. Prices same as former seasons—10 cents each till April 1, 9 cents during April and May, and 8 cents thereafter. 10% deposit required with order. The Bigelow Poultry Ranch, Sonoma, Cal.

BARRED PLYMOUTH ROCKS—COCKERELS—Cockerels—Yes, we have them; also Hens and Pullets—all bred from our Champion Winners at California's leading shows. Also hatching eggs. If it's Barred Rocks you want, get in touch with me right away. Have bred them exclusively for nineteen years. Send for Catalog. Chas. H. Volden, Box 394, Los Gatos, Calif.

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WHITE PLYMOUTH ROCK, White Leghorn Incubator Chicks. Breeding stock. Eggs high class. Scientifically bred. Awarded all first prizes. California State Fair 1916. Make your arrangements for 1917 delivery of chicks. Mahajo Farm, P. O. Box 597, Sacramento, Cal.

WANTED—A number of hot water incubators, Jubilee preferred, 200 egg capacity or over. 220-egg type, Hoganized, S. C. White Orpingtons and Sicilian Buttercups, cockerels, hatching eggs and chicks. All information gladly furnished. M. E. Woodhams, San Mateo, Cal.

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WHITE LEGHORN AND BROWN LEGHORN day-old chicks from healthy, vigorous breeders. "Chicks well hatched are half-raised." Will be pleased to send you our circular. San Jose Hatchery, 373 Meridian Road, San Jose, Cal.

S. C. WHITE LEGHORNS (Martin Strain)—Exhibition and utility combined. Hatching eggs, \$1.50 and up to 15¢; \$6 per 100. Pons headed by prize winners. Cockerels, \$5 each. Chas. H. Myers, Hayward, Cal.

THOROUGHLY BRED S. C. W. Leghorns—Cockerels, \$2.50 each, from strong vigorous hens, typed to lay 200 to 260 eggs per year each. Also booking orders for baby chicks. Jay Maxwell, Madera, Cal.

HATCHING EGGS from our "Bred-to-Lay" S. C. White Leghorns. Season opens Dec. 1st. The early hatch lays the early winter egg. Booking now. R. H. Dickinson, Dept. IV, Los Gatos, Cal.

THE SANTA CLARA VALLEY HATCHERY solicits your orders for Fall and Spring delivery in 8 breeds of baby chicks. Order early and get the best. Jos. A. Bihn, Lincoln Ave., San Jose, Cal.

RHODE ISLAND REDS—Cocks, Cockerels, Pullets, Hatching Eggs. Blue Ribbon winners at last Oakland Show. Wm. Larm, 3915 39th Ave, Fruitvale, Cal.

JUBILEE HATCHERY, Petaluma, Cal.—White Leghorn and Black Minorca chicks and hatching eggs. Circular "How to Raise and Feed Chicks" free.

S. C. RHODE ISLAND REDS—Pullets and Cockerels. One Black Orpington Cuck Eggs from R. I. Reds and Silver Campines. Mrs. R. S. Sweeney, Woodland, Cal.

INCUBATORS—For Essex Model Incubators at factory prices, write Geo. H. Croley Co., Inc., Poultry Supplies, 631-637 Brannan St., San Francisco.

BABY CHICKS (White Leghorns)—shipped on approval before receiving. No weak ones changed for. Schellville Hatchery, R. F. D., Sonoma, Cal.

WHITE LEGHORN BABY CHICKS from selected best laying stock. Only strong, healthy chicks sent. Mrs. G. Logan, Morgan Hill, Cal.

DAY-OLD CHICKS—These chicks are hatched from our own flock of 8,000 Utility White Leghorn Hens. George Bros., Petaluma, Cal.

BARRED ROCKS—Grand lot of high-class breeding males and females for sale. Satisfaction guaranteed. G. E. Tobin, St. Helena, Cal.

WHITE WYANDOTTES—Blue-ribbon winners. Eggs \$2 to \$5. Chicks pullets, cockerels. R. W. Staweski, Route 2, San Jose, Cal.

HATCHED CHICKS from Barred Rocks, R. I. Reds, White Leghorns. Good stock. Send for circular. G. L. Hawley, Madera, Cal.

EASTMAN'S REED TO LAY Barred Plymouth Rocks, Chicks, Eggs, Cockerels. Fairmead Poultry Farm, Fairmead, Cal.

LOS ANGELES POULTRY SHOW.

[Written for Pacific Rural Press.]

The twelfth annual meeting of the Southern California Poultry and Pet Stock Show was held in Los Angeles January 3 to 9 and was one of its biggest and best. There were 1580 entries in the poultry department, 350 pigeons, and 200 rabbits. Every variety of fowls were represented and there were many beautiful birds. The feature of the show was the Black Minorcas. For the first time the America Black Minorca Club exhibited in competition in California. The entries of these great layers and beautiful fowls reached 190. Among the exhibitors were Goodacre Brothers of Compton with fifty birds. District Attorney McCartney had fifty birds. J. J. Graves of Redwood City showed 30 Buff and Black Orpingtons and a number of Rhode Island Reds. R. A. Rowan of Los Angeles had many entries, showing Spanish Silver Spangled Hamburgs and ornamental bantams. The bantam exhibits were very numerous and very pretty. Turkeys were well represented, the bronze, white and red all being on hand, and there were some very handsome birds among the entries. Pekin, Indian Runner and Rouen ducks were on hand in good numbers and attracted much favorable comment.

The following gives the number of the different varieties of chickens shown: Plymouth Rocks 235; Wyandottes 77; Rhode Island Reds 221; Rhode Island Whites 5; Light Brahmas 51; Partridge Cochins 5; Lanshans 14; Leghorns 110; Minorcas 203; Black Spanish 11; Andalusians 14; Golden Sierras 4; Orpingtons 166; Sussex 26; Cornish 55; Hamburgs 13; Lakenfelder 1; Pit Games 6; Buttercups 10; Houdan 1; Missouri White Fluffs 5; Guinea 1; Bantams 110; turkeys 34; ducks 27; and geese 2.

Mrs. H. L. Barnes of Artesia entered a seven-pound, two-year-old capon which has successfully acted the role of mother to twelve broods of chickens. Another feature of the display was a big cage of silver and golden pheasants with their gorgeous plumage.

The pigeon exhibit was a big one and contained many pretty and interesting birds. For the first time the rabbit fanciers of Southern California joined in conducting a show. There were 210 entries and some

WHITE ORPINGTONS EXCLUSIVELY—Limited number of pullets. Reasonable prices. L. J. Burke, Lemoore, Cal.

CHICKENS, DUCKS, GESE, GUINEAS, Pea Fowl, Pigeons. Wm. A. French, 545 W. Park St., Stockton, Cal.

LASHER'S HATCHERY, PETALUMA—Write for booklet, "The Day-Old Chick Business" and price list.

A FEW SELECTED Andalusian Cockerels at \$2.50 each. Fred W. Wright, Mokelumne Hill, Cal.

TURKEYS, DUCKS, AND GESE.

BOURBON RED TURKEYS and Eggs for hatching. My birds won all the honors in the Alameda County Poultry Exhibition in Oakland, 1914, and just as fine this year. A. E. Balmer, Alhambra Valley, Martinez, Cal.

THOROUGHLY BRED WHITE HOLLAND Turkeys. Toms \$5; Hens \$2.50. Old White Holland Toms \$7.50. Pearl Guinea \$1 each. E. A. McKinley, R. D., Ukiah, Cal.

BRONZE TURKEYS—Young stock of both sexes. Large and vigorous. Eggs in season. Order early. Free circular on turkeys, feed, etc. Albert M. Hart, Clements, Cal.

WHITE HOLLANDS EXCLUSIVELY—Only high-class birds from prize-winning stock for sale. Rockwood Farm, 201, Route 6, Santa Rosa, Cal.

MAMMOTH BRONZE TURKEYS and Eggs. Booking egg orders now for early Spring delivery. M. M. delman, Planada, Cal.

very beautiful bunnies. There were 67 Flemish giants alone. The Los Angeles Fur Farm showed a number of rabbits raised for their fur. They had long hair and were very beautiful. Included in the exhibits were English Long Hair; English Long Ear; German Checked; Giants; Dutch Imperials; Kai-Gais, Himalayas, and Angoras. Farming rabbits for their fur is said to be very profitable, as high as \$2.00 to \$5.00 being paid for pelts.

The reports of the 54 associated cold storage warehouses of December 1 showed only 1,336,000 cases of eggs on hand against 2,040,000 cases the same date last year, a falling off of 704,000 cases compared with a year ago. There were loaded out of the warehouses during the month of November 881,000 cases against 1,058,000 cases to November of last year. The high prices this year have much to do with the lighter movement of eggs into consumption this year than last. The very light stocks, however, make the market situation a strong one, and the storage supply will doubtless be exhausted early in the new year.

Temporary organization of the Poultry Producers' Association of Southern California, Inc., under the new Weinstock marketing plan has been effected. In the temporary organization the directors of the old federation were elected as temporary directors.

Classified Advertisements

MISCELLANEOUS.

EVERY SIZE WROUGHT IRON WATER Pipe and screw casing water pipe, guaranteed as good as new. Prices right. Send for catalogue. We beat no one; everybody gets a Square Deal. Weissbaum Pipe Works 160 Eleventh St., San Francisco.

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ASK FOR SNOW'S GRAFTING WAX—In use all over the State. If your grower does not keep it, send to D. A. Snow, R. D., Box 548, San Jose, Cal.

TO REDUCE THE HIGH COST OF LIVING, send for our Wholesaler to Consumer Catalog. Smith's Cash Store, 106 Clay St. San Francisco.

"HOW TO LIVE ON LESS"—a guide to cheaper living. Wholesale catalogue free. Pacific Co-operative, A236 Commercial St., S. F.

SEEDS, PLANTS AND TREES.

ORDER NOW—Genuine Giant Crimson Winter Rhubarb. The choicest and earliest of all varieties, producing bountiful crops, when other varieties are out of market. Can grow between orchard rows with big returns. 30¢ each; \$1.50 per ten; \$10 per hundred. Mail orders booked now and shipped when desired. A. P. Baker, 1116 The Alameda, Berkeley, Cal.

CALIFORNIA GREATEST PRUNE—Stuart Prune; 27 dried prunes to the pound; bears heavy, strong growth; very sweet like the French prune, only larger. 2000 trees in stock for this year. Also 60,000 almond trees; all kinds of varieties. Write for prices. Ripon Nursery Co., Ripon, Cal.

CITRUS TREES—all leading varieties. Large line Lisbon, and Villa Franca Lemon, and Washington Navel Orange Trees. First-class stock and clean. Special prices to dealers or to growers in carload lots. Randall Brothers' Nurseries, Whittier, Cal.

STRICTLY FANCY SEEDS—Alfalfa, Scarified Sweet Clover, Red Clover, Timothy, Rye Grass, etc. Free Bulletin—"Sweet Clover in the Northwest." Write for samples and prices. Ralph Waldo Elden, Central Point, Oregon.

GIANT WINTER RHUBARB PLANTS—Big profits. From 2nd year first season after planting I sold 675 boxes rhubarb, receiving \$673.70. Grand Prize San Diego Exposition. Big discount on plants for prompt orders. Booklet Free. W. A. Lee, Covina, Cal.

OLIVES ARE OUR SPECIALTY—We offer for sale fine thrifty trees of the best strains of Mission and Manzanillo. Earliest to ripen; earliest to bear. If that is what you want, we have it. H. Delmers & Son, Exeter, Cal.

SWEET CLOVER—The best legume known for introducing nitrates into soil. A large-producing, non-bloating forage and hay crop. Stands alkaline conditions well. Seed 15¢ per lb. V. M. Shuey, Manzanar, Cal.

HOPLAND STOCK FARM, POULTRY DEPT.

White Leghorn and White Plymouth Rock Cockerels. White Leghorns and White Rock Baby Chicks hatched from specially selected heavy-laying stock. Prices same as last season. White Leghorns, January and February delivery, \$12.50 per hundred; March, \$10.50; after April, \$10.00. White Plymouth Rocks, \$15.00 per hundred. All F. O. B. Hopland.

San Francisco Office,

1210 Flood Bldg.

SPECIALLY SELECTED ARIZONA ALFALFA Seed—the best there is—at wholesale prices. Shipping warehouses at Modesto, Fresno, and in Arizona. You save at least \$2.00 per hundred by buying direct. Send your address for sample and price. Bomberger Seed Co., Modesto, Cal.

WALNUT TREES—Franquette, Mayette and Mammoth on Black Root; also Grafting Wood and Black Seedling Trees. Lowest prices. Mammoth Walnut Nurseries, Watsonville, Cal.

MISSION OLIVE TREES—Raised from my own bearing trees. This is the only sure way to get what one wants. W. A. Hayne, Box 461, Marysville.

FRANQUETTE WALNUT TREES—Grafted on Black Roots. Vigorous stock at lowest prices. Ogden Bolton, Jr., Route 6, Santa Rosa, Cal.

FOR SALE—Ettersburg Strawberry plants, \$2.25 per 1000. Guaranteed to reach you in good shape. Parker Bros., Hemet, Cal.

FOR SALE—Gold Dollar and New Oregon Strawberry plants, \$3 per M. D. R. Bannister, P. O. Box 185, Oakdale, Cal.

QUALITY TREES—Seedlings, 5¢. Prunes, 10¢. Walnuts, 30¢. Cash Nurseries & Seed Store, Sebastopol, Cal.

WANTED.

WANTED—Young men and women to attend the Western Normal Course—Normal and Academic. The Normal Course gives an adequate preparation for teaching, at a great saving in time and money. Academic course gives practical finish to education. Write for Bulletin "A," Western Normal, 524 E. Market St., Stockton, Cal.

ABSOLUTELY RELIABLE MAN WANTED to take charge of my dairy. Gas power. Sharples milkers. House, wood, garden, light work, holidays and permanent job for right man. P. F. Barton, Escalon.

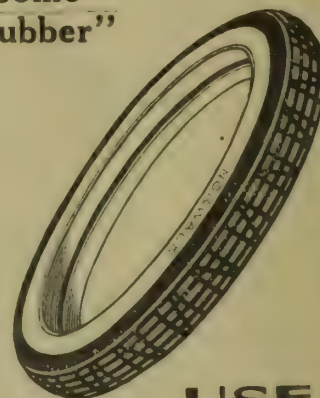
COUNTRY LANDS.

WE ARE AGENTS for the best land in South San Joaquin Irrigation District on the easiest of terms. Address Ripon Nursery Co., Ripon, Cal.

HUMBOLDT STOCK RANCHES—CATTLE correspondence solicited. C. E. Robertson, 105 Montgomery St., San Francisco.

FREE NEW BLUE BOOKLET—State, Government and Indian Lands. Barkrains overlooked. Joseph Clark, Sacramento.

"Some Rubber"



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TIRES

The remarkable reputation these famous tires have gained during the past year attests to their incomparable ability to give motorists absolutely the greatest and most inexpensive mileage.

Ask for Folder and Price List.
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SCIENTIFIC PATENTS AGENCY
911 Crocker Bldg., S. F.
Circular containing 100 mechanical movements mailed free

Mrs. Best's Letter.

My dear Friends: I wish I could take all of you through the stores with me this week that you could profit by the great reduction in many staple articles.

Sweaters have grown to be such a necessary article for all women, that it is no wonder there are all colors, different weaves and all sizes to be seen in any first-class shop.

The Angora sweater rather leads in popularity, but it is inclined to grow rough and then wear off so that the closely woven wool sweater really is the best buy. It holds its shape, is warm and unless it fades is a permanent investment. Most of these come in brilliant colors, purple, yellow, green, deep rose and bright blue, and many of them have either white angora collar and cuffs or gaily striped ones of contrasting colors. These collars and cuffs are sewed on and could be added to an old sweater one wished to freshen up a bit.

There are still shown the woven Jersey cloth sweaters, many of them in striped materials and they are also warm. One of the very new garments, that is called an auto coat, is of Jersey cloth coming clear below the knees and trimmed in fur. This would be toasty warm worn under a loose coat of any sort.

The fibre silk sweater is very much reduced in price and they are being shown in beautiful colorings, but I think when spring comes, we no doubt will see them much worn again. They may be longer and probably will have collars instead of the plain neck. The thin handmade Shetland floss sweaters are popular and are made quite long in soft shades of rose or in white. I know young ladies who have made them at home and there must surely be a large saving in so doing, for they are \$15 in the stores. They are very stretchy, however, and are not of much use for warmth.

Blouses of the same color as one's suit are better style this winter than the all white—they are all of them V-necked with some style of collar, either of the same shade or of a contrasting color. One of the very newest ideas is a pleated collar and cuffs—the collar extending on downward in revers. This collar comes up well on the back of the neck, a style that is becoming to most women. The beaded effects are still popular and can be added to a plain blouse if one has the ability to follow a design.

The generous use of beads on the ready-made blouses adds anywhere from \$5 to \$10 to their price. Sleeves continue to be long and almost always finished by a cuff or soft frill.

Rosabella Best.

MEASUREMENTS.

One pint of liquid equals one pound, two gills of liquid make one cupful, four teaspoonfuls make one tablespoonful, two round tablespoonfuls of flour will weigh an ounce, half a pound of butter will make one cup, four cups of flour make one pound, two cups of granulated sugar make one pound, but in powdered sugar it takes two and one-half cups to make one pound.

THE HOME CIRCLE

THE PLAY HOUSE.

By Olive Day Thacher.

"Rob, come here, please," called Margery Hilton to her brother while they were playing in the barranca one December afternoon. She pointed out an oak tree with a trunk hollow at the bottom, although the tree was still alive and flourishing.

"Well, what about it?" asked Rob, who had been interrupted in the interesting task of looking for wild walnuts.

"Couldn't we make a play-house in there? See that hole near the top of the hollow part. It would make a good window. We could have a gravel floor and make some furniture and have a garden outside."

Rob studied the interior thoughtfully for a few minutes. He was clever at making doll furniture and this kind of play-house seemed more interesting than one built of boards. He and Margery laid their plans and proceeded to carry them out like thorough workmen. Soon the window was curtained and there was a screen behind the larger opening which served as a doorway. The play-house had a smooth gravel floor and contained a table, two chairs and a diminutive hammock. The children also tried their hands at making pottery of a pink substance like clay which had been washed into the barranca from a well.

Beatrice Hilton came home from college for her vacation and Margery asked her if she could crochet a rug for the play-house. "I think I could if I tried very hard," answered the obliging big sister. "What size and colors do you desire, Madam?" A heavy dark-green worsted was chosen for the rug and it was made round. Then Margery's favorite doll held a house-warming celebration. Grace and Jack Burnett, special friends of Margery and Rob, were the guests and Beatrice took down a large pitcher of lemonade and a plate of cookies. She always had to take up the rolling pin the first thing when she came home, for her small sister and brother insisted that no one else could make cookies as good as hers.

Not only the doll used the house, for Topsy, Margery's kitten, liked to curl up on the rug and go to sleep on warm days. The garden claimed

the children's attention next. They brought ferns and wild flowers and planted them near the tree and trained a wild pea vine to grow over the trunk, but a stem of poison-oak that started to climb up was ruthlessly discouraged. Beatrice was studying Botany at college and she told the children interesting things about the ferns and mosses and the lichens that grew on the tree. The season was early even for Southern California, and it was an ideal time to study plants. Margery made a flower pot from part of an acorn shell and set it on a shelf inside the play-house with some moss planted in it.

"Your housekeeping experiment has certainly been a success, Margery," was Beatrice's comment the day she was going back to college. "I sometimes wish they would not fill up the trees on the U. C. Campus with cement. But possibly a junior doesn't know everything about the way the University should be run."

SCRAPPLE.

Three and one-half lbs. end of shoulder, boil in plenty of water until meat will drop from the bones when picked up with a fork; remove from stove and cut off skin and most of fat; chop the lean meat fine, skim the water it was boiled in, return the meat to the water; stir in one loaf of bread broken in small pieces, two even tablespoons salt, one tablespoon sage, one-half tablespoon pepper and a dash of cayenne. Stir continually until the bread is a pulp. If necessary, add water to make as thick as mush. Pour in pan, when cold, cut in slices and fry.

TAN RABBIT HIDE.

Editor Home Circle: Will you tell me how to tan rabbit hide with the fur on?—Mrs. J. R., Petaluma.

A very simple but effective method is to salt the skin heavily, after having scraped off all animal tissue. Roll up and put in a dark place for three days. Then scrape off all the salt and put on enough oil to moisten the hide and knead thoroughly.

To Remove Tacks.—When tacks are difficult to remove from a hardwood floor, try putting a drop of oil on each one. This acts as a lubricant.

TO SAVE LABOR FOR FARM WIVES.

"Do you women who live on farms want to know how to make your work easier and pleasanter by new labor-saving methods?"

This is the question the University of California is asking the women of the State. Now the University has offered to send to any community a woman field agent to demonstrate "scientific efficiency" in the home, to show how the farm home may be made more homelike and attractive, and how the family may get more enjoyment from farm life. Any group of neighbor women, any women's club, or any community desiring such a demonstration, should write to the Agricultural Extension Division at the University of California, and with no charge whatever by the University such a demonstration will be given. The two women field agents, experts in household matters, sent out by the University of California for this work, spend their whole time in the field. The demonstrations are usually held in farm homes, so that the neighbors may come in conveniently and see these demonstrations under the actual conditions of farm life in California.

Floral Department.

By Geo. N. Tyler.

California Garden Flowers. By Prof. Wickson, on page 199: "The Japanese Irises are perhaps the most difficult to grow of the lot, and more are disappointed with them." In Japan they grow the best irises in the rice paddies, or rice fields, showing that they require a great deal of water. I will tell you how a lady of my acquaintance made a great success of them. She had an old fountain with a water-tight basin, with pipe at the bottom so that it could be drained. She covered the opening of the drain pipe with stones and crocks and about two inches of clean straw on top of this, also some lumps of charcoal in the stones, then filled up with rich well prepared soil to within two inches of the top. Planted her iris roots in the spring and after they were well established and growing flooded with water so that it stood over the soil for two inches. I never saw such irises in my life; they were from six to ten inches across, in all shades and colors and had from three to four feet stems. After blooming she drained off the water, but never let the soil get dry, and the following spring they did better still without disturbing them.

To Continue on Fertilizer.—Pigeon dung approaches guano in its power as a manure, also the dung of the domestic fowl is very similar in character. They both make a very powerful liquid manure, using one gallon of fresh droppings to forty gallons of water. Let it stand for forty-eight hours before using. Horn and hoof parings are good manures and should be utilized if readily obtainable. Ammonia is the most powerful of the inorganic manures and one of the most important of manures generally, since it is the chief source whence plants derive their nitrogen. It is largely supplied in all the most fertilizing of the organic manures. It is best applied by the use of sulphate of ammonia as a liquid manure, one pound to fifty gallons of water.

Potash and soda are valuable inorganic manures, but the most extensively used is nitrate of potash. The value of wood ashes as a manure depends upon the carbonate and other salts of potash which they contain. Ashes should be put on as a top dressing in a dry state and the water washes the potash into the soil.

Soot forms a good top dressing. It consists principally of charcoal, but contains ammonia, whence its value as a manure is derived. It should be kept dry until required for use.

Nitrate of soda is one of the standard manures used by florists, but if used by an amateur generally does more harm than good, for it should only be used on plants at certain stages of their growth. One pound to fifty gallons of water makes a safe fertilizer, but do not use too often; once in ten days is plenty and do not use if soil is dry.

Lime of itself is not a fertilizer, but it puts the soil in a fine mechanical condition, so that the denitrifying microbes can work and make all fertilizer in the soil available for plant food. It also sweetens sour soil and makes heavy soils more friable.

THE FARMER FEEDS THEM ALL.

The king may rule o'er land and sea,
The lord may live right royally,
The soldier ride in pomp and pride,
The sailor roam o'er the ocean wide;
But this or that, whate'er befall,
The farmer he must feed them all.

The writer thinks, the poet sings,
The craftsmen fashion wondrous things;

The doctor heals, the lawyer pleads,
The miner follows the precious leads;
But this or that, whate'er befall,
The farmer he must feed them all.

The merchant he may buy and sell,
The teacher do his duty well;
But men may toil through busy days,
Or men may stroll through pleasant ways;

From king to beggar, whate'er befall,
The farmer he must feed them all.

The farmer's trade is one of worth;
He's partner with the sky and earth;
He's partner with the sun and rain;
And no man loses for his gain;

And men may rise, and men may fall,
The farmer he must feed them all.

God bless the man who sows the wheat,
Who finds us milk and fruit and meat;

May his purse be heavy, his heart be light,
His cattle and corn and all go right;

God bless the seeds his hands let fall
For the farmer he must feed us all.

—Selected.

JOHNNY AND HIS HERO.

Jimmy Bryce was a little boy, and Gilbert Murray was a big boy. Jimmy was positive that Gilbert was the finest big boy in the United States of America, which was the same as the whole world, since the atlas could show no other country that could touch his own.

When the teacher had announced that a senior prize would be given for general excellence in study, Gilbert, as soon as recess came, had walked up to Jack Sumner, thrust his fist almost in his face, and, frowning terribly, had said, "The prize is for me, do you hear that?"

Jack had grinned and squinted at the fist, without dodging, and said, "Get it first, honey!"

Then they had both gone to work like beavers and kept at it ever since. Jimmy felt pretty worried sometimes.

"Their general excellence is too much alike," he sighed one afternoon when Gilbert had missed once, and the teacher had praised Jack's Latin composition.

"Our teacher isn't very praiseworthy," sighed Jimmy again. "When he tells you you've done very well indeed it's—it's dangerous."

The next morning Jack was not at school. By and by the Sumner maid came for his books. Jack had the grippe and the doctor had told him he must stay in for a few days, so he wanted his books to study at home.

Jimmy was a little ashamed of himself "for his feelings."

"But," he made excuse. "I didn't give Jack the grippe. He just took it himself by Providence. If he can't study as well for a headache or something, I can't help it."

Jimmy waited after school to work two examples, so he could leave his arithmetic in his desk. He had finished and was pulling the key out of the lock to lock the schoolhouse with it and carry it across the road to the caretaker, when he just

glanced at Jack Sumner's desk and saw the Latin grammar lying there.

The clock on the wall of the big, empty room ticked noisily many times while Jimmy stood stock-still, his face getting darker and darker.

What business was it of his? Latin was the hardest study. If Jack got behind on that some,—well it would help a lot. And he, Jimmy, didn't have to lug a great heavy book all the way round by Sumners'. Who would expect it?

"Gilbert is perfectly fine. If he didn't get the prize and I helped him any not to, I'd always have it against myself forever."

And—and might not Gilbert?

Jimmy's gloomy gaze turned away from Jack's desk. Straying about the room, it fell full on the little rack of books above the teacher's chair. The black book in the middle of the rack had gilt letters on it that Jimmy could see even from the door, or else he knew so well what they were that he thought he could see them.

"Holy Bible," read Jimmy, and his gaze fell like a stone to a knot-hole in the floor.

"The grippe was Providence, but this isn't Providence! It's me," said Jimmy, without regard to grammar.

Jimmy was moving at last. "It's right to do. When you know what's right, you'd better do it and stop thinking of all there is against it."

With a spiteful twitch he thrust Jack's book into his book-bag between the speller and the reader and slammed the door of the schoolhouse behind him, with the biggest, most comforting slam he could give it.

When he had gone a good mile on his long trip he saw a very familiar figure in the distance. It was Gilbert!

Jimmy hurried. Perhaps he could get past the turn in the road before Gilbert got there. But Gilbert was too quick for him.

"Hello, kid!" said he, as he came swinging up. "Did you O. K. those two examples all right?"

One of Gilbert's best ways was that he could always remember what you had on your mind.

"Yes, I did," answered Jimmy, briefly, trying to push on to the cross-roads. Possibly he looked out of the tail of his eye at the stout grammar, thrusting itself above the edge of the book-bag, and so Gilbert looked, too.

With a whoop like a delighted Indian Gilbert grabbed it.

"Jimmy, you are gold!" he shouted. "I was tramping back for that. I found it and laid it out to bring for Jack, and I walked right by it with the eyes of a bat. Maybe, if I fly, I can catch up to the hockey crowd yet. But, here, you needn't go any farther; it's for me to take it the rest of the way."

"No, no!" said Jimmy. "You go and fly. It isn't far now, I'd just as lief finish."

Which was the exact truth, for a light heart had shortened the way to "nothing at all."

"I'm glad," said Jimmy to himself, with a somewhat breathless giggle, "that he doesn't know I was so slow at it. He is perfectly fine! Gilbert is the perfectly finest boy I ever saw, whether he gets the prize or not. I guess, anyway, some things they don't give prizes for are better than those they do."—The Presbyterian.



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By W. S. Guilford

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PACIFIC RURAL PRESS,

Publishers

CORNED BEEF.

Rub each piece of beef well with salt, mix with 1-10 part of saltpeter until the salt is dry upon the surface. Put aside in a cool place for 24 hours and then repeat the process, rubbing in the mixture very thoroughly. Put away again until the next day, by which time the pickle should be ready. This is made of five gallons of water, one gallon of salt, four ounces of saltpeter, one and one-half pounds of brown sugar. Boil this brine ten minutes, let it get perfectly cold, then pour over the beef, having wiped the latter en-

tirely dry. Examine the pickle from time to time to see if it keeps well. If not, take out the meat without delay, wipe it and rub in a dry salt, covering it well until you can prepare new and stronger brine.

Mrs. de Fashion (to her new Chinese cook): "John, why do the Chinese bind the feet of their women?" John: "So they not trotee 'round kitchen, and botheree cook."—Life.

Crushed rock candy of various colors is attractive to serve in place of the ordinary lump sugar.

CARE OF THE NAILS.

A weekly manicure with five minutes' attention to the nails each day should keep the hands in good condition. For the manicure, you will need a bowl large enough to hold a quart of water, in which to immerse the hands and for instruments, a nail brush, cuticle scissors, nail file, an orange wood stick, peroxide and toilet soap. Filing the nails is much better than cutting them and this should be done first. Then dip the hands, one at a time, in the warm, soapy water and when softened use the orange wood stick wrapped with cotton dampened with peroxide to remove the dirt under the nails. This work should be done gently. Then use the flat end of the orange wood stick to push back the cuticle at the base of the nail. If your hands have been neglected and there are rolls of loose skin, cut it away with the cuticle scissors. Hang nails should be closely clipped and a little bit of cold cream applied to the nail and surrounding skin. If a polish is desired, use a nail powder with a chamomis buffer and rub briskly.

For the daily care, use the orange-wood stick wrapped with cotton and keep the skin well pushed back from the nail.

TEA-TABLE IDEAS.

Place a whole clove in the center of each slice of lemon on the lemon dish.

Nut bread thinly sliced and buttered makes delicious sandwiches.

A dash of paprika on cheese crackers adds both to the flavor and appearance.

Baskets are much in favor for small cakes or cookies. A gay tassel on the handle pleases the eye as much as the cakes please the palate.

A dish of salted nuts adds snap to a simple tea.

Trays of silver or china are very good style for sandwiches.

The toasted cheese sandwich is appetizing and more satisfying than the plain toast.

Jam pots of either glass or china are good style.

A clergyman of Cambridge, Mass., many years ago told his people that, if he spoke softly, those at the end of the church would not be able to hear him, and, if loud, those near the pulpit would awake!

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Good Health.

(By H. E. Pastor, M. D.)

The Barefoot Boy in Prose.

An Oakland correspondent writes a somewhat effusive communication to a San Francisco daily extolling the health-imparting virtues of bare legs and bare feet for children. This nature worshiper is a trifle overly enthusiastic in his advocacy of unclad extremities. There may be a legitimate difference of opinion as to the wisdom of allowing little boys and girls to go with short socks and bare legs in all temperate climates, in almost any kind of weather, as the tendency is for the exposed parts to become hardened and inured by the exposure, just as do the unclothed face and hands of all of us. And the hardening process has a salutary protective effect, though the transition from well-stockinged legs to bare legs should not be too sudden.

But the barefoot proposition is quite another matter, and for the reason that the foot, unlike the leg, comes in direct contact with the ground, and "Mother Earth" is not the sweet, innocuous thing that poets and nature lovers would have us believe. Besides the stones and sticks and splinters and thorns with which the "primrose path" of youth is plentifully bestrewn, bestowing bruises, punctures, scratches, and cuts without number, with their infections and disablements and distortions of pedal gracefulness, science has known for a long time that the bare ground, and especially the ground of the farm, over which horses, cattle and poultry roam almost at will, is a hotbed for bacteria and disease germs of various kinds, many of which have a habit of attaching themselves to the skin of their bare-footed victims, and, by burrowing or otherwise, gaining an entrance into the body. The widespread hookworm of the South, so extensively exploited in the newspapers, is but one example of this kind.

But the hookworm, you say, is not found north of the Mason and Dixon line? Perhaps not. But the hookworm is not the only offender. There are others, and even worse, that are not so fastidious about having a tropical or sub-tropical clime for their abode. There is the bacillus of lockjaw, for instance, that loves to roost by the million on a rusty nail or other errant scrap of neglected iron; the bacillus of typhoid, which haunts the dung and the dirt necessarily so plentiful in the farm environment; and there are others. The bacillus of ordinary blood poisoning is everywhere, and the same might be said of the bacillus of tuberculosis. Did you ever step on a bee, dear reader? This writer did so once when a boy; and though that was a long while ago, he still vividly remembers it, for the bee resented the indignity, and bare feet gave him the chance. There are other things of earth just as sensitive as the bee, and even more vicious about letting you know it.

So, we say, don't despise the humble shoe just because it is a human invention. There is no other article of human wear that contributes more to man's (and boys' and girls')

protection and comfort. Supply your children with the necessary footwear, if at all possible. Dame Nature does a great deal for man, but she leaves a few things for him to do for himself. There is no more sense in trusting nature to protect bare feet than to protect bare bodies or to fill empty stomachs, or to find beds for weary little ones at night-fall.

Rice in Health and Disease.

As California is beginning to attain distinction as a rice-growing center, some mention of the peculiarities of this food staple may be interesting to the readers of the Rural Press. It is well known, of course, that rice constitutes a large part of the dietary of the peoples of eastern and southeastern Asia, and that it appears quite generally, as a palatable and wholesome article of food on bills of fare throughout all civilized countries. In countries where rice is almost the sole article of food the natives are noted for their endurance. It cannot be said, however, that they enjoy real robust health, such as do peoples using the more varied diet, with meat as an ingredient. Rice contains but a very small proportion of albumen and fat—about five or six per cent of the former, and less than one per cent of the latter.

Owing to the small amount of mineral salts contained in rice it is uniritating to the kidneys, and is thus a safe food for patients suffering with any form of kidney disease. This poverty in mineral salts, however, gives rice its insipid taste. Its high digestibility and easy assimilation make it a desirable nutrient in stomachic and intestinal troubles. In gouty and arthritic diseases it is a desirable diet, as it leaves little or no uric acid in the system.

Shelled and polished rice, the form in which this grain is usually sold in our stores, is much less wholesome than unpolished rice as the latter contains about five times as much phosphorus as the polished article; hence the growing prejudice against the polishing process. That dreaded oriental disease beriberi, is believed by investigators, to be due to the large consumption of rice in its polished form and its deficiency of phosphorus. As confirmatory of this view, foods rich in organic phosphorus have been found to be both preventive and curative of this disease.

The lesson we are trying to convey in these few remarks is this: Rice as an exclusive article of diet is not satisfactory; as an ingredient in a mixed dietary it is unexcelled.

Beautifiers.

Women should be somewhat chary of the cosmetics usually passed over the drugstore counter. Many of them—most of them in fact—contain lead and arsenic, and while temporarily improving the skin's appearance, they are in the long run positively harmful. In time, they cause the skin to crack, wrinkle and scale—to assume a sort of crepe appearance—and no subsequent treatment with creams or other emollients will ever restore the skin's original fine texture. About the only way of preserving a naturally fine complexion, or of culti-

vating some semblance of such, is to adopt a proper dietary, take plenty of exercise, and secure an abundance of sleep in a well ventilated bedroom. Anything that contributes to the general health conduces to a good complexion. And it's a complexion that costs nothing and doesn't rub off.

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SAN FRANCISCO.

San Francisco, Jan. 10, 1917.

WHEAT.

The Eastern market is rather erratic, but with an export demand which causes a rather firm feeling. Local conditions show little change. Northern bluestem is cleaned up here, and California club is higher, other lines being firm as last quoted. [First-hand prices on strictly first-class grain, San Francisco.]

Sonora wheat \$24.75@2.80
Northern club 2.65@2.70
Calif. club, ctl. 2.60@2.65
Northern Bluestem None offered
Northern Red None offered

BATTLE.

The spot market is firmer, with a slight advance in feed. This is partly due to an easing up of the car shortage, permitting the movement of a large tonnage already sold for shipment. Indications favor a firm market the rest of the season.

Seed, ctl. \$ 2.50
Shipping, ctl. 2.35@2.40
Choice feed, ctl. 2.22½@2.25

OATS.

A few small lots of seed are appearing, but hardly enough to quote. Feed shows a firmer tone, white being higher than last week, with a lively demand and no excessive offerings.

Red feed \$1.80@1.85
White 2.15@2.20

CORN.

Some Eastern corn is offered, and California yellow, though still damp, is moving well at an advance. Sorghum grains continue in good demand at unchanged prices.

[First-hand prices on strictly first-class grain, San Francisco.]

Eastern Yellow, ctl., in bulk \$2.10@2.15
California, sacked 2.20@2.25
Milo Maize 2.00@2.20
Egyptian 2.20@2.25

BEANS.

The demand is still a little quiet, but shows signs of revival, and the market in general is very strong, with further advances in most lines still possible, and no marked decline in prospect. The outside figure on red kidneys has been reduced, as the consuming demand was curtailed on the basis of recent quotations; but the entire stock of this variety left in the State is hardly over 3,000 sacks, and most holders are very firm. Pink and cranberry beans have again advanced, and colored beans in general are quite strong, with a demand from some of the canners.

[Uncleaned, on wharf, San Francisco.]
Bays, per ctl. \$5.50@5.75
Blackeyes 4.50@4.75
Cranberry beans 6.60@6.75
Horse beans 3.25@3.50
Small Whites (south) 7.00@10.50
Large Whites 8.10@9.50
Pinks 6.20@6.75
Limas (south) 7.75@7.90
Red Kidney 9.00@12.00
Mexican Reds 6.50@7.00
Tepary beans 5.90@6.00

HAY.

Arrivals in this market were a little short last week, but are increasing with better weather, which permits the use of stock cars, etc. The car shortage is being relieved a little, but is still bad, as the box cars are urgently needed for high-priced goods. Local business continues dull with little export demand; though offerings move readily, and there is quite a demand for cheap grades, of which little is offered. Country demand is exceptionally strong, as the green feed is still in poor shape; and a good cleanup is expected. Some large sales of alfalfa have been made recently in the country, where prices are comparatively high.

[Prices per ton, carload lots, San Francisco.]

Wheat, No. 1 \$16.00@18.00
No. 2 14.00@16.00
Tame oats 13.00@16.50
Wild oats 13.00@15.00
Alfalfa 12.00@17.00
Stock hay 12.00@13.00
Straw, per bale60@.80

FEEDSTUFFS.

The only quotable change is a little drop in rolled oats. Nearly all lines are moving well, with prices steady.

[Per ton, San Francisco.]
Beet Pulp, per ton \$30.00@31.00
Alfalfa meal, per ton 21.00@22.00
Bran, per ton 30.00@31.00
Oil Cake 40.00@41.50
Cocoanut cake or meal 31.00@32.50
Cracked corn 47.00@48.00
Middlings 39.00@40.00
Rolled Barley 46.00@47.00
Tankage 47.00@48.50
Rolled oats 46.00@47.00
Rice middlings 33.00@34.00

POTATOES, ONIONS, ETC.

Local garden truck of most kinds is very scarce. Lettuce has been fairly plentiful, but celery is scarce and higher. Mushrooms are plentiful, but cultivated stock brings good prices. Mexican, Cuban and Florida stock is a prominent factor. Cold storage onions are about cleaned up, and Oregon stock is moving off rapidly, causing a sharp jump in values; though the extreme figures are hardly expected to hold, as they cut the consumption. Potatoes also are moving well, with very limited supplies, and all grades are advancing. Garlic also is stronger.

Lettuce, crate \$1.00@1.25
Celery, Delta, crate 4.00@4.50
Tomatoes, crate 1.50@1.75
Rhubarb, box 1.00@1.50
Mushrooms, lb. fancy75c
Potatoes, ctl., Delta 2.25@2.70
Salinas 2.50@2.75
Oregon 2.25@2.50
Onions 4.50@5.50

THE MARKET REPORTS

Figures Given Are Independent and Reliable.
Prices Quoted as Paid to Producers.

Garlic, new crop, per lb. ... 3¼@4c

POULTRY.

Eastern chickens are again coming in, but in very moderate quantities; and with local offerings also very light for a few days, prices are higher. A reaction, however, already has set in, as these extreme values are bringing much larger supplies from nearby points; and lower prices are expected soon. Dressed turkeys are scarce and bring good prices. Extra good Belgian hares do a little better.

BUTTER.

No further Eastern movement is reported. Eastern markets being too unsettled to warrant shipment with local prices as high as they are; but some large Government inquiries for Manila have brought more firmness to the market, and while offerings keep up fairly well, prices have stiffened. A jump to 36c the first of the week, however, was not held.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extra	34¼	34¼	35¼	36	35	35
Prime 1sts	33½	33½	34½	35	34½	34½
Firsts	33	33	33½	34½	34	34

EGGS.

Both grades have shown rather sharp fluctuation in the last week, larger receipts causing a little easiness a week ago, while the last few days have brought a jump very unusual at this season. Pullets are but little below extras, owing to the absence of Eastern offerings; and the top grade is no doubt feeling the same influence. Supplies, also, are hardly increasing as was expected.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extra	36¼	36¼	38	39¼	39¼	40
Sel. Pul.	34¼	36	37¼	38¼	38¼	38

CHEESE.

The market still feels the effect of Eastern shipments, though little moving in that direction just now; and flats are higher again. Jack cheese, since the holidays, has dropped back a little.

[S. F. Dairy Exchange prices.]

Y. A.s, fancy 20¼c
Fancy Calif. Flats, per lb 18c
Monterey Cheese 17@19c

DECIDUOUS FRUITS.

Bellflower apples are again lower, as holders are anxious to clean up; but Newtowns remain steady and are moving fairly well, with a good demand for shipment but little chance to ship. Stocks now in storage here are estimated at about 55,000 boxes less than last year. Northern apples, however, are offered freely and tend to ease the market.

Apples
Bellflower, box \$.65@.75
Newtown 1.00@1.15
Pears, Winter Nellis 2.25@2.75

DRIED FRUITS.

The dried fruit situation is still rather uninteresting, as regards current business; and with nearly everything sold the growers are giving more attention to prospects for the new crop. It is too early to speak with much certainty as to future market conditions, but the local packers appear very confident, basing their calculations on the fact that the markets will be absolutely bare long before new fruit is available, while on nearly any basis of figuring the consuming demand of the world will be fully as great as for the past year, and possibly much greater. For the present prices are firmly maintained, and packers expect a gradual increase in the value of their moderate holdings, which would be reflected on anything still in growers' hands. As for prunes, a prominent local packer estimated the stock on the Coast at the end of the year at not over 10,000 tons, with not over 300 tons in growers' hands. [Net to growers, bulk basis, f. o. b. shipping point.]

Apples, new crop 8 @ 8¼c
Apricots, per lb. 1916 15 @16c

Figs, white, 1916 None offered
Figs, black 5½@6c
Calimyrnas, 1916 None offered
Prunes, 4-size basis, 1916 6½@7c
Pears 7 @ 8c
Lake County Pears 11 @12½c
Peaches 6 @ 8½c

HONEY.

Comb honey has been very dull here since the holidays, with no large supplies, but very little demand, and prices are only steady at the old level. Extracted of all grades is very scarce, as some large sales have recently been made for export, absorbing most of what was left either here or in the country. With a continued fair demand locally, prices show a further advance.

Water white, comb 13@14c
Amber 8 @ 9c
Light Amber 10@11c
Water white, extracted 9@15c
Light amber 7 @ 8c
Dark 5½@6c

HORSES.

There is no demand here, but the latest sales have been quite successful on account of the country demand, which has started in well and promises to be active for the next few months. All offerings of desirable quality this week were disposed of readily at full prices; and one car was bought here for the Los Angeles market. There has been no war business here for some time, owing to lack of shipping facilities. No mules are used here, but there is a good demand for heavy and medium weight stock at outside points.

Drafters, 1700 lbs. and up. \$ 250
Drafters, 1550 to 1650 lbs. .. 150@200
Chunks, 1350 to 1500 lbs. .. 150@175
Wagon horses, 1050 to 1350 lbs 110@150
Green Mountain range horses
950 to 1200 lbs. 20 @ 75

MULES.

900 to 1000 lbs. 50@100
1000 to 1200 lbs. 150@175
1200 to 1400 lbs. 175@200

GROCERIES.

The Diamond Match Company has raised prices on its matches 10 to 15 per cent. Canned milk is extremely strong. Provisions and canned vegetables are steady at high prices, with trading quiet. Advances are noted on some kinds of syrup; washing soda and lye; and some lines of tea.

LOS ANGELES.

BUTTER.

Receipts of week ending Jan. 9, 1917
—258,900.
Receipts of week ending Jan. 9, 1916
—272,120.

A steady and firm market was had the past week. Receipts were light, only about enough to supply the home demand, hence there was little incentive to speculate and trading on call was light. In San Francisco, fresh extra advanced 1¼c up to Monday. Chicago was steady and firm for the same time and so was New York. Chicago maintained a 39c market on extras throughout the week and New York a 40@40¼c market on extras up to Monday. While current receipts are running as heavy as a year ago, the cold storage stocks are lighter, both here and in San Francisco and it is this want of reserve stocks, compelling distributors to rely upon the receipts from day to day, that caused prices to rule so much higher than a year ago. Tuesday there was no trading on call and no change in the market. San Francisco was 35c, down 1c, and New York was 1c lower, while Chicago was still 39c for extra.

We quote extra creamery 36c
Prime first 34c
First 32c

	Wed.	Thu.	Fri.	Sat.	Mon.	Tu.
1916	36	36	36	36	36	36
1915	29	28	28	28	28	28

EGGS.

Receipts (railroads) for week ending Jan. 9, 1917—1025 cases.

Receipts (railroads) for week ending Jan. 9, 1916—1336 cases.

The new year started out strong the past week with a good demand both on home and shipping account. While the receipts were somewhat better than the week before, they were lighter than the same time last year. Cold storage stocks are also lighter both here and in San Francisco than this time last year. With tourists now beginning to arrive, increasing the home consumptive demand and a car being made up for shipment East, caused a strong market, and by Monday, on call, fresh ranch case count had advanced 3c and extras 3c and pullets 2c, making the market 3c higher than a year ago. In San Francisco fresh extras sold up during the week, while Chicago was steady and firm and New York advanced 4c on first. Tuesday the market here was quiet but firm on change, but no trading. We quote fresh ranch case count. 39c
Extras 40c
Pullets 36c
Candled 2c and selected 3c over quotations.

	Wed.	Thu.	Fri.	Sat.	Mon.	Tu.
Ranch	36	36	36	36	39	39
Extras	37	37	37	38	40	40
Pullets	33	34	33½	33½	36	36

POULTRY.

Continued light receipts the past week and an improved demand caused an advance all round. There was no Eastern poultry in and the Thanksgiving and Christmas demand left a light reserve supply in the country. Broilers, fryers and hens were all wanted at 1@2c advance. Turkeys, ducks and geese also sold without trouble and brought more money. Tourists have commenced to arrive, which has given new life to trade.

The Hay Situation.

San Francisco, Jan. 10, 1917.

The San Francisco hay market has undergone a marked change in the last few years, according to leading dealers, as a result of the introduction of motor vehicles, which has greatly reduced the city consumption; and the reduction is still going on. Some dealers estimate the drop in local requirements at 50 per cent in the last three years, and the retail hay business in San Francisco has practically gone out of existence. Formerly there was a daily hay auction of arrivals at the railroad yards; but carload buyers are now so few that the auction has been abandoned.

The decrease in local demands has been made up for by the growth of interior markets, following more intensive development and larger stock feeding operations; and the acreage, on the whole, has been maintained, new acreage replacing that turned to other uses. Export trade has been an important item the last few years; less so this year than last.

Leading dealers estimate the crop for last year in San Francisco territory at about 4,000,000 tons; the average price to growers being around \$13, and the average price to consumers, at least in the city, about \$17. The 1915 crop was about 25 per cent larger, with an average price to producers of about \$11 per ton.

The market for the last four or five months has been governed largely by the car shortage, which has made it impossible to move the hay as desired, with the result that both alfalfa and grain hay within easy reach of water shipment are rather closely cleaned up, while there is still considerable hay in warehouses at points depending on rail shipment. At most points, the hay is now out of growers' hands; though growers still own most of the stored hay around Modesto, according to advices from that section. Arrivals in San Francisco for November were 6882 tons; for December 7906 tons. For the same months, respectively, last year, receipts were 10,329 tons and 8,985 tons. In 1915, also, some 40,000 tons were shipped to Australia, which was not repeated this season, the only exports being routine shipments to Manila and Hawaii.

Light shipments in this direction this season were more than made up for by the strong demand in the country, as green feed conditions have been poor, owing to cold weather, and there will be a great deal of feeding until there are two weeks of warm weather.

Dealers estimated that there were about 150,000 tons available in the San Francisco territory Nov. 1, about the same as the previous year. Last year it was all used by the time the new crop appeared, and the same condition is assured if feeding continues much longer at the present rate. In fact it is believed that present supplies are not more than enough to meet requirements for the rest of the season, and values accordingly should be well maintained. This, it should be specified, is the view of dealers, who now hold most of the hay; but it is supported by good evidence.

The car situation is improving, and local supplies are ample, though some of the stock has come in damaged. Local buying from now on will probably be from hand to mouth, as buyers do not like the prices.

As for planting, acreage of grain hay in many districts will be much larger than last year, in some places as much as 20 per cent; though a great deal of alfalfa is being plowed up in some of the principal districts to be replaced by grain or other more profitable crops. New acreage of alfalfa seems to be comparatively small. To sum up the outlook, the market is expected to clean up well, with no decline in prices, and early offerings of the new crop, at least, should be well received. Values for later offerings will depend on demand, which is problematical.

We quote from growers:
 rollers, 1 1/2 to 2 lbs.25@26c
 rollers, 2 1/2 to 3 lbs.22@23c
 rollers, over 4 lbs.18@19c
 ducks16@17c
 geese16@17c
 turkeys, heavy, 12 lbs. and up26@27c
 turkeys, light23@24c
 quabs, live, per doz.\$1.50@3.00
 Dressed3.75@4.85

HONEY.
 There was very little doing in this market the past week. It is rather early in the year for trade to take hold. While there was very little demand for either extracted or comb, holders were firm in their views and old prices were fully sustained. Stocks are so light that it is thought that they will be exhausted before the new crop comes in. Beeswax in good demand and higher.

We quote from growers:
 Water white, pound7 1/2c
 White sage, lb.7 1/2c
 Light amber sage, lb.7c
 Light amber alfalfa, lb.6 1/2c
 Fancy white comb, lb.10c
 Light amber comb9c
 Beeswax29c

BEANS.
 It was again quiet in this market

the past week. It is little early in the year as yet for the trade to take hold. But while the movement just now is light holders are firm in their views and the country is not pressing sales. A very good demand, however, is looked for a little later on, and the feeling in the market is one of confidence. Prices steady and firm all round.

We quote from growers:
 Limas\$7.75@8.00
 Large white9.25@9.50
 Small white9.50@10.00
 Pinks7.25@7.50
 Blackeyes5.25@5.75
 Tepary5.75@6.25

HAY.
 There was more life to the market the past week than for some little time and a general advance was established. All classes of hay selling up \$1.00@2.00 per ton; that is, good dry hay. Low grades also showed more life and the market for it was firm. Receipts were only moderate and the reserve supply on hand was not large.

We quote f. o. b. Los Angeles:
 Barley hay, ton\$18.00@20.00
 Oat hay, ton19.00@21.00
 Alfalfa, northern, ton16.00@17.00
 Alfalfa, local, ton18.00@20.00
 Straw, ton9.00@10.00

a slightly better price. Receipts are falling off some but the supply in the country seems to be holding out satisfactorily for this time of the year.

[Rough, docked 20 pounds, piggy sows, 40 pounds, stags 80 pounds.]
 100 to 150 lbs.8 1/2c
 150 to 300 lbs.9 1/2@9 3/4c
 300 to 375 lbs.9@9 1/4c

WOOL buyers are flocking into the Red Bluff district, but reports from there state that they are not buying. The same condition is reported from Bakersfield. The trouble seems to be the uncertain idea growers have as to values, buyers complaining that no matter what their offer may be it is turned down. This indicates a firm feeling on the part of growers and nobody seems to know what it will develop into. Boston reports a stronger market and no peace talk. Lack of trade prohibits us making any change in quotations.

Red Bluff, year's25@27c
 Mountain, fall16@20c
 Sacramento Valley, year's19@25c
 Mendocino, year's32@33c
 Mendocino, fall19@21c
 Southern, year's18@21c
 Southern, 7 months'13@16c
 Southern, fall11@12 1/2c
 Imperial Valley, year's17@19c
 Imperial Valley, 7 mos.14@15c
 Nevada22@24c
 Fall wool10@20c

HIDES: This market is dull, there being no local activity and a wire from the East says, "No inquiry and no present demand." Quotations are unchanged:

Steers21 @23 c
 Cows21 1/2 @23 c
 Light hides, 25 to 48 lbs.21 1/2 @23 c
 Kip23 @24 c
 Calf and veal31@32 c
 Dry Hides32 1/2 @33 1/2 c
 Dry Kip35 @36 c
 Dry Veal and Calf38 @40 c
 Pelts, long wool\$1.75@1.90
 Short wool85@1.10
 Horse hides, wet, large, ea. 5.00@5.50
 dry, large3.00@3.50

Los Angeles, Jan. 9, 1917.

CATTLE: There was a little more doing the past week, and a stronger market for cattle all round. The cattle coming in were mainly from California and Arizona and in very good condition. Killers all wanted supplies and under the influence of strong markets East prices were bid up 25c per cwt. all round and this advance was maintained throughout the week.

Quotations f. o. b. Los Angeles:
 Beef steers, 1000 to 1100 lbs. \$8.25@8.50
 Stockers and feeders5.50@6.00
 Prime cows and heifers6.50@6.75
 Good cows and heifers6.25@6.50

HOGS: A steady and firm market was had the past week. Arrivals were a little better but as the California hogs coming in showed an improvement in quality old prices were maintained, while the Idaho hogs were firm under the influence of high markets in the Central West. Killers were all in the market and what hogs arrived were disposed of without trouble.

Per cwt. f. o. b. Los Angeles:
 Heavy, averaging 250@300 lbs.9.25@9.50
 Mixed, 200@2509.25@9.50
 Light, 175 @2009.25@9.50

Rough docked 20 pounds, piggy sows 40 pounds and stags 80 pounds.

SHEEP: While prices show no quotable change, the market the past week was steady and firm. Utah and Idaho continue to give us a fair number of very good sheep and lambs and what came in were soon absorbed by killers at full quotations. Sheep and lambs both meeting with a good demand and if here more could have been disposed of. Strong markets East causing buyers to bid up strong for everything in this line.

Per head f. o. b. Los Angeles:
 Prime wethers\$7.00@7.25
 Prime ewes6.50@6.75
 Yearlings6.50@7.00
 Lambs6.50@7.00

CALVES: Not many coming in and what on sale the past week sold without trouble and brought steady and firm prices. Selling at \$8.50@9.50 per cwt.

WEEKLY BUTTER AVERAGES.

Cents per pound for Extras.				
Week Ending	San Francisco	Los Angeles	1916	1917
Jan. 2....	28.00	34.60	28.80	36.20
" 9....	26.65	34.91	28.16	36.00

WEEKLY EGG AVERAGES.

Cents per dozen for Extras.				
Week Ending	San Francisco	Los Angeles	1916	1917
Jan. 2....	35.60	38.60	35.00	37.20
" 9....	31.41	37.91	32.00	38.16

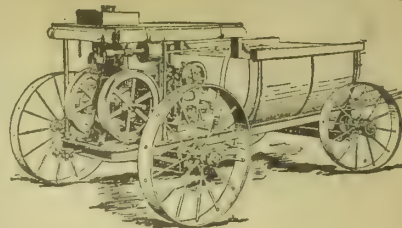
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"It is a pleasure to continue a member of the Press gang, and I enclose a money order to that end."—Jno. P. Irish, Oakland.

J. L. Brodie of Solano county writes: "As a kid I read the Country Gentleman in New York State; in Iowa, Henry Wallace's paper; in Texas, Sam Dixon's; in California, the Rural Press, which is best of all."

A letter from an Eastern correspondent states that owing to car shortage and trouble in getting material that manufacturers are having trouble in filling rush orders. Farmers will be wise if they place orders for machinery, seeds, nursery stock, or any supplies they will need the coming season, as early as possible.

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Special Livestock Market Report.

San Francisco, Jan. 10, 1917.

[Prices paid for stock, live weight, off cars, without feed or water, at Stock Yards, South S. F. Hog prices subject to seller standing one-half of all hogs condemned by government inspectors.]

BEEF prices are on an upward trend which nobody seems to know how long will last. Buyers from Los Angeles and Portland as well as practically all of the local concerns are scouring the country for cattle, including Nevada points. Small operators without feed lots to draw on are particularly hard hit by the present scarcity and even those with feed lot supplies are competing for both small and large lots. It is a sellers' market, as our quotations indicate:

Steers, No. 17 1/2 @8 1/4c
 No. 27 1/2 @7 3/4c

Cows and Heifers6 1/2 @7 c
 No. 25 1/2 @6 c
 Bulls and Stags5 @5 1/2c
 Calves, light8 @8 1/2c
 Medium7 @8 1/2c
 Heavy6 1/2 @7 c

SHEEP are in fully as great, if not greater, demand than cattle and packers are having to go to Utah for lambs at a price which seems prohibitive. It seems certain that the advancing price which has been made necessary on dressed mutton will materially reduce consumption and this will be looked on favorably by killers at the present time. Lambs even at our quotation are considered a bargain.

Prime Wethers8 @8 1/4c
 Ewes7 @7 1/2c
 Lambs10 1/2 @11 c

HOG prices remain firm as last quoted but strictly top hogs will bring

The Jump in Onion Prices.

Within the last fortnight local onion prices have jumped from about the normal level for this season to nearly twice that figure, and some of the larger speculative holders have been asking as high as \$5.50 per ctn., though it is doubtful if that price can be maintained. The rise is due to a general shortage all over the country, which has not been felt here sooner owing to scarcity of cars to take the stock to other markets. The usual movement from the growers to storage operators took place some time ago, and stocks have been rather closely held, being now in the hands of a few local firms; the estimated stock of California onions in cold storage being less than 300 cars. Prices only a little lower than the present have occasionally been reached early in the spring, just before the new crop came in, but seldom if ever so early in the year. Oregon, which was expected to relieve the situation, has only about 100 carloads left, largely owned by local interests.

The crop for the country as a whole last year was light, and the Coast States have been called upon for supplies for all parts of the East, South and Middle West during the fall, instead of merely for the West, as usual. To keep enough for the local market, it has been necessary to raise the prices, as the outside demand continues. About twice as much has been shipped out as usual, going to markets never before reached; five cars recently went to Florida, and some has gone to New York. Apparently everything will be gone before the Texas and Imperial Bermudas and Australian onions arrive in April.

Four Routes East!

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JANUARY 20, 1917.

LOS ANGELES



"Chunk" Had All of the Qualities We Commonly Term "Good" in a Hog and Weighed 250 Pounds.

The Story of a
Trip Through a
Packing House
with Two Hogs,
One a Scrub and
the Other Well
Bred.



"Razor" Was an Inbred Mongrel, Weighing 185 Pounds Live Weight.

The Tale of "Razor" and "Chunk."

[Written for Pacific Rural Press.]

RAZOR and Chunk were just two hogs among many hundred in the yards of the Western Meat Co. at South San Francisco. Both had been shipped from Kings county, but from different districts and by different consignors. Razor was a sow weighing 185 pounds, and appeared to have farrowed one or more litter of pigs. She was not beautiful to look at, possessing a long tooter-rooter head and snout, a sleek, narrow, jack-rabbit body and a pair of hams that betrayed her wild-beast characteristics. That she was alert to any and all occasions was demonstrated by her actions when brought from a pen of her mates for our inspection, for her head was lowered in defiance during most of our short visit.

Chunk was the direct opposite to Razor. He was a barrow and was unmistakably Poland China, so much so as to lead one to believe that he may have had pedigreed ancestors on both sides. He had the ideal small head and neck, a broad, strong back, straight sides and even belly line. These, together with big square hams, well carried out from tail setting to hock joint, was bound to create admiration. And his straightforward, head-up look at you convinced you he was familiar with the habits of man. Also, he weighed 250 pounds.

The Last Trip.—After selecting them we had to wait a while for the drive from yards to killing pen. Razor went first as she was what is termed a "Shipper" hog, one whose carcass is sold as a whole to retail butchers, and at that hour "shipper" hogs were being worked through the killing floors.

The foreman on the killing floor as well on the dressing floor were acquainted with our object of seeing Razor and Chunk go through the plant, and kept careful tab on Razor so she would not lose her identity, for even though we were careful observers the rate of speed at which a hog goes through the killing and dressing process (as many as 1,500 in a 10-hour day at times) forbade our being in the way of workmen.

Razor Is Killed.—As Razor came in from the holding corral with her mates, onto the killing

pen floor she was easily recognizable by her long snout. We watched the workmen fasten the strong chains around her long, thin hind legs, hoist her by power-driven tackle to the overhead trolley track, where she was pushed, head down and squealing, to a workman with a sharp knife and sure hand. A quick push on the sharp point at her throat, a jerk downward, and Razor was in another world.

Removing Bristles.—But not for us. She was shunted down the track and lowered into a vat of boiling hot water where, chain freed, she floated around till another workman could catch one of her legs and push her into a revolving cylinder that was to rub off the greater portion of her bristles. From this she received almost her first human touch by workmen with small scrapers, who were to still further rid her of bristles and again run her carcass onto the overhead track, after marking with indelible pencil on her hide the lot number furnished by the yard foreman. This time she was suspended with hind legs spread apart by a wooden gambrel. A finishing touch now by three expert bristle removers, each watching a certain part of her carcass, made Razor ready for an automatic cold water shower bath through which she passed on her way to the first Government Inspector.

Using the killer's slit in her throat as an inspecting point, Uncle Sam's representative, with a small, sharp knife and expert skill, cut into the neck glands, where tuberculosis is most apt to be discovered. Fortunately, Razor had no symptoms of this costly disease, although four of the next six hogs that he examined were doubtful and were tagged with a "Retained" tag. Propelled slowly but surely on the overhead track by power-driven chains, Razor finally came to the dressing point, where another workman with a sharp knife cut her open and removed the intestines and the head, also the leaf lard, which in her case only amounted to about three pounds. After passing from the dressing floor to the final washing floor where a man with a hose went over the entire carcass with live steam, the final weighing was accomplished.

(Continued on page 88.)



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EDITORIALS

PROGRESS WITH PRUNES.

OUR latest advices from the Santa Clara valley are that due progress is being had in signing up producers of prunes and apricots, and that the machinery for the election of trustees, who will give the association its final form, will soon be set in motion. It was to be expected that the largest district, from Contra Costa to San Benito, which represents more than half the acreage of these fruits, should be perhaps slowest to sign up its large share of the consenting acreage. Large bodies proverbially move slowly, and, if our physics are right, large bodies have more of the inertia which inheres in bulk and in conflicting interests, forces and preconceived notions. But, of course, the Santa Clara district may now be expected to speed up in its support. There has now been ample time for light, courage and foresight to penetrate its bulk and to be sure that, if all its convictions have not yet been fully provided for, there will be plenty of chance to conserve all that there is good in them in later actions. The immediate point is to get under way with munitions enough for a strong drive, and this, we are advised, is now what they are doing in Santa Clara valley. If an organization is not just what an individual requires at first, there is always a chance for wisdom to more fully possess it. If support is withheld for such a reason, there is no chance at all. Go to it briskly, friends, and do not stay out in the company of the chap to whom belongs the hindmost.

A DRIVE ON WEINSTOCK.

A LEGISLATIVE session which does not spring a sensation or two to announce its coming into official existence at the State capitol would be as strange a thing as a rural Fourth-of-July celebration which did not provide a sunrise salute with all the anvils available. The session which opened in Sacramento last week could, of course, not neglect this regular announcement of its birth, and thus came about the sensation that Col. Weinstock, State Market Director, was to be loaded with black powder and fired! Briefly, the charge seems to be that the State Market Director had not done what the law provided. And the charge seemed to convey the idea that the law required that all producers be provided with motor-trucks, and all consumers with market-baskets, and that both be required by law to rush together with one accord in one place and dispose of all California crops by direct trade during the first year of the Market Director's incumbency! And the second charge was like unto the first in stupidity, viz.: that instead of establishing direct trade in this tragic way, the Market Director had been busy all the time in trying to organize trusts of producers which would cause consumers' baskets to be perpetually empty.

What Col. Weinstock's answer will be to such charges we do not know. We have no authority to speak for him, consequently we shall speak about him as we like—without his consent, objection or consultation.

AN IMPRACTICABLE LAW.

NO MATTER how good was the intention of those who urged the State Marketing law upon the Legislature of 1915, they secured an enactment impossible of execution, or even attempt at execution, without running the State into a deficiency debt which the State Board of Control would never stand for. This is the declaration of purposes by the law itself:

"Section 1. There is hereby created the State Commission Market, a State organization to carry on the business of receiving from the producers thereof, the agricultural, fishery, dairy, and farm products of the State of California, and the selling and disposing of the same on commission, as herein provided."

But there was nothing provided except permission for the Market Director to do the wildest things which could enter into the mind of a visionary trade reformer. He could have hired a lot of warehouses, corrals, and clerks in all parts of the State and invited everybody to send in produce—which would have been, at first, largely, the bum stuff which the producers thereof could not sell in any of the usual ways, and which no one would buy, except at a sacrifice. Theoretically, the Market Director could cover his expenses by the charges on the consignments made to him, as the law contemplates, but practically he would commit the State to a very doubtful and costly experiment, because the bad stuff would kill itself and the attitude of the buyers would kill whatever good stuff happened to be caught in bad company. An energetic, optimistic Market Director, following literally the trail blazed by the law, would quickly make the State a debtor and a laughing stock. Governor Johnson, of course, clearly saw this situation and danger, and waited six months before making an appointment under the law. When he saw that something could be done for the public good by working down to the fundamentals underlying the law and disregarding its superficial, visionary and impracticable provisions, he appointed Col. Weinstock, who is well known and tried in submarine economics.

JUSTICE TO PRODUCERS IS FUNDAMENTAL.

ANYONE who has any penetration in his eye can easily see that a fair chance to the consumer must proceed, not from any experimental and expensive selling outfit provided by the State, but by recognition and enforcement of the proper relation of product-value to the act of production. Such an adjustment is only possible by opening the eye and baring the arm of the producer, because he alone can handle the foundation stones of fair trade. Numerically, producers stand related to consumers as one to a thousand, perhaps. Thus producers stand, not only fundamentally at the starting point of reform, but because of their smaller number and the essential interest of each of them, they can be most easily and directly organized to secure such reform. If, then, producers can be organized and financially equipped to start their product on its way to consumers, with fair profit above cost of production to themselves, there begins a mastery of the product which will not cease until it finally reaches the consumers' hands. It seems strange that this fundamental economic fact should still be so indistinct in its relation to food production. It has been recognized for generations in its relation to every kind of factory product, and it has been insisted upon and enforced with growing strength from the beginning until now. Every manufacture is organized on this basis except the output of the earth, which is the farmers' factory. And such organization follows its product, after it has fixed its cost of production and profit upon it, until it reaches the consumer. If you buy a suit of clothes from a retailer of good standing in the trade, you can feel the touch of the factory as you draw your purse. If you had communication with the manufacturer you would find that he could tell you what you paid, for he determines the selling price to you. If the retailer charges too little, his supply is cut off for underselling; if he charges too much he is also cut off as a shark who does not

regard the maker's interest in the extension of demand for his goods.

It is this last consideration which shows most clearly the differentiation of the producer's insistent interest and the trader's chance, and emphasizes the mastery of the former in modern distribution of products to consumers. It is essential to the success of the manufacturer that he should make the largest possible output with his profit above cost and a living profit to retailers. It is the farming producer alone who has no mastery. He is still subject to the ancient traders' code to buy as cheaply and sell as high as he can. This makes farming unprofitable, and at the same time robs consumers. It is this old trader's instinct and policy which must be excluded from the traffic in food products.

WEINSTOCK TORPEDOES EXTORTION.

IN OUR notion Governor Johnson was exactly right when he appointed Col. Weinstock to go at the existing situation and condition in distribution of farm products. If Weinstock had frittered away his time and the State's money in such superficial and incidental sports as the shallow law prescribed, he would have been a fit subject for impeachment and for an asylum. On the other hand, he has dealt a heavy blow at extortion by throwing his strength into making clear the reasons for producers' organizations, which are to render production fairly profitable and permanent, to regulate commodity prices by prescribing fair rewards to all distributors whose services are helpful and necessary, and to increase production to the limit, because producers are fairly paid and consumers have money to buy more for better living. He has insisted that consumers and producers shall not be robbed by extortion, speculation, and waste, dictated by greed or contrived by conspiracy, which leave the producer half-paid and the consumer half-fed. These are the essential things to achieve for the development of California as a great producing State. Public markets and direct trade are valuable but incidental, and they will come as people grow to need and provide for them. Such markets must be evolved, not created by legislative fiat. The law should make their creation easy, and should regulate their operation, but localities should provide and equip them progressively as they are used and their value recognized. The most famous public markets of the world are the result of slow growth, sometimes covering centuries. In these more rapid days they may perhaps reach profitable maturity in decades, but not in months. We believe in these public markets in towns. They will come in time, but they are not the first nor the principal thing. Even if there were no other ways of buying and selling in this State, and all California consumers should go to them for supplies, their aggregate business would be a pitiable fraction of the amount or value of the food products of the State. Economic principles involved in fairly profitable production and fairly rewarded distribution must therefore be applied to very different and very much greater requirements than local public markets would minister to.

INADEQUACY OF PUBLIC MARKETS.

WE DO not care to pursue this argument of the inadequacy of local public markets, for we believe in them—to the limit of their capacity, for the small producers and buyers whom they would particularly serve. It is pertinent, however, to note that the State of New York, with a population of about ten millions, has had three committees (appointed by the Governor, by the Legislature, and by the mayor of New York City) acting jointly for two years in a most careful investigation into things needful in the marketing of food supplies, and all agreeing in a joint report. This paragraph from the report is pertinent to our situation, though it comes from a State of vast excess consumption instead of a vast excess production as in our case. Obviously, if public markets were a great recourse, it would appear in a State with such a great buying capacity, but this is their decision:

"A careful investigation shows that city people demand service; that a vast amount of food con-

sumed in the city is ordered by telephone, and delivered at all hours of the day. If all the tillable land available for farming purposes near New York were intensely cultivated, it would produce less than 5 per cent of the foodstuffs consumed by the city.

"We believe, therefore, that before any experiment in retail markets is undertaken on a large scale at public expense, an earnest, intelligent effort should be made to improve our terminal facilities so as to enable the prompt and economical delivery of foodstuffs."

Naturally, as we have excess production near to towns, we might expect better supply of local markets, but what would that avail, except to a limited number of small producers who would use them if they could sell profitably. Beyond that, however, we have surpluses, for the sale of which such markets would count absolutely nothing, and we have a per capita supply of telephones and delivery wagons, and a disposition of people to use them both, far greater in California than in New York. If, therefore, it is irrational for New York "to experiment in retail markets on a large scale at public expense," it is ridiculous for anyone in California to regard them as a solving factor for our great problems of fair marketing. We need greater things just as New York does, though, perhaps, not the same great things.

WEINSTOCK'S WAYS.

NOW, how Mr. Weinstock has proceeded to reach these greater things is a matter of opinion. We hold him to be perfectly justified in his conception of what could be undertaken

under existing laws to reach great ultimate results which the makers of the law probably aimed at but did not hit, and he has secured a wide and valuable approval of his efforts by those who alone have the power to serve the joint interests of themselves and the consumers of their products. There has probably never been undertaken in California a State effort which has been answered by such wide and speedy popular approval, nor one the continuance and extension of which would do more for the relief of both producers and consumers. But, of course, one can differ from Col. Weinstock a good deal in methods without impeaching the principles which he is conscientiously and vigorously serving. We can even claim, on our own part, that our hindsight is better than his foresight, and we now think that we should have proceeded somewhat differently with existing co-operative organizations and with new organizations of the same class. It is, of course, possible that he has proceeded too resolutely by panacean prescription and, not given attention enough to diagnosis of particular cases. More careful diagnosis might have disclosed forms of strength in certain fruit organizations which made operation unnecessary and different remedies helpful—though we hesitate to make the same suggestion in the matter of stale fish. But what does all that matter? Our observation is that crop-producers in all lines are prevalently sure that Col. Weinstock's undertaking has struck a new note in food production and marketing, and they are listening for the fuller ring of it.

of cow manure as a mulch to keep the soil moist and to rot for the increase of humus in the soil. We imagine many San Joaquin experimenters fail because they try to grow a clump of rhubarb like a watermelon plant. Our notion is that you can grow rhubarb all right if you do it right.

Small Hillside Planting.

To the Editor: I have two sidehills with a small stream from a spring running at the foot of them. I wish to plant some cherries, apples, peaches, pears, apricots and plums for a family orchard. I propose to level the land for one row on each sidehill at such a distance above the stream that the roots may get to the water, yet not get too much. How high above the water table do you consider the various kinds should be planted? Will a mixture of the various fruits be detrimental to the best production? One hillside has a slope nearly due west; the other southeasterly. Which hillside do you consider the best for the various varieties of trees, and how far apart should they be planted? How wide a space should be leveled for a row? How far should blackberry, strawberry and raspberry vines be planted from the stream or how high above the water table?—J. W. P., Madera county.

We should not think for a moment of leveling the land, but simply grade it enough to make cultivation comfortable, if it is too steep for that now. If it is now cultivable you only need to grade or even it so that you can carry the irrigation water in ditches from the spring—presumably one on each side; also to fill sags where too much water might collect from irrigation. Of course if you wish to make a swell place you can terrace it, as you are thinking of—say a terrace forty feet wide on each side. The trouble with this might be a cloud burst which would sluice out all your improvements. If it had to deal with the natural surface it might not do any harm, to speak of. Fruit trees grow all right on hillsides, and though they may be more difficult to cultivate and irrigate this would not at all equal the cost of terracing. Especially for a small home orchard we would leave the land largely as it is and the steeper it is the less we should like to disturb it. Anything of four feet or more above the surface of the little stream ought to give you free soil-depth enough. As for the exposure, in a little valley, such as we suppose you describe, opening to the south, there is not enough difference between the two sides to have any perceptible effect on a single row of trees. The trees will not hurt each other. They have grown that way since Eden.

Garden Gone Wrong.

To the Editor: Our garden patch last year was a failure. Considerable fertilizer from barnyard was spread on it, but corn had much fungus on stalks and ears, and all other vegetables were inferior in some way. It was irrigated and cultivated. What does the soil need?—Farm-Garden, Yuba City.

Probably it needs better gardening more than anything else. No one could tell without seeing the plants in their misery just what particular causes were involved. Too much stable manure may have been applied just before planting instead of during the preceding fall or winter. Too much or too little irrigation may have been given, for the plants may have either been swamped or dried out. Cultivation may have been too scant or too coarsely done. The corn may have grown from smutty seed; or because of too much water and too little cultivation, it may have been stricken with mold. The efficiency of any application to the soil depends upon the skill with which the gardening is done. Of course, one cannot tell merely from reading the question what specific mistakes may have been made.

California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agricultural Weather Bureau at San Francisco, for the week ending at 5 p. m., January 16, 1917.

STATIONS	Past Week	Rainfall Data		Temperature Data	
		Seasonal To Date	Normal To Date	Max'm	Min'm
Eureka .....	.00	13.52	20.59	58	28
Red Bluff .....	.00	11.02	11.96	62	26
Sacramento .....	.00	6.52	8.71	52	30
San Francisco ..	.12	9.81	10.17	60	34
San Jose .....	.14	6.04	7.35	62	30
Fresno .....	.38	5.21	4.42	52	28
Independence ..	.15	14.03	8.31	74	28
San Luis Obispo ..	.53	8.97	6.47	76	40
Los Angeles .....	.53	8.97	6.47	76	40
San Diego	1.30	4.38	4.25	76	42

By the Editor || QUERIES AND REPLIES ||

Inquirers Must Give Full Name and Address

Potatoes After Alfalfa.

To the Editor: Can one plant potatoes on ground that has been into alfalfa for three years this spring, or would you recommend some other crop first? The reason for plowing it up, it is a high check and takes irrigation water very slowly. P. T., Escalon.

Potatoes are glad to follow alfalfa. Break up the alfalfa deeply now and clean the land with a disk as growth starts. Plant as early as is safe in your section.

Non-Bearing Plums.

To the Editor: I have very thrifty five-year-old Satsuma plum trees growing on very rich and choice land. The last two years the trees bloomed heavily, but when the blossoms fell off the fruit went also. The stems perish as the blooms dry up so there is little fruit left. Is there any remedy for this? Would an application of nitrate of soda applied at the right time be of any benefit? When and in what quantity should the soda be used, and should it be sown and cultivated as in the case of small grain?—S. W. S., Rivera.

The trouble may be lack of pollination or the rapid growing of a young tree—though the Japanese plums are usually precocious. Keep them under observation longer. The Satsuma is one of the best bearers in your part of the State, and from the behavior of single trees in gardens, etc., it seems to be self-fertile. An experiment with nitrate of soda on part of the orchard might teach you something. Use about 200 lbs. to an acre and see if these trees behave better than the others. As you do not usually have heavy spring rains it can be applied next month in the way you propose. An experiment with spraying a few trees with nitrate, as described on another page of this issue, would also be interesting.

Oak Fungus and Grafting Apricots.

To the Editor: I have 10 acres of 30-year-old Moorpark apricot trees: very large, healthy trees. My neighbor has the same trees and about the same acreage. For the past two years we have been arguing as to whether we should take them out or graft or bud. We each have a small area of oak-root fungus which is constantly spreading. I have decided to take my trees up and he proposes to graft one-half of his to Blenheim. Do you believe such large trees would make good tops when grafted, or, if the trees were sawed off down low and shoots allowed to grow for a year before budding, would they be able to stand up against the winds we have? In your experience how long would it take a grafted or budded

tree to produce a reasonable crop as against a replanted pear tree that would withstand the oak fungus?—R. M., San Jose.

Dig down and examine the root-crowns and main roots of all trees next to those already known to be infested, and include all those found to be diseased in a map of the infested area. If this show that you really have a spot surrounded by healthy trees remove all trees in this spot—burning all roots, etc. Plow this spot as deeply as you can, going slowly and pulling out all roots disclosed. Harrow thoroughly, picking off root pieces, etc., and plant pears on the old spot. Then graft in the branches, above the main forking, all the healthy trees—putting in a good many grafts in each tree and roping or wiring the growths from the scions across through the head next summer to prevent blowing out. Do not cut back for sucker budding. Suckers from a big, low-cut stump have a bad foundation and grow to a big bush, not a well-shaped, strong tree. Your old apricots, well top-grafted, ought to give you two or three good crops before yearling pears planted now will give fruit enough to bother you much.

Rhubarb in Stanislaus.

To the Editor: I have four acres of fine sandy loam of good depth and fertility, seeded to bur clover to be plowed under in the spring. Two acres of this I intend to plant to black- and raspberries, being lighter soil than the rest, and the balance I was intending to plant to Giant Crimson Winter Rhubarb, giving the ground a heavy coat of manure. But I am told that rhubarb has always proved a failure in Stanislaus county, owing to the long, dry summer. I have thought of assisting atmospheric humidity by growing some inter-crops, such as Indian corn, between the rows of rhubarb for shade the first year. What is your opinion?—O. B., Empire.

Rhubarb certainly likes partial shade, even nearer the coast, where the sun is cooler and the air moister. A more permanent sun shade like a row of deciduous fruit trees would be better than corn, but if you get a tall corn and plant rather late it may hold a fair shade late enough, with irrigation to keep it going. But quite as much as shade, rhubarb needs adequate and continual soil moisture to make good strong roots to stand leaf-pulling the next year and continuous good summer-growing conditions after that for the next pulling and so on. It also likes a good deal

What Fruit Tree Planters Should Know.

VARIETIES, ROOTS, AND SOIL CONDITIONS SUITABLE FOR CALIFORNIA FRUITS; POINTERS ON SELECTING TREES, HEELING THEM IN, PLANTING, PRUNING, AND PROTECTING THEM DURING THE FIRST FEW MONTHS.

[Furnished Pacific Rural Press by John Vallance, Oakland.]

Tree planting is now with us. January and February are considered the best months for California, although lots of planting is done late in December and during March with perfect success. Many new home-seekers are coming to our State and many have bought ten, fifteen, twenty, and forty acre tracts. It is for these that this paper is intended. The ways of transplanting and caring for young orchards differ very much from the way it is done in their home place. Perhaps, in fact, many of the trees are unknown to them. For instance the apricot, the almond, the fig, the olive, are trees they may have read about, or eaten of the fruit, but of their growing and pruning they know nothing. Well then, our first note of warning is, be sure you have got hold of the right kind of land; be very careful before you put a deposit up. See that the soil has no hardpan close to the surface. See that there is no rock or alkali, and no standing water in winter.

Now, what to plant is the next question. The best way to find this out is by careful inquiry and observation.

If Apples are preferred, the following are among the best sorts: Gravenstein, Esopus-Spitzenberg, Jonathan, Smith's Cider, White Winter Pearmain, Yellow Bellflower Yellow Newtown Pippin, Rome Beauty, Red Astrachan and Alexander. The variety or varieties to plant will be according to your section, and this matter will also have to be investigated.

Among Pears the Bartlett will be found perhaps the best. It is the best for canning. It is good for Eastern shipment, good for drying, and good for home consumption. For late shipping sorts the following: P. Barry, Winter Nellis, Eastern Beurre, Duchess d'Angouleme. For mid-season shipments the Beurre Hardy and Beurre Clairgeau are good. The pear will thrive very well on wet land.

Cherries.—The following are among the best: Black Tartarian, Napoleon Bigarreau, Lewelling, Bing, Rockport Bigarreau, and Lambert. The cherry, to have the best results, must have a deep soil with perfect drainage.

Prune Growing in California, is one of our greatest industries, and the best variety is undoubtedly the French (Petite d'Agén). The Imperial Prune is also quite heavily planted, but does not succeed so universally as does the French. These two sorts are used altogether for drying. The Sugar Prune is a large, lovely sweet prune which is used for Eastern shipments, as well as for drying, and the Tragedy is a prime favorite for early Eastern shipments. The Hungarian, a large red prune, is extensively used for shipping; it is good for eating and excellent for preserves. The prune tree can be grown on a diversity of soils, as nurserymen grow it on the following roots: Myrobalan for wet

soils only; almond root where moisture is far from the surface, and peach root for loamy, well-drained soils.

Plums are planted extensively for Eastern shipments and home consumption, and the following are the sorts that are grown for this purpose: Burbank, Climax, Clyman, Kelsey, Wickson, Santa Rosa, Formosa. For canning purposes the following are preferable: Jefferson, Washington, and Yellow Egg. Plums can also be obtained grown on the Myrobalan, peach, and almond root.

Apricots are one of California's staple crops. No other State in the Union can grow this so well nor so profitably. The Blenheim, Royal, Tilton, and Hemskirk are the best, and about in the order named. The apricot is grown on the following roots: Myrobalan for wet land; peach and apricot root used according to soil conditions.

Peaches.—The acreage of peaches in the State is enormous, and the following are some of the best early sorts (mostly planted for early shipments). All are freestones: Alexander, Briggs May, Hale's Early, and Triumph. For midseason: Early Crawford, Foster, Elberta, Lovell, and Muir. For drying, the Lovell and Muir are the main varieties. Clingstones are used altogether by canners: Tuscan Cling, Phillips Cling, Orange, and McDevitts. The Salway is perhaps the best late freestone and is used for home consumption and canning. The peach is grown entirely on the peach root and therefore your soil must be sedimentary, well-drained, and with plenty of depth.

The Nectarine, we believe, is not grown to any large extent as yet, although it thrives to perfection in this country.

In Almonds California is the leader, producing 80 per cent, I think, of the crop of the United States, and yet only 25 per cent of the entire consumption. The following are the most extensively planted: Nonpareil, Ne Plus Ultra, I. X. L., Peerless, Texas Prolific, and Drake's Seedling. The almond is grown on the almond and peach root, the former for soils where water is far from the surface, and the latter for deep soil that has good drainage and is well moistened.

The Walnut is a valuable crop in this State, and the following are among the best producers: Franquette, Mayette, Concord, Placentia, and Santa Barbara Soft Shell. Up to a few years ago these were grown on their own roots, but now most walnut planters prefer those trees grafted on the California black root.

The Olive is at home in this State, and in this State only, and produces heavy crops. The Mission olive ranks about the best, then follows the Manzanillo. These are both excellent for oil and pickles, green and ripe. The latter method of pickling is a purely California idea, which is meeting general favor. There are other sorts for pickling only, such as Ascolano and Sevillano, known

as the Queen Olive, that are in great demand.

The Fig is grown in this State very extensively; and the White Adriatic, Mission, and San Pedro are among the best for eating green, and the Calimyrna for drying. To insure a crop from the latter variety the Wild or Capri Fig must be planted in the same orchard. From this variety the Blastophaga, a fly, issues and carries the pollen from the Capri to the Calimyrna flowers and fertilizes them.

Age and Size of Tree.—The next question that will arise in the new-comer's mind is what age and size of the tree should he get, and we will answer this by saying that the best tree is what nurserymen call "one year old." The root is one year older, so this practically makes the tree two years old. It should be either three to four or four to six feet high.

The Pruning of the Young Tree is the next question. All broken roots should be pruned off, and where the root is straggly, prune off a little. Pruning the top requires attention. This should be done after you have all your trees planted. All trees must be headed back 2½ to 3½ feet from the ground. Apples, pears, apricots, prunes, and plums should

be cut back to a "whip," that is, all laterals should be cut off. These varieties will break away at any of the eyes on the main stem, but with a peach and almond tree it is different. Many of the eyes on the main stem of these trees are "blind," so two, or perhaps three, of the laterals must be left on, and these headed back to two or three eyes. A great many failures to grow are due to pruning these two sorts to "whips."

Protect the Roots.—Should the weather be clear and warm, during the time you are planting, you must keep the roots protected as much as possible. Many trees receive permanent injury at this time by failing to observe this rule. I have known of men who lay out the trees before the planters are ready, and they will lie out for perhaps one or two hours in the drying wind and hot sun. Never do this. If the weather is cloudy and no wind then you do not need to use so much care. A good way is to rig up a wagon with a barrel of water and keep the trees immersed in it till used. How large a hole should be dug for the roots? In sedimentary land the hole does not require to be so very large,—one and a half feet square. In heavier soils two feet will be better. Be careful that you use the finest soil around the roots. If no rain should come within a rea-

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sonable time, then two buckets* of water should be given each tree to settle the soil. This is not usually necessary as we have rain to do this, but the last two seasons have been exceptions. Plant the tree a little deeper than it stood in the nursery rows.

Shall I Fertilize My Trees? is a question often asked. The answer is, "No, it is not necessary."

Protection from Sunburn.—The trunks of all young trees must be protected from the summer suns. This need not be done, however, until April. There are several kinds of tree protectors, some made from tulle, yucca, or wood, or a newspaper wrapped around the tree as far up as, say, two to two and a half feet, makes excellent protection from sunburn. Many planters whitewash the trunks of the trees instead of using tree protectors.

Dynamiting.—Much attention is being given of late to this method of preparing the holes for planting, and where the soil is heavy adobe or hardpan near the surface, it is a very good thing to do, but where the soil is loose and open dynamiting is not necessary.

First Few Months.—When young trees throw out growth from below the desired height at which you wish them to branch, these must be brushed off by running the hand down the stem, or if they are too large to do this, a knife must be used.

During the early period of their growth you will have to look out for insects. The cut-worm, for instance,

we would warn you against. They work at night and lodge in the soil at the foot of the tree in the daytime. Go over your trees early in the morning and you will catch many of them.

Nurserymen mostly pack their trees in tulle. This makes a good material for this purpose. Upon receipt of your trees notify your Horticultural Inspector of their arrival and get his permission to haul them home, and have him examine the trees there, and not at the depot, because when the bale is once opened it can never be put up the same again, and that is where the trees will receive injury by drying out. Then after inspection is through, commence to "heel" them in. They are tied in bunches of 10 or 20. Cut the lower rope around the bundles and spread out the roots, leaving the top string around the branches. Work the soil carefully around the roots, and if there is no rain, water them very thoroughly, as it may be days before you get them all planted. Many trees receive injury at this time by poor "heeling" in.

If your trees do not all grow, do not blame the nurseryman. Remember he can only guarantee to furnish you good healthy trees. He cannot guarantee them to grow, as so many things may happen over which he has no control. Look out for gophers and squirrels, and remember that cultivation and plenty of it, is as essential as water. Rather give me cultivation without irrigation, than irrigation without cultivation. The soil must be kept aerated.

Plants Nuts in Orchard Form.

[Written for Pacific Rural Press.]

To growers who may be in doubt about which variety of walnuts is freest from blight, but do not want to lose time in getting the trees started, E. I. Hutchinson of Contra Costa county suggests planting black walnuts now, to be grafted above the forks at five or six years old. By that time much more will be known about blight; and you will know better which is the best commercial variety for your conditions.

Mr. Hutchinson keeps the black nuts moist from the time they fall. He plants them in a moist sand bed in mid-winter. When they have sprouted so he knows they will be vigorous growers, he thinks it well to plant carefully in orchard form three or four inches deep with the sprout downward because this is the root. Three or four strong nuts

should be placed four to six inches apart where each tree is to stand. There will probably be one stronger than the rest, and later it will be selected. Spring rains will follow planting; and water should be given the first year, but be careful not to drown the seedlings.

Mr. Hutchinson says that trees planted that way 20 years ago are his very best trees. Transplanting may, he says, result in poor root systems unless the requisite amount of care is used.

It is noteworthy, however, that most of the walnut plantings in the State are of nursery rooted trees; and if the nursery work is properly done, the better stand, the quicker bearing, and the exclusive use of the land two years more for other crops, makes this system preferable for most people.

Mendocino Grower's Experience

[Written for Pacific Rural Press.]

In relating his experience with spraying for curl leaf of peaches and peach twig borer, A. P. Nelson of Calpella, Mendocino county, writes as follows: For curl leaf on peach and peach twig borer I used 33 pounds of quicklime, 33 pounds of best sulphur, 5 pounds of salt, and boiled it for about an hour so that every trace of sulphur was lost. After boiling I added enough water so as to make 200 gallons mixture, and used a pressure from 100 to 200 pounds on spraying machine. I had the local horticultural inspector, Mr. Van Dyke, look at my peaches, and he stated that they were absolutely

free from any disease. This fall I sprayed again as follows: 110 pounds of sulphur, 80 pounds of stone lime, heated to a boiling point, then boil for 45 minutes, and add enough water to make 500 gallons of mixture. This spray is a winter spray.

Regarding apples and pears, I sprayed three times, using 8 pounds arsenate of lead to 200 gallons of water. Spray first when blossoms drop and then twice every six weeks. I obtained excellent results, and my fruit was practically free from worms. I have a large quantity of apples now stored absolutely free from worms.

TALKS ON Nitrogenous Fertilization

Number 7

WHAT is the best way to apply Sulphate of Ammonia?

Generally speaking, it may be spread the same as you would any other fertilizer material. It is sufficiently dry to apply easily and evenly by hand or machine, though for the last mentioned purpose it works better when mixed with an equal bulk of dry sand or earth.

SULPHATE OF AMMONIA

For CITRUS GROVES a good way is to dump several sacks of Sulphate into a tight wagon-box and drive slowly along the rows, spreading on either side with containers that hold just what each tree is to receive—say, 1 to 3 pounds at each application.

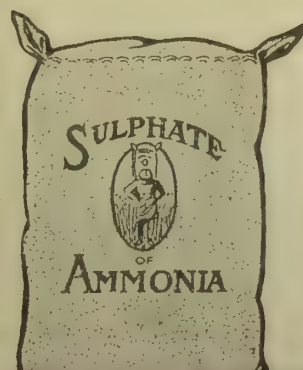
On TRUCK CROPS it may be spread broadcast before planting or before the plants are set out.

For FIELD CROPS apply broadcast by hand or machine at time of planting or before.

From 100 to 300 pounds per acre will be found profitable.

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The Real Live Fig Institute.

Attendance heavy, interest intense, discussions the best ever, and the latest knowledge of fig culture, troubles, and marketing given out. Similar programs might well be provided for State Conventions.

The "Fig Institute" held at Fresno, Jan. 12 and 13, was considerably better attended, and produced considerably more floor discussion by growers, than any of the recent California Fruit Growers' conventions. During the three sessions of the first day there was a total attendance of perhaps 1100 or 1200. The only man who held the floor any length of time was Dean Thos. F. Hunt in the evening, and no one would have had him stop sooner. All addresses except his were strictly fig. The Dean showed, among other things, that there is a very definite relation between the amount of capital invested, the expenses, gross returns, and the labor income from a ranch owned by its operator. He also showed that the renter must and does operate more land than the farmer who works his own land.

From the beginning, the discussions were ably led, in that the leaders drew out expressions from experienced growers all over the house in answer to questions which came as freely. The program was full of interest from the start.

The demonstrations which were to take place in the afternoon at Geo. Roeding's orchard, showing methods of pruning and planting nursery trees, pruning and topworking bearing trees of different varieties, etc., were prevented by rain, and the growers held informal but long-continued discussion in the auditorium which the Fresno High School placed at the disposal of the "Institute."

Fig Troubles.—The limited knowledge regarding control measures for fig troubles was quite thoroughly shown. Split figs were ascribed to every abnormal condition suggestable, but the discussion seemed to show that the most likely and usual cause is irregular water supply—neglect for a while and then irrigation. As A. E. Beers, Merced County Horticultural Commissioner, pointed out, there is a very notable variation in most of the characteristics of fruit from trees of the same variety, and G. P. Rixford has been testing out the possibility of getting trees whose figs won't split, by propagating cuttings from such trees on the Vina ranch for the past three years. These four trees do not have split fruit while those around them often do.

Soured figs were scored as a menace to the markets for the industry; but none told the cause with any confidence. The sweeter varieties sour more than the black or

the Kadota. The latter is a new one with tougher skin and self-sealed aperture. Control of smut in figs was admitted to be an unknown quantity.

Nematodes on the roots, however, are not so hopelessly superior to control, though they are the greatest destroyers of fig trees. They attack new rootlets principally, and older roots, too, causing knots on them. Adriatics are especially susceptible, due to their shallow rooting. The nematodes are worst in sandy soil and within two feet of the surface, though Henry Markarian said he had found a few six feet down. Mr. Markarian seemed to have the best-proved means of control. He has saved infested trees by applying as much as five tons of hydrated lime per acre and flooding it for several days. Until four years ago he dug out an average of eight trees per year, the other trees did poorly. Since then he has not dug out any and the crops have increased. One tree never produced more than a few figs until he limed and flooded it in a check reaching out as far as the branches. Six inches of water was left on for six days. After it had dried off, the check was flooded six days more, and he got 200 pounds of figs from that tree last year. The afternoon discussion seemed to show that his results were due to the flooding rather than liming, for nematodes have been seen having great sport in saturated lime water for a short time, but the evidence seems to show that they need air.

Varieties to Plant.—The discussion of varieties was warmest. R. M. Roberts of the Santa Fe has observed so many failures with Calimyrnas by new settlers, due to the need of caprification, that he recommends Adriatics, not only for their capacity to stand abuse and bear fruit bravely on, but also because the demand for them is increasing. He admitted the superior flavor of Calimyrnas, but not the latter's extra sugar content until Prof. W. T. Clarke and Henry Markarian had mentioned University analyses proving it. Mr. Markarian talked for the Smyrna because it is the best fig, and maintained that the only extra cost of growing them was the caprification at about \$1 per acre besides the care of capri trees. The discussion showed that most California figs are grown as borders to vineyards, etc., and that the trees are outrageously neglected. Under these conditions, even Mr. Markarian admitted Adriatics to be best. For

MORE ABOUT DATTIER DE BEYROUT.

To the Editor: I have some Dattier de Beyrouth grafted on Zinfandel, which bear well, but too many small berries intermixed in the bunches. I stake and prune them like Malagas. Is there any known way to increase the size of the berries? The bunches are large enough. —P., Dinuba.

[Answered by Frank Henry, Fresno.]

The fault is not in the Dattier de Beyrouth grape in having seedless and stringy bunches or small berries, but in the way they are cared for. The vines are made too strong in growth before and at blossom season, for proper fertilizing at blooming time. If your Dinuba correspondent will let his ground dry out, and vines stop growing at blooming time, the grapes will be of a very uniform size. Be sure and don't prune too short.



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CALIFORNIA FRUITS AND HOW TO GROW THEM.
BY EDWARD J. WICKSON.
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orchards of not much less than 20 acres, however, where a man will take care of his trees, he would recommend nothing but Calimyrnas. There are 25 days in June when caprification takes place, and he believed that anyone wanting to grow the best figs would have no trouble learning the details of that process. The Black Mission fig received scant attention on account of its low market value and low sugar content. The Kadota fig stirred up live discussion on the second day, as it is warmly supported by a few on account of its tough skin, self-sealing of the aperture so that it does not sour, lack of splitting, and other good points which were claimed to overbalance its inferior quality. Some maintained that as a shipping or drying fig, it could not compete with the other varieties. Prof. J. Eliot Coit pointed out that only with Calimyrnas can we drive out foreign figs from American markets.

Planting Cuttings.—Owing to the impossibility of getting rooted fig trees for desired planting this spring, the subject of cuttings stirred up live discussion. Whether to plant cuttings in orchard form was the question. Many growers told their experiences, and the final impression gained by the writer was that if cuttings planted orchard form receive as much individual care, and especially with regard to moisture, as they would in a nursery, they would make as good trees at the end of the second year as if grown in nursery with care and transplanted at one year old. The small likelihood of their getting enough attention if planted orchard form, and the obstruction to use of that land for other purposes, seemed to establish the desirability of rooting cuttings first in nursery.

Details of climatic and soil requirements, planting, pruning, fertilization, protection from sunburn, irrigation, etc., were well discussed, as also preserving, packing, and shipping. Capri varieties and caprification were presented in a paper from which extracts are printed elsewhere. The California industry was portrayed in colors by stereopticon in the evening, with Prof. I. J. Condit to discuss the pictures.

The great success of this Institute for one fruit industry suggests the desirability of having our California Fruit Growers' Convention programs arranged to complete the discussion of each fruit on a certain day, and to insist on most of the time being appropriated exclusively to discussion of problems by the growers attending the meetings.

At the Saturday session the convention adopted by unanimous vote a resolution to organize a co-operative fig-growers' association along the same lines as the California Associated Raisin Company and the Peach Growers' Association, both having headquarters in Fresno. Warren T. Clark of the University of California, chairman of the convention at Fresno, was authorized to appoint a committee of one man from each fig-growing county in the State. This committee is given the authority to outline all details for the co-operative organization.

The Fallbrook Citrus Ass'n are building a \$5000 orange and lemon packing plant, the first plant of its kind ever erected there.

SUMMER ORCHARD COVER CROP IN ALTERNATE ROWS.

[Written for Pacific Rural Press.]

"I don't plant cover crops," writes Gerald Geraldson of Placer county. "I just allow alternate rows of each year's output of natural grass (and bur clover) to mature and plow it in next spring. I irrigate four or five times per year, formerly 10 to 12 times.

"The condition of the land is vastly improved, and the growth of the trees and quality of the fruit much better. Have had no aphids whatever."

C. V. Freed, who practices the same system, reports that the thrips

in his orchard are no worse than in other orchards where no cover crops are left in summer.

THORNLESS BLACKBERRY.

To the Editor: Where can I get Cory's Thornless Blackberry?—L. M. G., Santa Rosa.

The Ekstein Nursery Co. has bought the entire stock of these plants. Their announcement has appeared in Pacific Rural Press advertising columns. We would invite the numerous people who have asked us where to get it, to look over our advertising columns as regularly as the paper comes, for you will there find some of the most valuable news in the paper. But if you prefer an-

swers to questions not of general interest, be sure to enclose postage for reply.

APRICOT TREES SUNBURNED AFTER HEADING BACK.

[Written for Pacific Rural Press.]

Apricot trees do not show sunburn so readily as peaches, cherries, etc., but last winter we saw an old orchard in Riverside county which had been renewed by cutting off the tops five or six feet high five or six years ago. The main limbs are sunburned on the southwest side, and badly rotted—too bad to handicap the fine new tops on these trees with such useless injury to the bark which should be carrying sap.



Olive TREES

—with roots like these will give good results.

In planting Olives, as with any other fruit, it makes a wonderful difference in future profits if you start with trees that are straight, thrifty, well branched, and true to name.

Note the root system. This is a fair sample of Roeding's True Olive Trees.

Roeding's Trees Please

Our nurseries have been more closely associated with the growing of the Olive than possibly any other concern in the state. We are therefore in a position not only to supply you with the finest stock but to properly advise you as to varieties, planting, pruning, etc., and this we will gladly do free of charge.

Olives Make Excellent Border and Avenue Trees

—and they bear heavy and profitable crops. Orange orchards bordered with olives get good protection and in addition you get good returns from the olive trees. There is a wonderful future for the olive industry in California and if you start with the right trees there should be no question about profits.

Plant Manzanillo

The Los Angeles Olive Growers' Association, in a recent letter, advise the planting of Manzanillo olives, stating that the results received from that variety exceed those from any other. As the fruit ripens earlier than other varieties, there is little danger of frost. It makes an excellent pickle and is a regular and prolific bearer.

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Nitrate of Soda Spray for Fruit Bearing

[Written for Pacific Rural Press by W. H. Volek, Hort. Com., Santa Cruz Co.]

The practice of spraying dormant trees with nitrate of soda or other nitrate solutions is attracting considerable attention at the present time and a brief discussion of this matter should be of interest to the fruit growers. Nitrate of soda spraying is giving excellent results with apples and pears. Trees so sprayed are improved in vigor and fruitfulness, provided the application is properly timed. There appears to be a general misinformation regarding the time of application. To obtain the best results nitrate sprays must be applied while the trees are thoroughly dormant, and the month of January is the ideal time under California conditions. Later applications will not only be less effective, but may also be decidedly injurious to the expanding fruit buds.

Nitrate of soda is not much of an insecticide or fungicide so to overcome this defect it is best to apply it in a mixture with some standard insecticide such as lime-sulphur solution or caustic soda.

Formula A.

Nitrate of soda 100 to 200 pounds
Lime-sulfur solution 20 to 25 gallons
Water to make 200 gallons

Mix these materials together in the spray outfit tank for several minutes or until all the nitrate is dissolved. The mixture is then ready to apply.

Formula B.

Nitrate of soda 100 to 200 pounds
Caustic soda (lye) 25 to 35 pounds
Water to make 200 gallons

Mix as directed above.

The nitrate of soda may be in large lumps. These should be broken up with a hammer, and care should be taken to get as little sacking lint into the spray tank as possible. This lint tends to clog the strainer so causing much trouble. In some cases it is necessary to dissolve the nitrate separately and strain it to remove this lint. The application of nitrate sprays is similar to other spraying in that great thoroughness is necessary to obtain the best results. Results are also subject to weather conditions, for if a rain follows too soon after the application the nitrate solution will not have time to penetrate the bark.

Our experiments have determined that nitrates applied as a spray to apple and pear trees are, under the proper weather conditions, much more effective than the same quantity of material applied to the ground. We have not obtained such marked results with stone fruits, but believe that the proper conditions have not obtained in most of these experiments. Rains have been almost constant during January, a fact which probably accounts for most of the poor results. At any rate the application of nitrate sprays to stone fruits deserves some attention on the part of growers who may have an opportunity to try it under varying conditions. From our past experience it appears that nitrate spraying will be most successful during dry years, while it may be almost a failure when applied in an excessively rainy season.

The matter of dilution is one which depends considerably on circumstances. Our experience has been that nitrate of soda used at

the rate of one pound to the gallon is most effective the first year, but equally good results are obtained with one-half pound the second year. The kind of spraying, also, has much to do with fixing the optimum concentration for the weaker solution applied thoroughly may be more effective than the stronger applied indifferently. In cases where a good job of spraying is not certain, owing to indifferent or inexperienced help or for any other reason, it would certainly be best to use the stronger solution.

Lastly, we have not observed any injurious effects from the application of the strongest possible solutions of nitrate of soda to dormant trees. The same is true for the continued use of nitrate of soda on the same trees for several years. Nitrate solutions do injure fruit buds after they have started to expand, but no

injury to the tree has ever been observed to result from such applications.

REMOVE LITTLE-LEAFED PEACH.

[Written for Pacific Rural Press.]

Little-leaf peach trees can be remedied only by complete removal and replanting with new stock, according to G. H. Drew of Fresno county. It is also a question whether replanting will produce good trees. He has carefully pruned and cared for several such trees on his orchard for five or six years, and has noticed that they were inclined toward little-leaf from the start. They put out excessive sucker growth but little fruit wood.

WORKING OVER OLD ORANGE TREES.

To the Editor: When is the proper time to graft old orange trees? What month does the 'sap go up'?—J. L. C., Snelling.

Sap is going up all the time, but with especial force when you see the new yellowish green shoots. Grafting of oranges is almost out of date. Cut off several but not all of the branches now while trees are dormant and weather cool, whitewash the trunks and main limbs, and graft now if you must graft. Budding may be done in spring in old bark, without removing so much of the top, using older buds; or you may cut back severely now, allow shoots to grow in spring and bud into the strongest of them when they are big enough to bud.

Citrus experts in the Pomona district, who have investigated the situation, are of the opinion that the grower who does not keep his trees pruned loses from \$20.00 to \$50.00 per acre each year on account of this negligence. The tree that is filled with dead limbs and branches is a sick tree. It does not produce much fruit on the inside of the tree because the dead wood chokes it out.

Don't Fail to Plant Some Ascolano OLIVE TREES

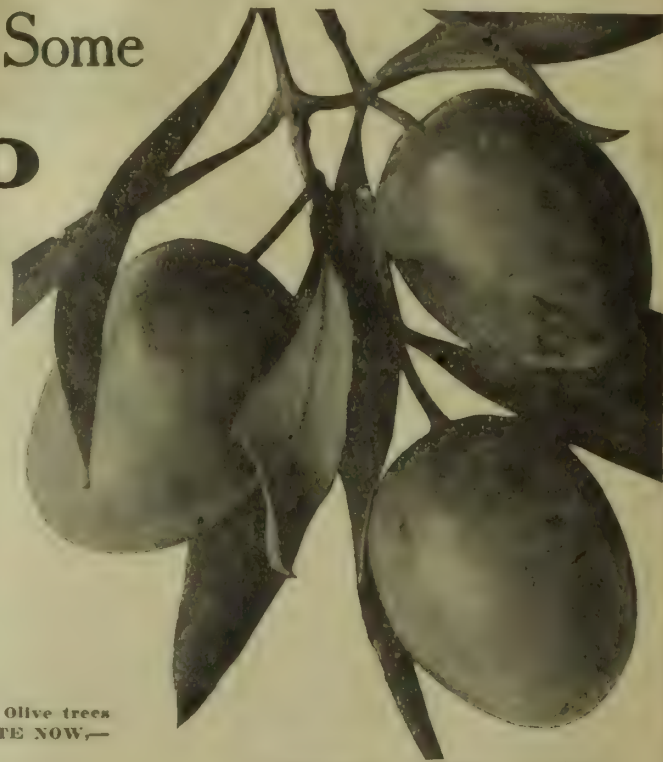
Your Olive orchard should contain at least one-third Ascolano trees. This variety is the largest and best pickling Olive grown; one of the earliest to ripen. On account of its large size, attractive appearance and superior quality, demands the highest market price.

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—producing extra large fruit of highest quality;
—and by our method of propagating and growing Olive trees, the BEST obtainable are produced: Straight, clean, thrifty, well-rooted stock;—also, by our system of digging, packing and shipping, they reach the planter in best of condition.

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Can also supply high-grade Mission and Manzanillo Olive trees in all sizes and any quantity at—right prices. WRITE NOW,—TODAY, stating your wants.



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Spring Canker Worms.

[Written for Pacific Rural Press.]

In the spring you may find "loop worms" on your apple, prune, apricot, cherry, pear, or plum trees eat the first of March, the females emerge from their tough, grayish brown cocoons which have been just under the surface of the ground all winter.

The first business of the females is to climb a tree (for they have no wings) and to lay their eggs, often in bunches, in protected places under rough bark, etc., on the trees. The hungry youngsters hatch just in time to eat into the young leaves, sometimes being numerous enough to defoliate the tree. When they get tired of eating, they drop to the ground and pupate until the following spring.

To keep the eggs and young where you can give them an effective soap wash of one pound soap dissolved in five gallons of water, apply a thick band of tree-tanglefoot a couple of inches wide just below the head of the tree or fasten sticky

bands around the trunk so they cannot crawl through under them, or trap the worms with a wire screen as many growers do, including M. Sharpe of Solano county. He shaves a strip of bark a few inches wide around the tree smooth, but not any deeper than necessary, puts a strip of cotton over the shaved strip, and fastens a strip of wire screen tightly over this with its lower edge flared away from the trunk. Worms cannot crawl under and past the screen on account of the smoothed bark and cotton. But in some seasons they crawl under the screen by the hundreds ready for slaughter.

Plowing and cultivation before they emerge from the cocoons injures large numbers of them so they do not survive. If they get onto the tree and begin eating leaves, arsenate of lead paste four pounds per 100 gallons of water or arsenate of lead powder two or three pounds per 100 gallons, should be sprayed once or twice on the leaves as they develop.

Citrus Irrigation.

[Written for Pacific Rural Press.]

"One thing I've learned in irrigating orange trees," says C. A. Davidson of Tulare county, "is that a row 32 trees long is too far to run the water, especially if the surface is nearly level. Trees farthest from the flume look far better if they receive enough water, than those next to the flume. The latter are over-soaked and turn yellow.

"Another point is that in heavy ground, if the water gets next to the tree trunks, it bakes and when it cracks it squeezes so hard against the bark that sap is stopped and

sours from the ground up.

"With a bunch of such trees, discolored and soured on the trunks, Mr. Davidson had good luck by cutting slits in the bark as wide as his finger from three inches below ground to three inches above the discolored area. This let the gum out, loosened the soil, and the trees healed without further treatment. With lemons, and less necessarily with oranges, such wounds should be painted with Bordeaux paste and the soil kept away from them, to avoid infection with real gummosis.

BLACKENED SPOTS ON PEAR LEAVES.

The pear leaf blister mite is a very common pest in many districts. It causes the leaves to blacken in spots where the mite is present. These blackened spots represent galls or swellings of the leaf tissue in the center of which the mite resides. When first forming, these galls are blister-like and reddish in color. While mainly abundant on pear, the blister mite also may attack the apple, in which case the galls are brown in color. During the summer time the mites live entirely in the blisters, producing eggs and young therein. At the approach of cold weather the mites migrate to the bark of the tree, hiding themselves in rough bark around buds and twigs.

According to Dr. A. L. Melander, entomologist of the Washington Experiment Station at Pullman, the best control measure seems to be a spraying of sulphur-lime given in early spring, when the buds are swelling. After the mites have entered the leaf tissue they can not be exterminated, although spraying with colloidal sulphur is claimed to afford some relief. This finely divided sulphur keeps the mites from spreading, especially to the fruit. In case of bad infestation the fruit is scarred with similar blisters.

Sixty-six applications to purchase State land, involving 20,770.42

After a citrus tree is four years old, it doesn't pay to intercrop according to L. G. Duval of Ventura county and Mr. Carroll of Orange county,

among others. Cultivation and irrigation of the intercrop interferes with proper operation of the citrus crop.

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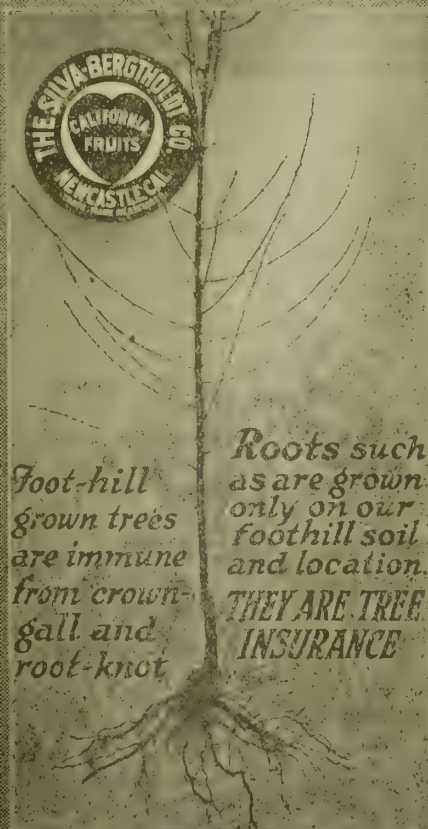
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acres, were made to Surveyor-General W. S. Kingsbury during the past two years, according to the biennial report of his office made to the Governor.



Foot-hill grown trees are immune from crown-gall and root-knot

Roots such as are grown only on our foothill soil and location. THEY ARE TREE INSURANCE

We Insure You Trees Free From Disease

Don't gamble on the future of your orchard.

Don't risk the loss of several years of your time and the waste of your money by getting nursery stock that may be infected with crown-gall or root-knot.

IF YOU BUY OUR FOOTHILL GROWN TREES

they will come to you clean. The foothill lands on which we grow our trees are immune from crown-gall, root-knot and diseases common to other localities.

Our trees are propagated from the best parent trees of their kind. They have those well-branched fibrous roots, such as are grown only on our foothill soil and location. These roots are tree insurance—hardy trees—heavy producers of good fruit—profit makers.

For years we have grown nursery stock and have successfully operated 1000 acres of commercial orchard. All our experience in fruit growing and shipping is at your disposal.

If you are in doubt as to what trees to plant—if you are having trouble in your orchard—or have orchard problems—write Bergtholdt.

Our foothill grown trees are in great demand. Many varieties are selling out fast.

If you want disease-free, foothill-grown Pedigreed trees, send us immediately a list of your wants for special quotations.

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350 Brown Turkey	Brown
200 Celeste	Black
50 Cernien	Black
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500 Mission	Black
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Wine Men Cut Loose from Saloons.

More than one hundred members of the California Grape Protective Association held a meeting in San Francisco on January 11. A statement to the public was adopted with only two negative votes, as follows:

This association is not wedded to the American saloon. It never has been. It believes the evils of the present system could be practically exterminated if the people would awaken from their provincialism and follow the example of continental Europe. In the cafes and gardens of Germany, France, Italy, Spain, etc., where men and women, priest, rabbi and minister, congregate to sip light wines and beers and to while away a few hours in pleasant converse, drunkenness is unknown, and even occasional intoxication is extremely uncommon.

In those countries the evils of the liquor traffic, as we knew them, are non-existent, and the drink problem has been solved by the custom of the people—a custom no fair-minded friend of temperance over there would change and the beneficial results of which are patent to any intelligent and unbiased observer.

Resolutions Adopted.—Tracy Learner of Gilroy introduced a resolution, summing up the position of the grape growers, which was passed. The text of the resolution follows:

Whereas, the grape and wine industries of California are desirable and legitimate industries, fostered and encouraged by the State and nation; and,

Whereas, we believe the only way to enjoy and derive benefit from wine is to use it at the table with meals, whether in the home, the hotel, the restaurant, the cafe, or the club; and,

Whereas, the people of California, by their vote on November 7, 1916, showed conclusively that they were against complete prohibition and the annihilation of the grape and wine industries, but in favor of abolishing the saloon as it is conducted today; therefore, be it

Resolved, that the California Grape Protective Association is strongly in favor of drastic steps to clean up all places where spirituous, vinous and malt liquors are sold to be drunk upon the premises, and that if this cannot be promptly accomplished, that we will get behind any movement that will abolish them forever.

Officers Elected.—Frank Swett of Martinez was elected president; H. F. Stoll of San Francisco was re-elected secretary; Louis Wetmore of San Francisco, George R. Belcher of Pomona, C. J. Wetmore of San Francisco, James Madison of Fresno, and J. T. Langford of Acampo, directors. Fifteen more directors will be chosen by various associations throughout the State, and these will select three vice-presidents and a treasurer.

SPRAY FOR PEACH LEAF CURL AND WORMS.

To the Editor: Which would you advise as the best spring spray for curl leaf and peach moth—Bordeaux or lime-sulphur? My Elbertas were badly curled last spring, and some on the Phillips Clings. Which is the best nozzle to use, Bordeaux or vermorel?—J. M., May.

Bordeaux will not affect peach moth; so lime-sulphur is preferred; for it will get both curl leaf and peach moth if properly applied as the buds are swelling. Bordeaux type nozzles give the most force and are preferred except for spraying trees in full leaf, when a fog spray, such as the evermorel type produces best, is more likely to reach all surfaces.

H. P. D. Kingsbury of Redlands, manager of the Citrus By-Products Company, reports the receipt of an order from the Merrill Soule Company of Syracuse, New York, for 30,000 pounds of orange peel. It is said that it will take 300,000 pounds of oranges to get this much peel. As cull oranges are used, this order will stimulate the market in Redlands for cull oranges.

A NEW PROCESS OF PICKLING RIPE OLIVES.

[Written for Pacific Rural Press by Prof. W. V. Cruess.]

The Agricultural Experiment Station has, for many years, been investigating the matter of color in ripe olives. Various methods have been devised by the Station and by commercial packers for equalizing, intensifying and preserving the color. All of these were at first slow and imperfect. The method based on exposure to air, first published by the Station, has been most commonly used, but has the defect of requiring too much time. Many attempts have been made to shorten and perfect this method, especially during the last two seasons, and while the method has been improved it is still laborious and time-consuming.

Laboratory tests during the present season showed that darkening by aeration could be accomplished while the olives remained in the liquid and without exposure to the air. All that was necessary was the continuous circulation and aeration of the liquid. Larger tests were made under factory conditions. These were made at the pickling works of Hunt Bros., at Hayward, who kindly placed the necessary facilities at our disposal. Those tests proved that the method was equally suited to large scale work and was not only superior to direct aeration in equalizing the color, but was much more rapid.

Mr. Staley, the superintendent of the factory, was of great assistance in helping to work out the mechanical details of the process.

The method consists essentially in keeping the various solutions in more or less continuous circulation and aerating them by means of spraying or falling through the air, by air inlets to suction or discharge pipes, or by compressed air. The result is not only a more perfect coloring of the olive, but better quality and a remarkable shortening of the whole process. Olives require by the new process only 3 to 6 days from lug box to can, instead of 3 to 6 weeks, as with the old methods. This would increase the possible output of a factory many times.



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Reclaiming a Flooded Alfalfa Ranch.

[Written for Pacific Rural Press.]

Last spring's floods took about 150 acres of E. H. Webb's alfalfa in San Pasqual Valley, San Diego county. But he still has some hillside, and already he is reclaiming the flat waste where the river raged. Looking down from his hillside home, what was alfalfa looks like pure sand. A lot of it is. That is why he is planting alfalfa on it now. Later on, say in March or April, that will dry out several inches deep, so that young alfalfa plants could not live. It was plowed in December and one piece was being sown Jan. 12. The heavier land will be sown between now and February 28, a piece at a time. Barley was sown 30 to 40 pounds per acre about New Year's to help protect the young alfalfa from wind-driven sand while it is small.

Some of the land is only 18 inches from the present watertable. It would not support old alfalfa, but a crop of four or five cuttings will be taken off the first year; then it will be plowed under in the spring to enrich the land. If left longer, the roots would probably rot off, according to Mr. Webb. While the alfalfa is on, if there is any overflow, which occurs about once in four years, the stubble will catch some soil. Where alfalfa is plowed under is the only place a good silage corn crop can be grown here.

The river channel is now in better shape than ever before, says Mr. Webb. It is wider, and restraining works have been put in on gentle curves or straight lines. Willow posts cut in January and driven butt-end down in the sand along the proposed course of the water, will root and form a more and more permanent bank. Brush cut and set slop-

ing down stream with the crotches against the posts will grow and add strength. Meanwhile a new barbed-wire has been stretched to connect a mile of such posts to help support each other when water presses hard against some. The brush will let some water through. Such back-water will not be so swift and will drop some of its sediment so that each flood will build it up some. The channel is to be kept free of drift-wood, which is one of the greatest causes of overflow.

Having started the reclamation of this land and having protected it, a lot of brush bottom is being grubbed out and leveled preparatory to seeding so new fields may be planted. No stumps are left on seeded land. "If flood water runs over smooth alfalfa, it doesn't hurt it," says Mr. Webb. "But if there is a tree, stump, post, or obstruction, the flood will dig a hole around it."

Before the flood, this land averaged about two feet above the winter watertable. The flood put as much as three feet of somebody else's dirt on part of this, really improving it for alfalfa in the one respect of getting it high enough so alfalfa roots can develop and live. Some of the filled-in dirt is silt, where the current was not strong, especially behind the willows of the river bed.

In exposed places it is more sand or gravel. But this sand, as Mr. Webb observes, disintegrates and turns dark under action of sun and air for three or four years if kept moist. Where the plow does not turn it up to the sun, however, it remains white sand. Between 50 and 75 acres was moved to the lower reaches and not filled in. This area is to be used for corn, beets, etc.

What the Cannery's Merger Means.

There has been some apprehension lest the newly formed merger of several cannerys into the California Packing Corporation might get growers into a corner some day. On this subject George N. Armsby, vice-president of the corporation, is reported as saying:

"The California Packing Corporation does not want to make a single contract for fruit or vegetables that does not show the grower a profit. If the grower does not prosper, we will not. We are dependent upon him for our supply of canning materials. We have got to see that he makes a profit. Although we own several thousand acres of orchards, we must still buy the great bulk of our supplies."

The old California Fruit Cannery's Association was a merger of many older concerns. Some were fearful that this strong organization might hurt the business. What happened? They built splendid modern canneries, made liberal contracts with the grower, so that the farmer, by taking proper scientific care of his orchard, could be assured of the profitable sale of his fruit for an indefinite period, and finally they inaugurated a big publicity campaign and increased the consumption of California canned fruits and vegetables. The business of all other firms in this line directly benefited.

"I believe that the fruit and vegetable growers of the State are going to be benefited by the merging of packing interests represented in the California packing corporation. There will be many economies affected, but most important to the grower, the market for his produce will be expanded by means of a world-wide advertising campaign, which this merger, by reason of its strong financial position, is able to make."

BEARDLESS BARLEY.

To the Editor: Where can I get good, clean beardless barley?—L. O. C., Danville.

Write to the seedsmen who are advertising in Pacific Rural Press. We invite the attention of all our readers to our advertising columns where they will often see announcements that will save them the price of a year's subscription. But whenever you want us to answer a question which is not of general interest, be sure to enclose postage for personal reply.

NO UPLAND RICE.

To the Editor: Could rice be grown here without flooding the land? What kind should I plant for upland culture? Where can seed rice be secured?—W. S., Healdsburg. We believe there is no variety of



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rice suitable for culture without flooding from a time shortly after it comes up until shortly before it is harvested. The Government Rice Experiment Station at Biggs probably has names of growers who have seed free from watergrass. Yolo County Horticultural Commissioner Wm. Gould of Woodland inspected several fields for certified seed the past season. Rice can scarcely be grown profitably on land that will produce a good crop of grain or fruit. It is essentially a crop for wet places that are not good for other crops.

KILLING RATS IN BARN OR GARAGE.

To the Editor: I would like to have you recommend some effectual method of getting rid of rats in a small barn or garage. Have only been troubled with them six or eight months, but the old ones will not touch a trap, eat strichnine or other poison.—Subscriber, Campbell.

Various rat-killing methods have been described in past issues. You

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might try this one: Saturate rags with carbon bisulphide and put down the holes as far as possible. The subscriber who recommends this says that if you can get the gases of carbon bisulphide near the rats they will surely die.—Eds.

Turlock Merchants and Growers, Inc.

[Written for Pacific Rural Press.]

The fiscal year of the Turlock Merchants and Growers, Inc., was ended Jan. 1. General Manager D. F. Lane's review of the year's work shows that they shipped this season 1,355 cars of cantaloupes, 315 cars of watermelons, 19 cars of grapes, some casabas and sweet potatoes, about 4000 tons of corn, and several carloads of beans. They financed growers for about \$6,000 worth of Rockyford seed and \$50,000 worth of shook. Twenty-five million stickers were distributed to grower members, one to be put onto each melon, and 700,000 labels were distributed to be put onto crates.

A cash advance of 15 cents per standard or pony crate and 10 cents per flat was made beginning the second week of the season, and a second advance gave the growers 87½ per cent of their money before final returns were in.

During the 1915 season, a corps of men was sent to the Rockyford, Colorado, district to get some seed. They selected 5000 pounds of Pollock's No. 25 which was distributed to members in order to have uniform melons to ship under the T. M. & G. brands. In 1916, men were sent again to Rockyford where they purchased the finest fields obtainable for 1917 seed.

During the past year 16 Imperial Valley and Colorado cantaloupe experts were employed to visit growers in their fields and show them how to grow and pack the melons up to standard. These men became inspectors at the receiving sheds when the crop began to move.

Shipping sheds were erected at Denair, McGill, Keyes, Turlock (one on each of two railroads), and a receiving station at La Grande. One at Turlock is 372 feet long, the largest in the State. Fifteen cars may be loaded at once from this shed by trucking through one line of seven cars to a line of eight cars on the next track. New shipping stations are planned for 1917 at Livingston, Hatch, and Hughson, on three different railroads. The Association had 141 men on its payroll last summer.

New Members.—During the season of 1916, 350 new grower members joined the Association unsolicited, making a total of 675. In

July, 1915, when that season opened, there were just 50 grower-members.

More about Crops Handled.—The value of 1914 cantaloupes was estimated at \$40,000. During 1915, the first year of the T. M. & G., the Association handled one-third of the crop and distributed \$140,000 among the growers. In 1916 they distributed \$380,000 to the growers for cantaloupes alone. With watermelons, this was the first season the T. M. & G. was able to get into the San Francisco market, which they did by establishing stores in San Francisco and Oakland. This year they handled 40 per cent of the local crop. Early in the season, they advertised in the East that 250 cars of Zinfandels would be available, emphasizing their value as table grapes. Rains almost destroyed the crop, but growers were paid \$15 a ton for the 19 carloads shipped, delivered in lug boxes at Turlock, and the Ass'n furnished the lugs. They were shipped in these lug boxes, one car going to Springfield, Mass. The T. M. & G. are the largest handlers of grain in the district, having stored grain in 13 warehouses this year. The cantaloupe shipping-sheds are converted into grain and bean warehouses to be used that way until June. The Turlock district, with its tributary country, had 8,000 acres of Egyptian corn, valued at \$250,000, and 3,000 acres of beans last year. In 1915 there were 5,000 acres of corn; in 1914, 3,000 acres. In 1915 there were 2,000 acres of beans; in 1914, 1,100 acres; in 1913, 1,000 acres; in 1912, the acreage was nominal. Many of the above statistics are taken from Mr. Lane's comprehensive detailed article written for the Turlock Tribune.

Other Plans for the Future.—A complete grain and bean cleaning plant is planned for the 1917 crop, including machinery for grading, polishing and weighing beans and for cleaning, weighing and rolling grain at about cost. Grain is to be stored for the usual spring rise in price.

Experiment Station.—F. H. Wilson, a University graduate instructor with much practical farming experience, has just been appointed by the T. M. & G. to experiment with all various crops adaptable to the Turlock district on two or three sep-

GOOD ROADS VALUABLE TO ALL.

Proposed road betterments are sometimes opposed by owners of property not abutting on the sections to be improved on the ground that it is unfair to improve at public expense a road passing the lands of a few men and leave other roads in an unsatisfactory condition. Such obstructionists assert that while they must pay road taxes they receive no benefits in return. Prof. B. K. Coghlan, of the Agricultural and Mechanical College of Texas, has recently reported some observations in that State which are a good answer to such claims. In one country where gravel roads extend but eight miles from town, farmers living beyond the improved roads haul wood during dry weather to the ends of these roads and pile it there. When bad weather comes and it is impossible to work in the fields, they haul this wood into town over the good roads without difficulty, and thus utilize a part of their time which would otherwise be largely wasted. One farmer uses two teams in hauling to the end of the improved road, where one team is unhitched and left with a friend and the other team used to draw the load into town. In another case, where the farmer formerly spent two days in hauling a single load to market, the construction of a good road for about half of the distance enabled him to make a material saving. He uses two wagons, each with two teams, which haul the loads in one day to the end of the good road. The next morning all the load is out on one wagon, which goes to town with one team, and the three other teams return home. These instances show that while it is desirable, of course, to have improved roads to each farm, where this is impracticable, all farmers derive considerable benefit from the improvements which it is possible to make with the available funds.

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arate representative farms on different kinds of soil. Twenty acres have been leased, and 20 or 40 more are planned. He will work in co-operation with the University and County Farm Adviser C. M. Connor; and a very important part of his duties will be to act as a local farm adviser for members of the T. M. & G. He will figure all costs of production.

Finance.—For all of the services of the T. M. & G., including this experimental work, salaries, the Colorado seed selection, members' advisory work, shipping, and all expenses incidental, handling of shook at cost, etc., the Ass'n reserves 15 cents per crate for standards and ponies and 10 cents per crate for flats. It does not pay freight or Eastern brokerage out of this. It does not make any more, directly, if higher prices prevail than if lower; but if it does not show better sales and returns to

growers, than its competitors, of whom there are new ones in the field, its membership will vanish and its revenues decrease. So, while it is not paid a commission for its service, there is every reason for it to give the best service and so increase its membership and revenue and its returns to the growers.

DO NOT SOAK INOCULATED LEGUME SEED.

To the Editor: I inoculated melilotus seed for part of my orchard last year and planted part without inoculation. I had a good stand of vetch all over the 20 acres the season previous, but no cover crop of any kind had been grown before that, either in winter or summer. On the inoculated part of the melilotus the stand was not nearly so good as that not inoculated. Was it due to moistening the seed and then putting it into the dry hot soil early in September?—J. E. A., Fair Oaks.

[Answered by Western Soil Bacteria Co.]

While the querist is not one of our customers, we will all agree that if his seed had been moistened to any great extent and allowed to swell and then put in the dry soil the results would be about as he reports.

TOO LATE FOR MELILOTUS.

To the Editor: I am thinking of sowing melilotus in my vineyard which is over 20 years old. Do you think, if put in immediately, it would have a long enough growing season if I left it till March, or possibly April, before plowing? Do you think that subsoiling an old vineyard would improve or harm it? My vines are 6x12.—P. R. A., Dinuba.

Planting melilotus as late as November has often resulted in unsatisfactory stands. It needs warmer weather for germination, though after the first leaves are out it grows little all winter except roots. Your plan of letting it grow till grapes are well set is fine, for it will dry out the soil enough to help prevent coulure. We would like to know more of our readers' experience with root pruning such as you propose with the subsoiler.

SPREAD MANURE FRESH.

The Ohio Experiment Station shows that a ton of manure spread directly from the stable to the field is worth 75 cents more than a ton left in an open barn-yard for three winter months and then applied. Other experiments have shown that a ton of fresh manure treated with 40 pounds of superphosphate and spread immediately is worth nearly \$2.50 more than a ton of untreated manure left in an open barnyard from January to April.

CORN EAR WORM.

[Written for Pacific Rural Press.]

Corn ear worms spend the winter in pupal cells in the ground. Plowing and harrowing expose these to birds and frost or break them up or bury them too deep to come up. This is useful of course only where corn was grown last year. It is only a help, for the adults are flying moths which may come to your corn from neighbors. In the growing season powdered arsenate of lead mixed with an equal quantity of sulphur or flour is dusted on the silks where the eggs are laid.

Would you plant your fruit trees in large tubs?

"Without the use of dynamite in tree-planting," says U. S. Bulletin No. 38, "the roots soon meet with the smooth and compacted sides of the hole, through which they have great difficulty in penetrating. The tree is in about the same situation as if it had been planted in a large tub."

But when you plant your trees in holes blasted with

GIANT FARM POWDERS

STUMPING — AGRICULTURAL

the trees will grow faster, develop deeper, stronger roots, and bear earlier. "When dynamite is used," continues the bulletin, "cracks are formed in the soil to distances of five or sometimes six feet on all sides. This makes the very best conditions for the continued growth of the tree. For tree planting dynamite is recommended confidently as the best method of preparing the soil."

In selecting explosives for your orchard work, be careful to get those that will crack, powder and loosen the soil, rather than pack it or throw it in the air. The proper explosives are the Giant Farm Powders. There are two of these—Eureka Stumping Powder and Giant Stumping Powder—both improved forms of dynamite, made especially to meet western agricultural conditions. They are sold by distributors everywhere. Ask your dealer for them.

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General Agricultural Review.

FIELD CROPS.

According to advices from Tulare, a large acreage is being planted to grain in that county this year.

Rumor has it that a new sugar beet factory is to be built in Surprise Valley by capitalists from Utah.

The Alameda Sugar Co. announce that they will plant 2,000 acres of sugar beets in Sutter county this year.

Tobacco will be grown on 50 acres of land near Mountain View, Santa Clara county, this year, according to a report from that place.

Farmers in the southern end of Monterey county are said to be plowing every acre available with the intention of planting a large acreage to grain.

Nevada reports state that the Nevada-Utah Sugar Co. have contracted for over 4,000 acres of beets the coming season for their factory at Fallon.

A report from Southern California states that estimates of the 1917 beet sugar acreage are now placed at 75,000 acres, due largely to the good prices prevailing last season.

Rice is being shipped from Sacramento River points to San Francisco, 16,000 bags having been sent by boat from that district since the first of the month.

A movement is on foot in the Tullock district to increase the tomato and asparagus acreage to a sufficient extent to insure a good run for the local cannery.

A tobacco-growing experiment will be made the coming season on 50 acres of land near Los Banos by Arkelian Bros., extensive cantaloupe growers of the San Joaquin valley.

It is announced from El Centro that 70 per cent of the cotton crop of 1916 is picked and 60 per cent ginned. It is estimated that the crop of the Valley on both sides of the international line will be 65,000 bales, valued at about \$7,500,000.

According to the Southern Pacific Milling Co. there were 500 cars of lima beans in warehouses in Ventura and Santa Barbara counties on Jan. 1. There were also 11,035 bags of large whites, 179,713 bags small whites, 16,615 bags pinks, 57,287 bags blackeyes.

The advice of L. H. Stephens, president of the California Rice Growers Assn., to California growers is to hold their crop for better prices. He says that New Orleans millers are short of rice and will be in this market within the next 60 days. He believes growers will be able to secure 2 1/4 to 2 1/2 cents a pound for their rice by holding.

A report from Ventura says that estimates have been made that two months would be required to complete the work of cleaning the beans on hand in the warehouses that have been discarded because of the condition of the Eastern market. It is thought the demand will continue heavy and necessitate cleaning until late spring or summer.

The Southern Rice Growers' Association gives the total yield of rice in the United States for 1916 at 9,609,175 bags and the total acreage as 876,672. California is credited with 980,000 bags. In considering the crop by bags, it must be remembered that the bags used in the south are larger than those used in California, the average weight being, it is said, around 160 pounds.

Representatives of cotton gins at Calipatria predict that fully 25,000 acres will be planted to cotton in Imperial county this year tributary to Calipatria. Fifteen thousand acres, it is said, will be planted to cantaloupes, while there will be about 20,000 acres put in corn, barley and other crops. Over 10,000 acres have been planted to grapefruit during the past two years.

Onion growers in San Joaquin county predict a heavier planting of that crop in that county this season, some estimating the increased acreage at two or three times what it was in 1916. Last year 3750 acres were in onions in that county. Reports from the same district estimate the potato acreage for the coming year at 30,000 acres, an increase of 7,000 acres over that of 1916.

The International Institute of Agriculture at Rome, Italy, estimates the wheat production of Argentina at 70,000,000 bushels, one-half that of last year. Australia's wheat crop is estimated at 135,000,000 bushels, which is four per cent better than the yearly average. For the world's eighteen most important countries, including the United States, Canada, British India, Japan and all Europe, the estimated total wheat crop is placed by the Institute at 2,500,000,000 bushels which is 25 per cent less than last year.

It is announced from San Luis Obispo that a \$28,000 garden pea crop is now being harvested near Pismo off of 85 acres. The peas are bringing 10c per pound and are being shipped to the Los Angeles and San Francisco markets. In speaking of fruit, the County Horticultural Commissioner says there are the following acreage in trees in the county: Almonds, 3388 acres; apples, 1046; pears, 1978; peaches, 797; prunes, 993; apricots, 626; walnuts, 639; cherries, 38; grapes, 291; mixed, 333; lemons, 23, and berries, 13.

A decrease of sixty million bushels in the corn crop from the estimate made in November and an increase of 32,000,000 bushels in the wheat crop were shown Dec. 15 in the Department of Agriculture's final estimates of the country's important farm crops. Their value, based on prices being paid farmers Dec. 1, show these figures: The corn crop is worth \$573,103,000 more than last year's; the wheat crop \$83,462,000 more; oats \$96,673,000 more; potatoes \$95,071,000 more; hay \$95,250,000 more; tobacco \$72,727,000 more and cotton \$475,378,000 more.

DECIDUOUS FRUITS.

The first commercial shipment of walnuts was made from Chico recently to parties in Stockton.

Reports from Porterville indicate that there will be a considerable acreage in that district planted to prunes this season.

O. E. Bremner, county horticultural commissioner of Sonoma county, has recently condemned a shipment of prune trees that were shipped into the county because they were infected with peach borer.

Apple growers of the Yucaipa Valley predict a bumper apple crop this fall. Growers say that the trees have put out more fruit spurs this winter than ever before and this is always an indication of a big crop.

The first of four carloads of pear trees that are to be planted in the Atascadero district of San Luis Obispo county have been received. It is the intention to plant 1200 acres of land to that fruit there this year.

Announcement is made by the California Peach Growers Inc. that a contract has been made with the newly formed California Packing Corporation whereby the latter firm will market all of the peaches of the former association.

The Winters Dried Fruit Co. have recently purchased the plant of the Winters Canning Co. The canning of fruit will be discontinued, the entire interest being centered on green and dried fruit packing and shipping.

On account of the large acreage of beans and pimientos which have been signed up in the country sur-

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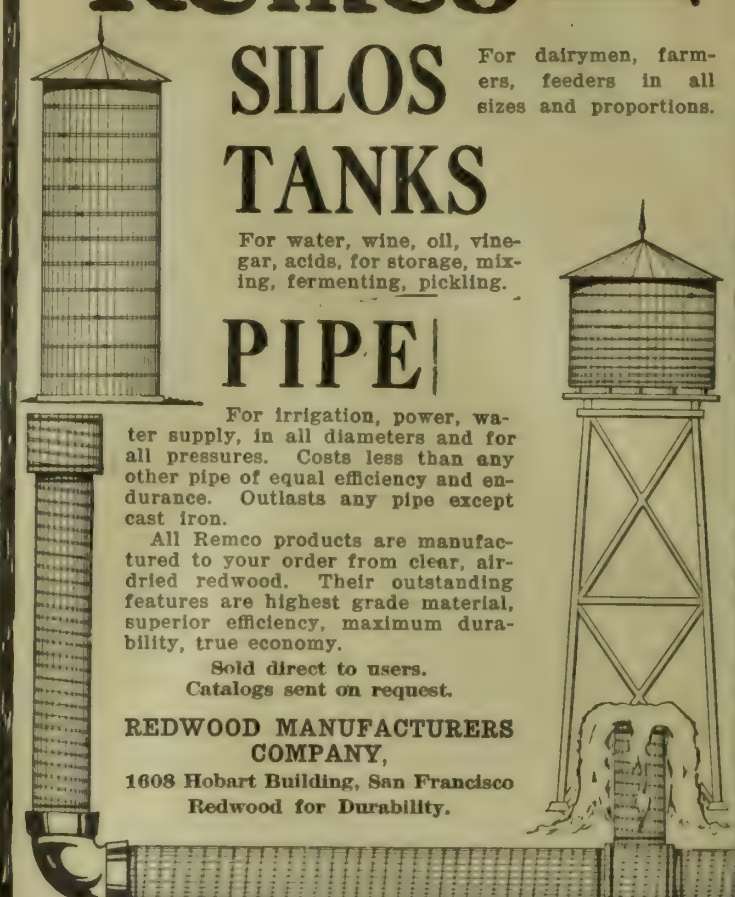
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is open to you—to every farmer or farmer's son who is anxious to establish for himself a happy home and prosperity. Canada's hearty invitation this year is more attractive than ever. Wheat is much higher but her fertile farm land just as cheap, and in the provinces of Manitoba, Saskatchewan and Alberta

160 Acre Homesteads Are Actually Free to Settlers and Other Land Sold at from \$15 to \$20 Per Acre

The great demand for Canadian Wheat will keep up the price. Where a farmer can get near \$2 for wheat and raise 20 to 45 bushels to the acre he is bound to make money—that's what you can expect in Western Canada. Wonderful yields also of Oats, Barley and Flax. Mixed Farming in Western Canada is fully as profitable an industry as grain raising.

The excellent grasses, full of nutrition, are the only food required either for beef or dairy purposes. Good schools, churches, markets convenient, climate excellent. Military service is not compulsory in Canada but there is an unusual demand for farm labor to replace the many young men who have volunteered for the war. Write for literature and particulars as to reduced railway rates to Supt. of Immigration, Ottawa, Can., or to

GILBERT ROCHE,
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Makes a Perfect Seed Bed—Stops Evaporation—Preserves Moisture—The Best Clod Crusher ever made for Farmer, Orchardist, Vineyardist, Nurseryman and Seedsmen—Made in All Sizes—Write for Circular.

Manufactured and Sold Exclusively by
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625 MARKET ST., SAN FRANCISCO

rounding Santa Ana, the California Packing Corporation announce that they will reopen the cannery at Santa Ana.

In their survey of deciduous fruit supply, the Chamber of Commerce of Riverside county report 1959 acres of apricots, 1145 acres peaches and 535 acres pears. It is argued that a cannery is needed in that district to care for the large amount of fruit being grown.

The California Prune and Apricot Growers' Inc. have appointed Geo. E. Merrill to act with the members of the campaign committee favoring the establishment of a deciduous fruit experimental station. They will endeavor to get the present legislature to provide funds for such a

station with adequate equipment.

The first concerted action on the part of the growers of the State to obtain a deciduous fruit research and experiment station have been taken. A. V. Stubenrauch, professor of pomology at the University of California, and W. L. Howard, associate professor of pomology at the University Farm school at Davis, have effectively explained the value of such an institution and its requirements.

According to J. F. Niswander, general manager of the California Peach Growers' Ass'n, there were only about 9,000 tons of dried peaches held over from 1916 on January 1 and he believes sufficient demand has been created to more

than take care of this amount before the new crop is ready to market. The 1916 crop totaled about 30,000 tons, compared with 34,000 tons in 1915 and 38,000 tons in 1914.

County inspection of deciduous trees for peach tree borer in the Hemet district is aiming to clean out this pest. Where borers are found in an orchard they are chiseled out, all crown gall taken off, disinfected with fire in some cases, and with corrosive sublimate and other chemicals in others, to some distance down on the roots, and fumigated with cyanide under tents like citrus trees. The work except inspection is charged to the orchard where it is performed. It costs about 20 cents per tree besides fumigation.

CITRUS, NUTS, SEMI-TROPICAL.

The cannery at Porterville has finished its olive pack for this year.

Advices are being received by orange growers at Lindsay from the East to the effect that prices for holiday oranges were good, one grower netting \$1.66 per box for his fruit.

The California Olive Growers' Ass'n are just completing the second largest and best-equipped oil and pickling plant in the state at Fallbrook which will cost \$15,000.

Orange packers in the Pomona district are said to be withholding eastern shipments of fruit till such time as their fruit is more mature and till markets in the East are in better condition.

In order to relieve the car shortage the Santa Fe railroad suggests that citrus fruit shippers load 448 boxes to the car instead of 384 as at present. This would relieve 8,000 cars for the shipping season.

Orange growers in the district west of Tapo and south of the river in Ventura county with approxi-

mately 1200 acres, of which 300 are in bearing, held a meeting last week to discuss joining the California Fruit Growers' Exchange.

The Tulare County Growers' Ass'n who are contemplating the purchase of a cannery in Tulare county are investigating the device for peeling of oranges as they believe there is a possibility of utilizing the cull oranges in the making of marmalade by its use.

Shipments of citrus fruits from the Riverside district have been small since the Christmas pool, partly attributable to the frosted oranges which have been rushed to market by Tulare shippers. It is expected that by the middle of the month shipments from all southern points will be back to normal.

California olive growers will ask the incoming Congress to increase the duty on olive oil from 20 cents to 60 cents and add a tariff of 25 cents a gallon on ripe processed olives. It is stated that with such an import duty, many thousand acres of land in the State could be profitably set out to oil olives.

The Lindsay-Merryman Citrus Exchange passed a resolution at their last meeting favoring the formation of a Standardization Committee with power to regulate and prevent shipment of immature fruit. The commission would consist of State Horticultural Commissioner, State Market Director and Director of State Board of Health. Approximately 4,000 acres are represented in the association.

In our issue of Dec. 23 we clipped a paragraph from an exchange which stated that the Northern California Olive Corporation would open a retail store in New York City. Commenting on this paragraph, H. Pierson Burt, president of the corporation says: "Mr. Fowler is a small stockholder, not the principal one, and we have no intention of opening a retail store in New York. We have this year sold several cars of olives to the large New York wholesalers, and it would do us a great deal of damage with the wholesale trade if it were learned, even inaccurately, that we would enter the retail business."

VINES AND VINEYARDS.

J. W. Jeffery has started his investigation into vine diseases at Dinuba having as his assistant W. B. Baird of the University of California.

It is estimated that 300 cars of Emperor grapes were shipped East this year in drums. Those that were sent before the rains arrived in fine condition, but some of those shipped after the rains did not fare so well.

Because of their success in increasing raisin consumption by the more general consumption of raisin bread, the California Associated Raisin Co. propose to start a similar campaign for "raisin pie." The campaign will be national in scope as have been their other campaigns.

According to the annual report of the viticultural commissioner, there were 126,000 tons of grapes harvested in California during 1916 as compared to 124,000 tons in 1915. Thompson Seedless production showed the greatest gain, the production of Sultanas and Muscats showing a slight decrease.

The Associated Raisin Co. will pay another advance to its growers who delivered their seedless crops to the company. On Jan. 25, it is announced, they will pay \$40 per ton on Sultanas and \$50 a ton on Thompsons, in addition to the advance paid on delivery. Final settlement, of course, is still far in future.

The American Federation of Labor has organized, under the name of Agricultural Workers' Union, the vineyard workmen of central California. The agreements signed by the union call for an eight-hour day at \$2.50; gangs of eleven or more to be furnished with a cook by the vineyard owners; gangs of under eleven or under to be furnished with a cook for five hours; gangs

working more than five miles from the city to be furnished with sleeping quarters and other accommodations; and a water boy for service in the vineyards.

MISCELLANEOUS.

Santa Barbara county sold last year, olives, lemons, walnuts and beans to the extent of \$3,000,000.

Applications for loans under the Federal Farm Loan Act to the amount of \$140,000 has been received at the Solano County Farm Adviser's office.

According to Prof. D. N. Morgan, 800 farmers in California had signified their desire to borrow money through the Federal Farm Loan bank, up to Jan. 11.

Once more the House of Representatives at Washington has appropriated money for the "free seed" budget, notwithstanding opposition from farming interests.

Marcus A. Lee has been appointed to succeed Professor C. W. Rubel as farm adviser in Alameda county, Rubel having been promoted to the post of assistant State leader.

Frank Lyons, Farm Adviser of San Joaquin county, has resigned his position to engage in farming. Ralph D. Robertson has been appointed to fill the position.

The supervisors of Sacramento county have appropriated \$2,000 a year for the expenses of a farm adviser. February 1 is set as the time for the adviser to commence his work.

Commercial interests and livestock breeders in Yolo county are already making plans for a big county fair at Woodland this year. The tentative dates have been set at August 29 to September 1.

State-wide meat inspection is proposed in a bill to be presented in the coming legislature, backed by State Veterinarian Charles Keane. The inspection expense would be covered by a system of fees.

Farm loans aggregating \$80,000 have been recommended by the Humboldt County Farm Loan Association. The association was organized under the provisions of the new Federal land bank act.

California rice interests will be represented at the National Foreign Trade Commerce to be held at Washington, D. C., by S. M. Phillips, who will encourage favorable legislation for the benefit of American rice growers.

The year of 1916 was a good one with ranchers of Orange county. Its lima bean crop has been put at 350,000 bags worth \$5.00 per 100 pounds, and blackeye peas 70,000 bags worth \$3.25 per 100 pounds. Its walnut crop is said to have been worth \$1,500,000.

PRUNE AND APRICOT ASSOCIATION ASSURED.

On Tuesday morning of this week there still remained \$20,000 worth of stock in the Prune and Apricot Growers' Ass'n to be subscribed for, the balance of the \$500,000 worth having been signed for by growers all over the State.

It had been hoped that all of the stock might be taken up by Jan. 15, which was termed "Sign up Day," but the executive committee declined to proceed with the election of directors till the entire stock issue had been cared for. For that reason the closing date was postponed. As this is written a report from San Jose says that the organization committee feel certain the required amount of stock will be sold, as a conference of large growers who have not heretofore subscribed for stock is being held and will likely take the remaining shares.

Just as we go to press Mr. Geo. Merrill, Secretary of the Prune and Apricot Growers' Association, advises us by phone that the acreage required as a basis on which to proceed with the organization has been signed up and that the election of trustees will be proceeded with immediately.

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Showing easy lever operation

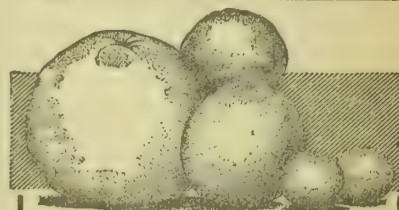
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Write today for special offer and free booklet on Land Clearing.

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PROFIT comes from fruit, not foliage. On Citrus fruits use immediately available

Nitrate of Soda

It works while the fruit buds are forming.

"Orange Culture" is a valuable book I will send to you Free if you will but ask for it. Send post card.

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MISSION OLIVES EARLY RIPENERS.

THE EHLMANN OLIVE CO.

Oroville, Cal., Nov. 17, 1916.

Mr. W. A. Hayne, Box 481, Marysville, Cal.
Dear Mr. Hayne: Answering your kind favor of the 16th, I am enclosing herewith photograph of some of this year's fruit on the Fogg grove, and you will note that they are above the average Mission. We also were able to harvest this entire crop before the frost, which shows that they are early ripeners.

We will be glad to keep in touch with you on this matter, and if we can be of any further service, don't hesitate to let us know.

Yours very truly,
(Signed) E. W. EHLMANN.

I propagated the Fogg orchard thirty years ago. The origin of the Fogg trees was directly from the old Mission at Santa Barbara. The trees I have now for sale are full brothers to the Fogg olive trees, and, like the Fogg trees, they are all propagated from the large size cuttings.

W. A. HAYNE.
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FRUIT TREESTOCKS

APPLE SEEDLINGS—

Am. Grown and Imported.

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We have some Japan and Kieffer Pear Seedlings at San Jose, Cal., which we are offering at special prices.

Send us your list for prices. We will have several more cars to California.

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Budded Avocado Trees

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3 1/2 lbs., \$1.00; 3 lbs., \$1.00

WILSON'S OFFER—

Wilson will parcel post any of the above grades, all charges paid. You use 1 lb. If it is unsatisfactory, return the rest, and Wilson will send you postage.

MIND YOU, NO CHARGE FOR THE POUND USED.

If you are pleased and keep the coffee, you agree to send the \$1.00 with 10 days.

IS THAT FAIR?

When ordering, kindly state how you want coffee ground—fine, medium, pulverized, or in the whole bean.

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NOW IS THE TIME

TO PLANT

WAGNER'S IMPROVED

WINTER RHUBARB

Special prices for immediate planting. You should derive splendid results within 6 months. Also BERRIES, small fruit and Cactus. Write to

J.B. WAGNER

Rhubarb-Berry & Cactus Specialist

PASADENA, CALIFORNIA

Seventy varieties of ferns in three and four inch pots now ready—including maiden hair—25 cts. each; \$2.50 per doz. by express. Seven varieties of carnations, cut flower varieties; rooted cuttings by parcel post, 75 cts per doz for a short time. 40 varieties of pelargoniums in 2 1/2 in. pots, ready for four inch; by express, ten cts. each; \$1.00 per doz. My selection. My catalogue will be ready by February 1st.

BROOKDALE NURSERY.

Geo. N. Tyler. Los Gatos, Cal.

Mechanical Power on the Farm.

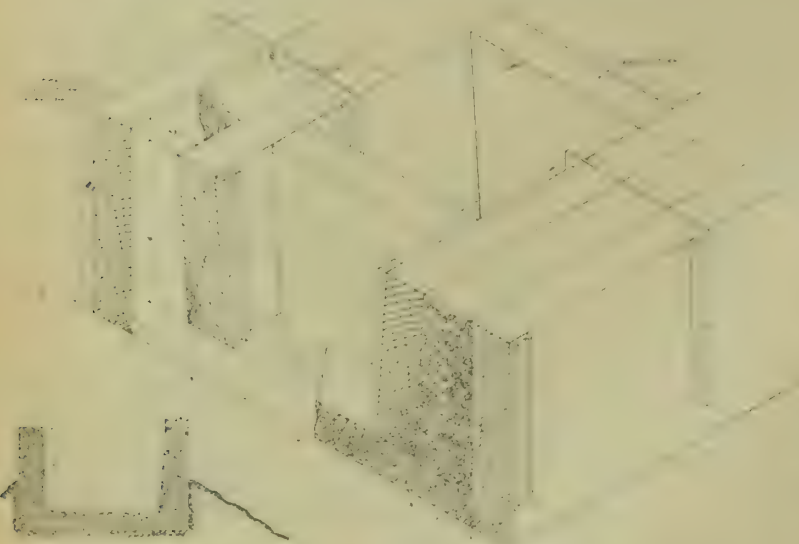
Users of tractors, engines, pumping plants, motor trucks, automobiles, electric motors, and other mechanical farm power are invited to make this department an exchange of your experiences and troubles.

CONSTRUCTING A CONCRETE FLUME.

To the Editor: What size concrete flume is necessary to carry stream from a 4-inch centrifugal pump (estimated 400 gallons per minute), with a fall of 2 inches per hundred feet. Flume to be built on top of

ment to 5 parts coarse sand and gravel should be used. The cost will be from 20 to 25 cents per lineal foot, depending upon conditions.

The sketch shows the method of making and placing a set of the above described forms.



Cross-section View of Concrete Flume.

earthen embankment across a swale a distance of 1200 feet. Seven hundred feet from pump is a branch at right angles 400 feet long. Want to make flume of rectangular or obtuse angled cross section. How thin can the walls be made, and of what proportions? Can get coarse sand. —Subscriber, Galt.

[Answered by S. H. Beckett, Assistant Professor of Irrigation Practices, Univ. of California.]

A rectangular concrete flume with a bottom width of 12 inches and 9 inches in depth will safely carry 400 g.p.m. when laid on a grade of 2 inches per 100 feet. The side walls of such a flume should be 2½ inches thick on top and 3 inches at the bottom. The thickness of the floor should be 2 inches.

Such flumes are constructed on the ground, using a set of 12-foot forms into which the concrete is placed. These forms consist of outside walls, held in place by stakes driven in the ground or by a heavy U-shaped straddling iron. The inside form is built in the shape of a bottomless trough held a proper distance apart by spacing blocks. To build the bottom and sides at the same time the inside form must be blocked up to a height equal to the thickness of the floor. Small shrinkage cracks will probably occur at the joints, and these may be filled with heavy asphalt oil after the forms have been removed and the concrete set.

In building a considerable length of flume a quick removal of the forms is necessary; this is possible by using a comparatively dry mixture of concrete, thoroughly tamped into the forms. This requires the concrete to be kept moist (generally by sprinkling) for a period of several days or until the concrete has thoroughly set. In building such a flume it is necessary that the foundation be thoroughly settled before construction begins. A settling of the flume destroys the grade and generally leads to disastrous results. A mixture of at least one part ce-

TRACTORS IN CALIFORNIA.

To the Editor: How many tractors are there in the State?—C. C. C., Palo Alto.

[Answered by Prof. J. B. Davidson, University Farm.]

We have little information on which to base such an estimate. We understand that there are 1600 tractors of one make in use in this State. We believe that all the others put together would not ex-

ceed 1900; of these, perhaps 750 are tractors made outside the State.

We do not consider this estimate very reliable.

20-35 YUBA BALL TREAD TRACTORS

More Powerful.
The Same Price.
The New Model 20-35.
At Less Price. . .
Equally Powerful.
The New Model 12-20.

Write for the Yuba Catalogue. Every farmer should have one. It's free.

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Don't Miss the Big Money
The Hercules stump puller is the best you have. You can pull out a tree or more of stumps in a day at a cost of from 50c to 1.00 per stump. No matter how big or tough the stump, it walks right out when the Hercules gets hold of it. With the stump come all the long tap roots that spread out in all directions. The land is left ready for cultivation.

HERCULES Triple Power Stump Puller
Let us send you proof that thousands of farmers have made big money by the Hercules stump puller. Send 2 propositions.
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Ask About Hand-Power Pullers Low Price 120,000 Pounds Pull

SET YOUR OWN PRICE



That's what every man does who owns *Properly Irrigated, Ditched, Tile Drained or Terraced Land*. And if you don't want to sell, your increased yearly profits are just like turning waste land into cash. Progressive land owners in every State and practically every county in the Union have discovered that the *only* way to bring their land up to the desired state of production is to get a

Bostrom \$15 Farm Level

and make spare days the most profitable days. Also fills the bill for Grading, Road Building, Foundation Work, etc. The Bostrom Farm Level has been on the market over thirty years, the latest improved having a *Telescope with Magnifying Lenses* which enable you to see the cross on the Target a quarter of a mile away. Man Size Tripod, Leveling Rod, Target, Plum-Bob and full instructions included. Weight, 15 pounds. It is used and endorsed by Agriculture Schools and U. S. Farm Demonstration Agents, and you will endorse it, too, after using it—if not *Your Money Back*, including express both ways. Write today for description of *Level and Telescope*, details of our *Money Back Guarantee*, and names of *Jobbers* in San Francisco, Sacramento and Los Angeles who carry it in stock. BOSTROM-BRADY MFG. CO. 105 Madison Ave., Atlanta, Ga.

Read This Before You Buy a Tractor

If you could be sure you were getting the right tractor—a good reliable, economical machine—wouldn't you buy one for this Spring's work?

You have hesitated to choose from the many offered because you could not be sure that the tractor you bought would be the best one for you. That is the policy of a good business man.

The two claims made for most tractors are these—That the tractor will do your work and that it runs on kerosene. These two features are vital. They should be **guaranteed**, not merely claimed.

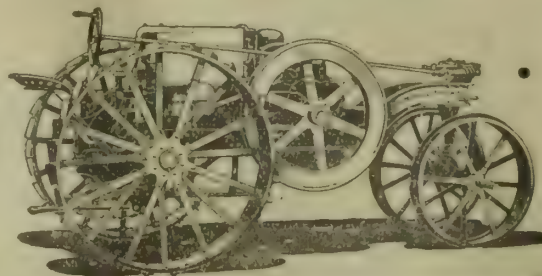
They are guaranteed in Mogul tractors.

Mogul tractors are guaranteed to do good serviceable work and to operate successfully on kerosene. The order blanks contain a warranty to that effect giving you the written guarantee of a responsible Company.

What better assurance than this can you get?

Buy a Mogul tractor—a tractor built to International Harvester Company of America

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Crawford, Neb. Denver, Colo. Helena, Mont. Los Angeles, Cal.
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Mogul 8-16
Kerosene Tractor
\$725 Cash f. o. b. Chicago

operate on kerosene; that does operate successfully on kerosene; that the Company guarantees to work on kerosene; making that guarantee in the printed warranty that you keep when you order.

Mogul 8-16 is without doubt the most popular and successful kerosene tractor on the market to-day, and no wonder. It has a simple,

one-cylinder, slow speed, kerosene burning engine with crank case completely enclosed to keep out dirt. Hopper cooled. Starts and runs on magneto. Mechanical oiler takes care of all engine bearings. No gears to shift. Chain drive. Travels at correct plowing speed for section where sold. Turns in a 10-foot radius.

Does all the heavy field work that horses are used for, and any belt work up to 16 H. P.

Because Mogul 8-16 is so popular, it is not always possible to make quick delivery. Now that the kerosene burning feature is guaranteed, sales will be still larger. Don't wait. Start now to investigate. Your order will have to be placed soon to insure delivery in time for the first good plowing days of Spring.

No Pit

is required with the

**KROGH
DEEP
WELL
TURBINE
PUMPS**

For bored or drilled wells from 10-inch inside diameter up; and for capacities of 250 gallons per minute up to 3000 gallons per minute. Built for pumping from any depth to and including 250 feet. They are absolutely water balanced and are self-aligning. More water can be obtained from such wells than with any other type. Built in belted or direct motor driven types. If interested, write for Bulletin.



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**Orchard Heating
WITH
BOLTON
ORCHARD
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PREVENTS**

Frost Damage

IN YOUR ORCHARD
1 and 2 Gallon Capacity.
SEND FOR BOOKLET.

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FROST PREVENTION CO.**
Merchants' Nat. Bank Bldg.,
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**WITTE HIGH-
GRADE ENGINES**
Kerosene, Gasoline, Gas, Distillate
2 to 22 H-P.

For operating belted machinery, elevators, pumps, feed grinders, bone mills, cream separators, crushers, blowers, hoists, etc. — Stationary or portable, also Saw-Rigs, complete. Largest exclusive engine factory in the world selling direct to the user. Saves \$25 to \$100 — Immediate Shipment — Write for latest WITTE prices and catalog of engines. State size wanted, or what work you have. — ED. H. WITTE, PRES.

Witte Engine Works,
2867 Oakland Avenue, Kansas City, Mo.
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SCIENTIFIC PATENTS
Dewey Strong & Townsend
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Circular containing 100 mechanical movements mailed free.

ENGINE SILAGE CUTTER SAVES FIRST CROP ALFALFA.

[Written for Pacific Rural Press.]

While J. M. McKindley of San Joaquin county uses electricity for most of his pumping for 116 acres of orchard alfalfa, and corn, his 25 h.p. gas engine, 130-ton silo, and 17-inch silage cutter are about equally useful. The alfalfa crop last spring was infested with broncho grass and foxtail, so that it would not have made good hay; yet he could not afford to lose it; for he has 32 cows and several bulls, besides young stock which live on alfalfa and silage.

The crop was cut when in full bloom, and run through the silage machine direct from the mower. It made good silage with no bad smell. It reminded Mr. McKindley of the smell of tobacco curing. The cows seemed to like it as well as corn silage, but gave better yields on the latter because of its more balanced nature.

Silage was fed all summer. Five acres of corn from old alfalfa land was cut early and put on top of the alfalfa silage. Only 2/3 of this had been fed out in November when corn was bought to fill the silo again. As the aim is to feed about 900 pounds per day, to the average of about 30 cows milking, this ought to last, with addition of alfalfa next spring, until late corn is ready to cut for silage. Alfalfa pasture and hay supplement the silage when available and needed.

The Engine is mounted on two 8x8 timbers 12 feet long so it can be moved from place to place. Its two flywheels extend a foot below the timbers so they make good wheels for moving. Holes in the ground must be dug for them while in use. Five cells and a coil supply the spark for starting, but a magnet run by the flywheel keeps it going. An 18 h.p. engine would run the silage cutter, says Mr. McKindley, so he has an abundance of reserve power.

TRACTOR NOTES.

[Written for Pacific Rural Press.]

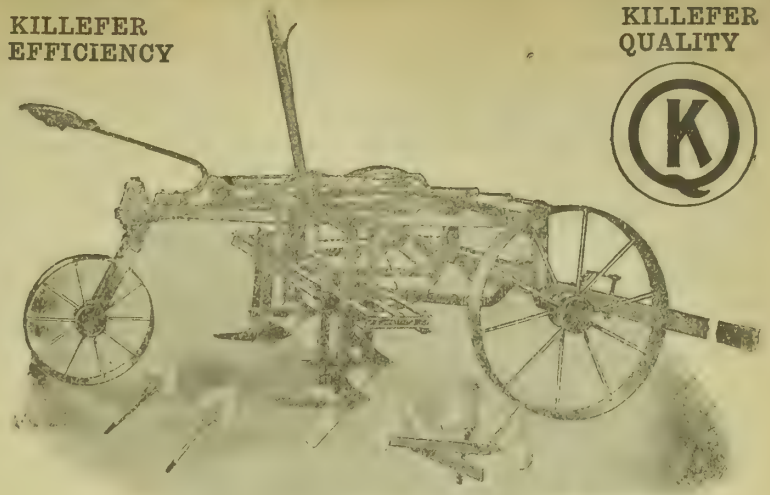
A minimum of repair expense, and only half a day of lost time in rush work have been obtained from Baird Bros. 60 h.p. tractor bought in 1911 for their 11-acre Yolo county grain ranch.

Their tracks are not jerked to pieces by sudden, heavy starts. When noticeably worn, they are repaired before they get stretched out. When a track is stretched badly, it wears the sprocket teeth too, by catching on the tops of the teeth. Baird Bros.' engine was run until the first-motion chains were stretched, so a link was taken out. It then ran until last spring when a new chain was put in because it had stretched still another link. New liners were also put in. They keep an extra track on hand, however, for emergencies.

The Motor is generally taken down twice a year, at the beginning of fall work and of summer work. It takes a day or two to overhaul the motor and grind the valves, etc. Last spring was the first time they gave the entire tractor a general overhauling. This took two men three days. It paid well, for it resulted in steady work when the work season was on.

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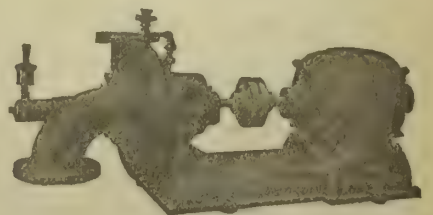
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WRITE FOR CATALOGUE NO. 47.

BYRON JACKSON IRON WORKS, Inc.

SAN FRANCISCO.
LOS ANGELES STOCKTON, VISALIA

Livestock Facts and Fancies---XVII.

SOME BASIC PRINCIPLES GOVERNING THE BUYING AND SELLING OF PUREBRED LIVESTOCK.

[By the Editor.]

Separate Interests Have Separate Problems.

Last week we preached about our notion that there might be in the livestock marketing in this country two quite different sets of conditions and problems, which might have to be solved in two different ways. There might be one commercial way for the higher-ups and a very different way for the lower-downs. We use these terms quantitatively and not with any reference to moral or intellectual quality in either, for that would involve comparisons which are odious. For example, we can conceive that "Paddy and his Pig" may have as reasonable a conception of how to save his commercial bacon with that pig as Mr. Jastro may have of how he can make his 25,000 cattle commercial tenderloin—that is, supposing Paddy is as deep-thinker and deep-seer as Mr. Jastro is known to be. And so we use the terms higher-ups and lower-downs with neither adoration nor condemnation; both are exactly the same to us if we can do them any good. If the higher-ups find out, by the investigation which they are calling for, that, for their purposes and capacities, the packers and stockyard magnates are cut-throats and pirates, let the range men perform those pleasant functions for themselves. On the other hand, if these capitalistic packers and hotel-keepers for livestock are better for the small growers than the agencies which they now have for turning animals into cash let them call for more of them. We do not see that there need be any conflict between the two, for they are so different in quantities and capacities that they may need dif-

ferent cures for existing evils, as we have already suggested. In truth, we are not sure but the creation and capitalization of their own packers and stockyards by the range men and the multiplication of proprietary packers and stock-yarders, through a more direct trade with farm-growers of the animals they need, may, by their inter-action, make things continually better for the farm-growers, and for consumers also, by increased competitive transaction which will pay the farmer more and charge the consumer less, through the elimination of the multitude of parasitic middlemen who are now pushing out of plumb every one they can get a shoulder on. Of course we do not claim to know whether these things are true or not: we are only talking as though we knew, for the purpose of shelling some trenches to see if there are any facts in them.

Two Distinct Lines of Procedure.

But this is not the real theme for this week's sermon, though the text is in it. Our present thesis is approached by an analogy. If there are two methods of development and progress on the selling side: one for the higher-ups and the other for the lower-downs, always speaking quantitatively and not otherwise, may it not be also true that there are also two very different and still rational avenues toward progressive development and popularization of purebreds on the breeding side? We apprehend that there are two distinctly different lines of policy and procedure in promoting the sale of purebreds for breeding purposes, and the broad interests of the industry may make both of them rational—each in its own way and for its own ends. Favor for one does not mean disfavor for the other; in fact favor for one may make greater favor for the other more desirable.

Will Sky-High Prices Popularize A Breed?

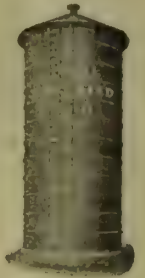
We have condemned trickery in livestock selling. Trickery consists in jockeying animals, in its lower forms. In its higher forms it may mean conspiracy to inflate prices beyond real values and to entrap the ignorant and unwary by propagating ideas that certain animals are worth more for common pure-breeding purposes than they really are. To resort to either of these lines of falsification to raise current values is deceit to the individual buyer and disastrous to any breed of animals which is treated that way, because it turns popular attention to other breeds and therefore injures all who own animals of the breed which is subject to such inflation. The worst thing that can happen to a good breed is to subject it to boosting by conspiracy. It creates no permanent or general advance in values and therefore cannot be rightly claimed to serve the interests of all who have the breed. General values advance now-a-days chiefly by performance. When fancy values are lifted beyond the relative merit of

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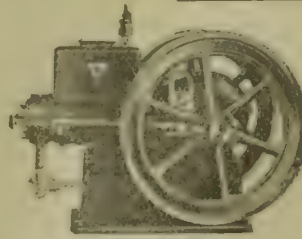


JAMES BARN EQUIPMENT



Cow Comfort

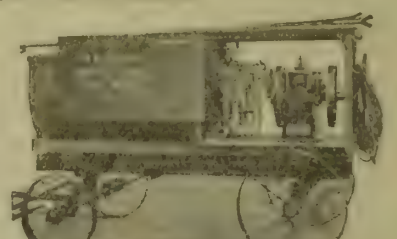
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Automatic Power Sprayer Fitted with the Alpha Automatic Pressure Governor. A Safe, Dependable Rig.

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producing values the breed loses real friends and supporters and falls into popular discard. This is not a theory; it is a fact, and it has been realized, more or less anciently, with a number of good breeds, and it is likely to fall upon any breed, no matter how good it is, when men go wrong with it.

Are Extreme Prices Ever Warranted.

"But," says some reader, "on the basis of such reasoning, do you hold that purebred sales expecting fancy prices and laid out to secure them, are wrong?" Not at all, if the stock is as represented. Fancy sales with honey-tongued auctioneers and highly professional exhorters on the platform and cricket-jumping demonstrators in the ring are all right for the higher-ups, who know what they want and why they want it. An auction sale of dress-coats is just as legitimate as a sale of overalls—providing the buyers can afford to spend the money and do not buy the swallow-tails to milk in. And providing they can afford to blow the money, it is legitimate to milk in a dress coat, but it is rough on the coat and shows that the buyer lacks common sense. It is much the same way with these higher-up sales of

breeding animals which are laid out so that the average overhead cost per animal for scenic features is a good part of what a good serviceable purebred is intrinsically worth. They are perfectly proper, if they are not conspired, and they serve an excellent purpose among fancy breeders for they put a cash-measure upon fancy points which such breeders may need very much in their

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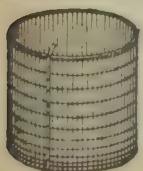
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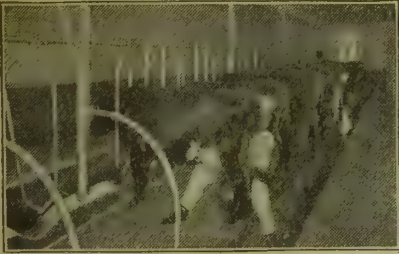
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The more energy your cows are obliged to spend fighting flies, combatting disease, and striving for physical comfort, the less they have for milk production. They are sensitive animals, and can do their best only under the most favorable conditions.

Transfer your herd to comfortable, sanitary, Loudon Steel Stalls and watch the milk supply jump! The cows will be healthier, more contented, more productive; they can't help it.

That's one side—the cow's side.

Then there's YOUR side.

The increased production is clear profit—often a good margin in itself.

The stalls simplify the care of the cows. It's but a few moments' work to open the stanchions or snap them shut, and once in place you know the cows are safe. No chance to get loose, to become entangled, or to trample one another.

Let us quote you prices for your complete equipment.

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More calves have been raised on Blatchford's Calf Meat than on all other milk substitutes combined.

100 lbs. makes 100 gallons of milk substitute, costing only one-third as much as milk. Prevents scouring and insures the early maturity of sleek, handsome calves.

It is steam-cooked and no trouble to prepare or use.

Write for Pamphlet "How to Raise Calves Cheaply and Successfully with Little or No Milk." At dealers, or Coulson Poultry & Stock Food Co., Inc., Petaluma.



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Thirty-five years in this business in Stockton. — A 500-gallon tank, \$10.00. A tank 6 ft. x 2 1/2 ft., \$8.50. Other tanks equally cheap. I deal direct with the consumer, saving 10% to 25%. All sizes in stock. Clear, dry redwood direct from the mill. Write for price today. machinery. Doors, Windows, Frames, Mouldings.

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Mature Stock and Weanlings of both sexes. Sure to please.

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business—whether it be for nicking-in, or for pedigree-writing, or for prize-winning or for advertising—we do not care which it is for, for they are all legitimate factors in the fancy line. But to glory in paying high prices simply because they are high is foolishness; and to glory in high prices for the general purposes of popularizing the breed and winning favor for it, is mistaken, because it will surely work the other way, as we have suggested.

Who Is Justified in Paying High Prices?

"Well, then," persists the obstinate reader, "no one but a fool or an ass will patronize such sales and pay such prices: is that your argument?" Not at all. If a breeder knows what he wants in an animal of a certain form, pedigree and relationship and knows what he can do with the characters the animal embodies, it may be wise for him to go his whole pile to get it and the glory incidental to his getting it may be a valuable consideration also. We do not object to a knowing man paying as much as he likes for what he wants—providing he does not have to mortgage his automobile to get it. Our obstinate reader cannot trap us into making such an admission as he desires. Instead of that we will say, boldly, that these fancy sales are, as a rule, perfectly legitimate for those who take part in them. They are for the men who know what they are doing, and if a sucker falls in occasionally he learns what's what afterwards. It is childish to blame the mudhole for the sucker's muddy pants.

We Need Sales of Purebreds for Practical Farmers.

"But," again retorts the obstinate reader, "you do not find common farmers buying at such fancy sales." That is perfectly true and always will be. In the nature of things buying and selling at higher-up sales must be either real or pretending fanciers and with that understanding the projectors of such sales are entitled to hear the best that can be truly said of them, and it is our regular practice in this journal to do that. But we are just as sure that the general industry of breeding purebreds needs an entirely different method of disposing of its output of surplus animals, with entirely different methods and purposes, and with satisfaction at an entirely different range of prices. Our readers will have to guard their faith in particular breeds against the reaction in popularity and values which unwise boosting brings about, because boosting for fancy points is apt to reduce appreciation of actual producing values. Therefore we need sales which are not dominated by interests of fancy breeders and traders. We need to have embodied in buying and selling of purebreds, the everlasting truth, in fact and principle, which we are always trying to enforce in these columns by publishing in detail what our readers are doing with purebreds in actual farm production. We need public sales conducted on this basis to which farm breeders can send good purebreds in quantity, at which the mere overhead of a fancy sale would constitute a good profit. Until these are provided the intending buyer

Easy to Turn-Why?

BECAUSE the women-folks can turn as slow as they please, and still get all the cream!—true of no other separator. Most separators have to be turned .55 to 60 turns a minute or they lose cream. But if you want, you can turn a Sharples at only 38 or 40 revolutions per minute and still get a perfect skim—for the wonderful Suction-feed drinks up the milk only as fast as it can perfectly separate it. Again, the bowl hangs from a single frictionless ball-bearing running in a constant bath of oil. That, too, means easy turning. The bowl has no heavy discs in it—little power is required to set it spinning.

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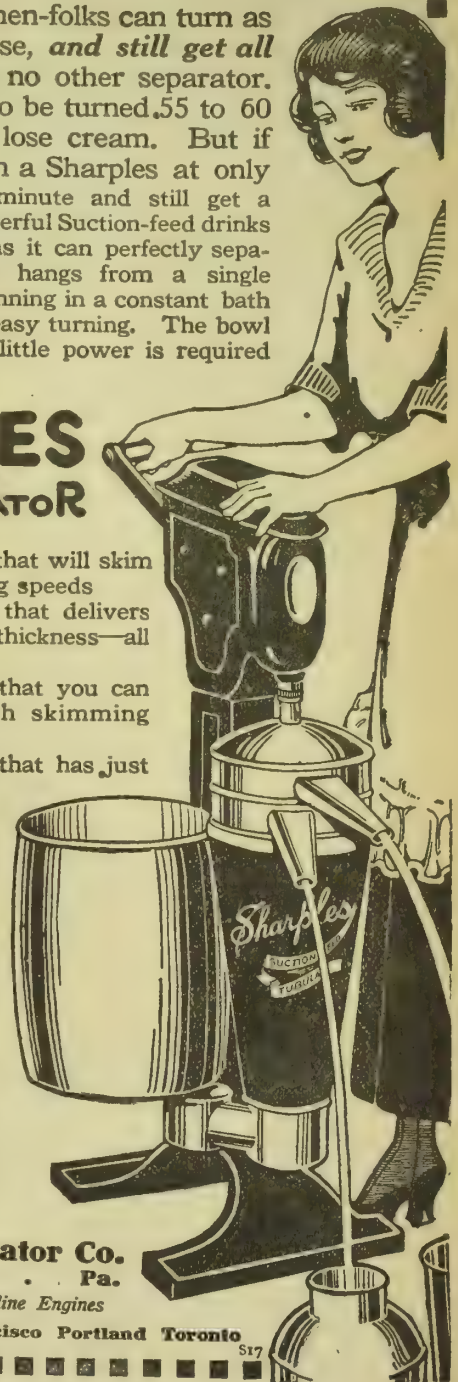
- is the *only* separator that will skim clean at widely-varying speeds
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Made and strongly guaranteed by the largest and oldest separator factory in America. Repair cost is practically nothing—so ruggedly built that many a Sharples has not cost one dollar for repairs in fifteen years. Over a million users—in every dairying country of the world. Send for catalog to Dept. 31.

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I am offering several young **HOLSTEIN BULLS** for sale from A. R. O. dams, sired by Creamcup Cornucopia, whose five nearest dams average 26.56 lbs. of butter in seven days. Correspondence solicited.

LESTER A. DRIVER, Nicolaus, Cal.

for actual farm use will have to seek what he needs by visiting the breeding farms of our advertisers or by correspondence with them. The public sales we now have are all right for some breeds. We should have associations to conduct the same kind of blue-sky sales for all good breeds.

Separate the young bull from the heifers by the time he shows signs of early development. Confine him with other bulls of his own age or with young steers. By the time he is a year old he can be given light service, but he should not be used more than once a week.

A sheep with one pair of permanent teeth is a yearling; a sheep with two pairs is a two-year old; with four pairs, a four-year old.

Hog Cholera Serum

I represent one of the greatest Government Inspected Hog Cholera Serum Plants in the whole country.

NO BETTER SERUM MADE.

An ounce of prevention is worth a pound of cure. Find out about this serum today. Price Right.

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Purebred livestock sales given special attention

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Economy of Shelter for Dairy Cows.

[Written for Pacific Rural Press.]

While only a wild guess could be made as to the loss dairymen experience in wet weather through exposure of cows to the storms and standing in muddy corrals, it is known to be large by every dairyman who has watched his milk flow drop, despite good feeding, as soon as the rains commence.

With this fact in mind we are led to believe that too much emphasis is sometimes placed upon our mild winters with a resultant lack of shelter for the cows.

Of course breeders who are making records with their cows long ago discovered the necessity of dry quarters and while in most cases these quarters are crude affairs they answer the purposes fully as well as more elaborate ones. An illustration of this was seen on the J. S. Gibson ranch at Williams, Colusa county, the past year when the cow Winnie Korndyke Cornucopia De Kol was making her world's milk record for cows of her age. Her quarters were in an improvised horse barn, alongside of several other test cows, none of which were provided with more than bedding and feed from the manger.

We only mention this to show the importance herdsmen attach to shelter, even in California, and not as an example of how dairymen with large herds should operate.

But shelter for the dairymen is equally as important and need not be expensive if a building similar to one used by the Golden State Dairy Farms Co. at their ranch near Dixon is constructed.

Pasteurized milk is sold from this dairy and while a separate feeding barn is desirable in such cases, such

a building as theirs would be warranted for protection from weather alone.

It is made of rough one-by-twelve lumber, set upright without batting. The building is 22 feet high and long enough to accommodate 50 cows on each side, having a gabled roof, covered with galvanized iron.

The stanchions are built along the side-walls with room in front for the manger. An opening three feet wide runs the entire length of each side, allowing a workman to drive his wagon along the outside and throw the feed directly from wagon to manger. At the time of our visit corn silage was being fed in this manner and alfalfa hay in the milking barn, but either hay or green alfalfa can be fed in the same manner in the feed barn.

The floor is of concrete, with a drain through the center of the building and entrance is gained at both ends where sliding doors are provided. While we were unable to ascertain the cost of this building its unit cost per cow must be low.

At the time of our visit, a heavy rain had made the corrals on the ranch so muddy as to forbid entrance without boots and the adjoining alfalfa fields would have been severely injured by using them for corral purposes. Without the feed barn, milking under these circumstances would have been severely handicapped, but with it the cows could be stabled on a dry floor all night as well as fed there also twice a day without discomfort. Needless to say they were giving a larger flow of milk than if compelled to stand in the muddy corral day and night.

Study of Milking Machine Efficiency.

[Written for Pacific Rural Press.]

Milking machine efficiency is largely governed by the number of cows in the herd and the way they are operated, according to the U. S. Dept. of Agr., which has just conducted an investigation in the East and Middle West on 269 mixed farms and specialized dairies. As will be noted in the following table, the saving in labor cost is greater with herds of 15 cows or more than it is with a lesser number. The report says that

two cows. The data collected is summed up in the subjoined table:

BEAN STRAW FOR HORSES.

To the Editor: Is ripe bean straw good for horses and what is its value compared to alfalfa?—Subscriber, Merced county.

Yes; it contains more carbohydrates and less protein and fat than alfalfa hay. If your horses are not doing heavy work they can

Size of Herd	Machine Milking							Hand Milking	
	Number of farms with herds of each size	Interest on investment (per cow)	Value of milk and oil (per cow)	Cost of repairs (per cow)	Depreciation (per cow)	Labor cost (per cow)	Total cost (per cow)	Number of farms with herds of each size	Labor cost (per cow)
15 cows and less	32	\$1.26	\$9.94	\$0.20	\$1.98	\$7.39	\$11.77	28	\$10.91
16 to 30 cows	72	.79	.84	.20	1.90	7.31	10.14	63	10.26
31 to 50 cows	41	.61	.84	.25	1.49	6.03	9.22	16	10.11
51 cows or more	11	.56	.83	.36	1.12	4.47	7.34	6	10.45
Average	156	.82	.86	.22	1.24	6.79	9.93	113	10.41

milking machines must be operated by competent operators and that stripping by hand is essential if satisfactory results are to be obtained. The majority of farmers interviewed by the investigators believe that the machines have no effect one way or the other on the general welfare of the herd. They also found that the milking is most quickly accomplished when each milker operates and strips after two units, each of which milks

probably be wintered on good bean straw and a little pasture of some kind. If they are working hard, a little alfalfa hay and grain in addition to the straw would be better.—Eds.

The Standard Packing Co. of Los Angeles purchased 128 head of steers from Cutler Bros. of Visalia recently at an average price of \$100 a head.



COST What you put into a Cream Separator **VALUE** What you get out of your Cream Separator

It isn't the "out go" but the "income" that determines the real value of a Cream Separator

It's Cheaper to Buy a DE LAVAL CREAM SEPARATOR

VALUE depends upon the amount and the quality of service the article gives you—what you get out of it.

You get by far the greatest actual VALUE for your money when you buy a De Laval—BECAUSE it will give you much better and longer SERVICE than any other separator.

From the standpoint of its greater durability alone, the De Laval is the most economical cream separator to buy, and when you also take into consideration its cleaner skimming, easier running, greater capacity and less cost for repairs, the price of the "cheapest" machine on the market is most exorbitant compared with that of the De Laval.

And there is no reason why you should let its FIRST COST stand in the way either, because the De Laval may be purchased on such liberal terms that it will actually pay for itself out of its own savings.

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LARGEST DAIRY SUPPLY HOUSE ON THE PACIFIC COAST.
We specialize in Alpha Gasoline and Distillate Engines, Ideal Green Feed Silos, Irrigation Equipment, Centrifugal and Deep Well Pumps and Alpha Spraying Outfits. Send for special catalog.

101 DRUMM STREET, SAN FRANCISCO

50,000 BRANCHES AND LOCAL AGENCIES THE WORLD OVER

GRANDSONS OF TILLY ALCARTRA

We now offer two young bulls for sale that are old enough for service. No. 1—Born Sept. 13, 1915.



Prince Alcartra Korndyke.
Best bred son of Tilly Alcartra.

His Dam is a 21-25 4-yr old, sired by a son of Beryl Wayne Korndyke, who has two 30 lb. daughters. His full sister has a record of 18.56 lbs. butter in 7 days at age of 2 years 3 months and will be kept on test for the year.

No. 2—Born Sept. 3, 1915. His dam is a heavy producer and will be put on test next time she freshens. His full sister has a record of 19.36 in 7 days at 2 years 6 months and will also be kept on test for the year.

The bulls are nicely marked, have perfect top lines, are good individuals and both sired by Prince Alcartra Korndyke, who now has 6 A. R. O daughters and more coming.

Write for prices, or better come and see them.

J. S. GIBSON CO., Box 97 Williams, Cal.

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A GUERNSEY BULL

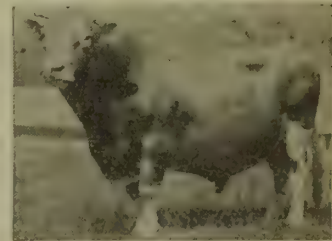
in a grade herd in Minnesota increased its production 24%.

Guernsey Grade Cows produce butter most economically.

It has that wonderful natural yellow color.

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CREAM WANTED

Ship to a House of Known Financial Responsibility.

Write Us, and We Will Send You Regular Weekly Quotations

Western Meat Co.
Creamery Dept., San Francisco.

Starts Conservatively With Cheese.

[Written for Pacific Rural Press.]

If one is in a position to make good cheddar cheese he can afford to pay six cents above the San Francisco butter quotation for milk delivered at his plant and return the whey to his customers free of charge.

Such was the conclusion of D. M. Campbell of Solano county early in January after a month's experimenting with a small, poorly-equipped factory.

Not being thoroughly acquainted with the manufacture of cheese Mr. Campbell had purchased a small outfit having a capacity of 1200 pounds of milk daily. Then he hired an expert cheese maker from the Northwest, realizing that more than half the battle with good cheese was in the cheese-maker. At the time of our visit the vats were set in the tank-house and the pressing and curing shelves in a small room adjacent to a buggy shed, so the reader may know how little expense was involved. But this was to be done away with and a factory with vat capacity of 5000 pounds of milk

daily constructed at an early date.

Mr. Campbell's experience has taught him that the maximum amount of cheese from a quantity of milk containing a pound of butterfat can be obtained with a 3.8 per cent milk and standardizes to that test. But this has nothing to do with the price paid dairymen, as they are paid on a butterfat basis and some of their tests run over 5 per cent.

With milk testing 3.6 per cent the six cents above butter quotations allows the dairyman \$.12.3 per gallon for his milk; also his whey which is worth 10 to 15 cents a hundred for hog feed. The usual price for 3.6 per cent milk sold by dairymen in the district to city dealers is 14 and 14½ cents per gallon, but more labor is involved in the latter method and no calf or hog feed is provided. If the whey is fed fresh in clean utensils it makes a good calf feed, although more has to be fed than is the case with skim milk, according to Mr. Campbell.

What Became of the Champion Steer.

To the Editor: To settle an argument, can you tell me about California Jock, the grand champion steer at the International Livestock Show? How is it that he sold for \$1.75 per pound on foot? I saw the meat, that is, a quarter of it. Would they be able to sell the meat for less than \$1.75 per pound after killing and cutting up, and why? What would the shrinkage be with a steer fed the way he was?—O. A., German-town.

It is the custom of large packers to buy grand champion steers at the big shows for the advertising they receive as a result of such purchases. In this case the California steer was purchased by a packing house in Detroit, Michigan, for \$1960, who resold the carcass, after dressing, to a retail grocer for \$1,150.50. The grocer in turn retailed him at \$1.50

per pound, he also sustaining a loss for the advertising value of the venture. The steer was delivered dressed to the grocer weighing 767 pounds, showing a shrinkage of 31.6 per cent. You will understand of course that there is but one International Livestock Show champion steer a year, and the price he sells for depends entirely upon his prospective advertising value to packers. If you saw a portion of him dressed you were a long ways from California at the time, although we suppose local butchers in many towns of the country worked off nondescript steers onto their customers, as a part of the grand champion, during the holiday season. For a California butcher to claim such distinction is amusing, to say the least.—Eds.

Knife vs. Iron for Docking Lambs.

[Written for Pacific Rural Press.]

One of the interesting demonstrations at the University Farm during the annual meeting of the Cal. Wool Growers' Association was a comparison of methods in docking lambs. A knife was used in the first test to show the old method of cutting the tail and the resultant loss of blood. While the blood lost, as a rule, is small, it was related by practical sheep growers present that this loss invariably checks the growth of lambs and in some cases results in death from bleeding.

Next the docking tongs were used. The principle of these tongs is to burn the tail off, searing the flesh and skin over to avoid bleeding. While superior to the knife in results it was claimed that too much time is required where large numbers are being docked, as both hands are needed to operate the tongs.

The last test was made with the Ellenwood iron, a round iron with a thin chiseled end. This also burns through the tail, much quicker than the tongs, however, and is operated with one hand. Those present who

have used this iron were high in its praise, as experiments with twin lambs have shown a decided difference in weight where one was docked by iron and the other by knife, and operation of it is both quick and sure.

The best age to dock was stated to be when lambs are 10 to 12 days old, preferably in early forenoon or late evening.

FROSTED ALFALFA AND LIVESTOCK.

To the Editor: What effect has the feeding of frosted alfalfa on livestock?—G. E. M., Dixon.

[Answered by J. W. Benoit, Modesto.] I have found no ill effects in feeding frosted alfalfa to stock unless the alfalfa becomes moldy, and then it is liable to cause abortion in cows.

The Oakland Meat Co. have recently shipped several carloads of their feeder cattle from Gonzales, Monterey county, to Oakland. The cattle were fattened on beet pulp and beet tops.

Wash the horses' shoulders in cold water to prevent galled shoulders.

Have the whiffletrees wide enough to protect the horses' legs from the traces.

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King Lancaster, sired by King Edward, grand champion bull State Fairs, 1909-10-11.

Shorthorn Bulls for Sale, sired by such noted bulls as King Lancaster, Knights Perfection, Greenwood Knight and Greenwood King. Nearly all offsprings of the famous King Edward.

These Bulls are conceded to be the best offering ever made from the Hillcrest Stock Farm.

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Proprietor.

Davis, California

Sires With Quality

DUROCS.

Our Durocs are of the big type, with big bone, well-arched backs and carrying good hams.

We have a few head of service boars, now ready for service, solid red in color and out of prize-winning animals.

SHORTHORNS.

Our 1916-17 offering of yearling bulls is small but select. They are all heavy boned, solid red in color and of Scotch and Scotch-topped breeding.

Suited for either the range grower or breeder.

EVERY ANIMAL POSITIVELY GUARANTEED.

Whether you buy or not, visit our ranch, 7 miles from Palo Alto on Woodside Road. We welcome inspection. Prices and pedigrees on application.

Shorthorn Cattle
Duroc-Jersey Swine

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Redwood City,
California.



Let Me Buy Your Shorthorns - Herefords

I have bought show and breeding cattle for most all of the older breeders in California and my wide experience here, together with my knowledge of Eastern herds makes it possible for me to secure

THE BEST AT A BIG SAVING TO YOU.

I am now taking orders for my next trip East to secure on a strictly commission basis, high class stock for California customers. Write me at once of your wants.

As to the service you may expect I refer you to the following satisfied customers: W. Mayo Newhall, San Francisco; W. Bemmerly, Woodland; Parrott Est. Co., Chico; Frankenheimer Bros., Stockton; A. E. Noyes and Son, Sutter City; Stanford University Ranch, Vina; Wm. Russ, Eureka; and J. A. Donohoe, Donohoe-Kelly Banking Co., San Francisco.

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35 Choice Service Bulls

15 SCOTCH AND SCOTCH-TOPPED COWS AND HEIFERS.

All registered and tuberculin tested.

A Few Choice Berkshires of Either Sex for Sale.

H. L. & E. H. MURPHY, Perkins, Sacramento Co., Calif.

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REGISTERED SHORTHORN BULLS

A fine lot of individuals. Ready for service on the range. Registered Berkshires, Holstein Bulls from high-testing cows.

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Digester Tankage

Send for Sensible folder on feeding hogs
Western Meat Company

Animal Food Dept. 704 Townsend St., San Francisco

Live Stock and Dairy Notes.

[Livestock breeders all over the State are invited to send on postal cards, notes regarding their sales, State and County Fair intentions, new stock, etc.]

DAIRYING.

A new creamery, to cost \$20,000, will be erected at Lemoore, Kings county at an early date.

The Tipton, Tulare county, creamery has been reopened as a receiving station for sweet cream.

Of the 246 dairy cows tested for tuberculosis by deputies of the State Veterinarian, nine and seven-tenths per cent were reactors.

Kings county sold during 1916 4,000,000 pounds of butterfat for about \$2,000,000, and hay to the extent of about \$1,400,000.

There were seven silos erected on dairy farms adjacent to Biggs, Butte county, last year. The owners of all of them report entire satisfaction.

There were 65 cows in the Stanislaus County Cow Testing Ass'n that produced over 45 pounds of fat during the month of December. There were 21 owners on the honor list.

The Holstein-Friesian Ass'n has advised the secretary of the Butte County Spring Exposition that it will again donate a silver cup, valued at \$50, for the best exhibit of Holstein cattle.

An enthusiastic meeting of dairymen was held at Galt last week by members of the Northern California Milk Producers' Ass'n who are endeavoring to get all of the milk producers of the valley into a marketing association.

The seven-day record for butterfat has been broken by the Holstein cow Segis Fayne Johanna, according to word received from Malcolm H. Gardner. She produced 722 pounds of milk containing 40,544 pounds of fat. This is equivalent to 50.68 pounds butter on the 80 per cent basis.

The Churchill Creamery Co. of Fallon, Nevada, announce a premium on butterfat of one cent a pound for cream testing 30 per cent or better. It is probable that this is a step toward cream grading which has been so long advocated by far-seeing California dairymen and which is now being practiced in many districts.

The high score for butter in the California Butter and Cheese Scoring Contest conducted by the University of California for the month of December was made by H. C. Watson of the Alturas Creamery, whose butter scored 94 1/2 points. There were 24 entrants whose score was better than 90. C. Kolback, cheese maker for the Henderson Co. at Galt, had the highest scoring cheddar cheese with a score of 93 1/2 points.

Among other things which the California Holstein Breeders' Ass'n will aim for after their reorganization committee has completed its work will be proper representation of the association in the Holstein-Friesian Ass'n of America. Secretary-Treasurer K. Abbott of Milpitas advises us that a membership campaign will be started at once and that he will be glad to hear from all breeders not at present members.

SWINE.

J. P. Williams of Imperial county has recently received from Ohio a choice Duroc sow, said to have cost him \$800.

H. A. Smith of Imperial county has just received a shipment of purebred Berkshires which he will use for foundation purposes.

A prominent San Francisco packer states that more good hogs were received from California points during 1916 than in any previous year on record.

Kings county continues to be a heavy shipper of hogs to the San Francisco market. Packers state that not only are arrivals from there large, but exceedingly good as well.

S. G. Owens and Son of Madera have recently purchased two registered Duroc gilts from L. D. Collins of Denair, also a Duroc boar from the University Farm herd at Davis.

We are advised by Jas. J. Doty, Secretary of the National Swine Growers Ass'n, that the 1917 National Swine Show will be held at Omaha Oct. 3 to 10. Additional show ring facilities are to be provided as well as extra exhibit barns.

R. K. Walker, of the firm of Peters, Lamson and Walker, advises us that they have recently imported from Middle Western breeders two choice Duroc gilts, bred to Critic B and King of the Col. respectively. He says his firm is now turning out 500 pigs a month from their grade herds and that this number will be increased when their 400 gilts farrow.

BEEF CATTLE.

The Frank Meacham Est. advise us that they have recently sold two Red Polled heifers and a bull to Chas. Patterson of Redding and two heifers and a bull to J. W. Rush of Pendleton, Oregon.

Bessie B. Ware of Butte county advises us that she recently sold three Aberdeen Angus bulls to W. Hughes of Lincoln. She also states that they expect to exhibit Angus cattle at the next State Fair.

By the purchase of 1600 acres of range land in the Cathay Valley of Mariposa county H. W. Cornett and Sons now have a total of 6500 acres of land in the Cathay district. They will enlarge the size of their beef herd.

Cold weather is seriously affecting cattle growers in many districts, as is evidenced by a report from Mendocino county that stock men are feeding hay, and a report from Butte county saying that conditions are no better there.

We are informed by David J. Stollery, Secretary of the newly formed California Shorthorn Breeders' Ass'n, that a meeting of the directors of that association will be held in San Francisco, Monday, January 22, to perfect by-laws and constitution and arrange for the future work of the association.

Luis Terrazas, the aged cattle king of Chihuahua, Mexico, and the Creels have purchased extensive ranch holdings in the northern end of the Imperial Valley and will use it for fattening ground for cattle from their ranches in Chihuahua and New Mexico.

David J. Stollery, manager of the Paicines Ranch in San Benito county, advises us that he has sold almost 150 head of bulls since the first of September. The dam of the grand champion steer, California Favorite, was bred on this ranch and Mr. Stollery is naturally proud of the University's winnings at Chicago.

W. E. Premo, in charge of the cattle feeding at the property of the Porterville Alfalfa Company, where 1000 head of steers and calves are being finished for the market, has started feeding cocoanut meal as a part of the ration and thus far the experiment indicates that this is a valuable addition to alfalfa and

ground barley in forming flesh rapidly.

The Lux Dividend Lands, Inc., has conveyed to Martin Griffin Co. 8264.24 acres and to Reynolds Land and Cattle Co. 8077.04 acres lying about fifteen miles east of King City in Monterey county. The land includes the southern part of San Lorenzo or Peach Tree grant and township lands adjoining. This particular range has the reputation of turning off fat cattle earlier than any other locality in the State. The transaction involves about \$100,000.

SHEEP AND WOOL HAPPENINGS.

The Widemann Goat Milk Co. near Kings City have enlarged their herd of milch goats from 1,000 to 1,600 head.

W. H. McAlpine recently shipped 4200 head of sheep from Sutter county to the San Joaquin valley because of feed conditions.

Because coyotes have become a serious menace to sheep men in the island district of San Joaquin county the supervisors have offered a bounty of \$2.50 for each coyote scalp brought in.

The Frank Meacham Est. reports the sale of 20 Shropshire ewes to the Bridgeford Co., Knightsen, Contra Costa county, and a carload of Merinos to M. E. Curtiss of Lone Pine Inyo county.

It is estimated that 30,000 head of sheep will be fattened at the Visalia Sugar Company's plant this season by the Western Meat Co. of San Francisco. The first 12,000 are about ready to be turned off now.

It was the consensus of opinion at the meeting of the California Wool Growers' Ass'n held at Davis last week that wool would reach a 30-cent basis this spring. Several stated that they had secured almost 30 cents for their spring clip last season.

According to Frank J. Hagenbarth, president of the National Wool Growers' Ass'n, there is a decrease of 30 per cent in the sheep population of the United States at this time because of uncertainty of the future wool markets, adverse legislation to the Western flock master and dogs and disease in the Middle Western States.

A report from Livermore states that lambing has already commenced on the Corral Hollow ranges and while the weather has been stormy it has not been cold. Feed conditions are reported fairly good and good percentages of lambs are looked for. Among others who have taken their bands into this district for lambing are Bishop Bros. of San Ramon, who also have a choice flock of purebred Shropshires.

A London consular report says that no wool of the 1916-17 clip consigned to the United Kingdom from Australia or New Zealand on growers' account may be offered or sold except to the director of army contracts. All persons who control stocks of wool of this description must send particulars to the director of army contracts and sell such wool as may be required by the director of army contracts.

A very fine clip of Merino wool grown in South Africa was recently sold on the London market at record prices. This clip consisted of 19 bales of super hoggets for which 38 cents per pound was paid; 8 bales of ewes, 6 bales of wethers, and 2 bales of stud, all of which were sold at 37 cents per pound; 3 bales of 11 months selling for 32 cents, 1 bale of 6 months selling at 25 cents, 3 bales of backs and bellies at 25 cents and 2 bales of locks at 14 cents.

MISCELLANEOUS STOCK NOTES.

The Secretary of Agriculture has materially reduced the amount of land that may be grazed in Lassen National forests.

Rumor has it that a packing establishment will be erected at an early date at some point in the Imperial Valley. No names are given in the report.

The Tulare County Stock Breeders' Ass'n will hold a meeting shortly to adopt by-laws and constitution and formulate plans for a county fair late this year.

HIGH STANDARD FOR TULARE ASSOCIATION.

That the butterfat standards in cow-testing associations are being materially increased is demonstrated by the following report of Chas. Klint, Secretary of the Tulare Cow Testing Ass'n, for the month ending December 31. Only those cows that produced 50 or more pounds of fat are given.

Owner	Pds. Milk.	Pds. Fat.
W. J. Higdon (H.)	2534	98.83
W. J. Higdon (H.)	1277	53.63
W. J. Higdon (H.)	1277	52.36
Ralph Smith (H.)	1938	89.15
Geo. Barber (H.)	1566	68.90
Geo. Barber (H.)	1234	55.53
F. L. Hoyt (H.)	1076	64.36
F. L. Hoyt (H.)	1442	57.91
F. L. Hoyt (H.)	1153	50.73
C. W. Mitchell (H.)	1392	64.03
W. A. Jenkins (J.)	1287	56.63
W. A. Jenkins (J.)	1395	51.62
E. L. Thomson (H.)	1401	50.44
Chas. Holmes (H.)	1429	50.02

There were 28 cows in the association that produced 45 pounds or better during the month.

HUMBOLDT DAIRYMEN MEET.

The fourth annual meeting of the Humboldt County Dairymen's Ass'n was held at Ferndale, Jan. 10, over 300 being present. Prof. F. W. Woll of the University of California was the chief speaker, his talk being chiefly confined to the feeding of dairy cows and more particularly to the California Dairy Cow Competition. In his annual report Robert Fowler stated that there were approximately 200 members in the association at this time. Officers for the ensuing year were elected as follows: President, G. M. Fulmore; first vice-president, J. W. Coppini; second vice-president, Bernard Crowley; secretary and treasurer, Robert Flowers; trustees Alex Aggeler of Ferndale, C. S. Rasmussen of Loleta and G. W. Trigg of Ferndale.

Ruby & Bowers Win Again

At the Pacific International Livestock Show, held at Portland, Oregon, last month, we won

2 Championships, 11 Firsts, 7 Seconds, 8 Thirds, 5 Fourths,

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C. W. BOWERS
Davis, Cal.

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SWINE.

Poland Chinas.

SMITH'S POLAND-CHINAS—Sows and gilts bred to Joker, First Prize Boar at the Wisconsin State Fair, 1915. These sows and gilts, sired by Iowa Wonder, who is a son of A. Wonder, the most celebrated Poland-China boar, living or dead. Litters from this mating are the best I have ever seen anywhere. Prices low quality considered. Will sell one or a carload. As a special inducement each purchaser will be given a year's subscription to the American Swineherd, the best swine paper published, and a copy of the Handbook on the Sow; also a copy of the Pig Feeders' Manual. Geo. A. Smith, Corcoran, Cal.

MAKE BIG MONEY with our Big-type Poland-Chinas. Smooth, easy feeders that make greatest weight in shortest time at lowest cost, topping the market at 225 lbs. in 6 months. 300 head, both sexes, all ages, reasonable prices. Best Eastern blood lines. Satisfaction guaranteed. Ranch in Tulare county, but address owner, R. H. Whitten, 610-A Security Building, Los Angeles.

GRAND CHAMPION SUPERBA POLANDS—A few choice spring Superba boars ready for service. Sows bred to Superba for fall litters. Prices reasonably low. Rough's Greenfields, Arlington Station, Riverside, Cal.

FOR QUICK SALE—Registered Poland-Chinas. 15 boars four to six months old, \$20 each. 10 gilts same age, \$15 each. Registration free. Stock first class. C. L. Vanschoick & Sons, Chico, Cal.

REGISTERED POLAND-CHINA BOARS of serviceable age. A Wonder and Chief Picture breeding. Every animal guaranteed. Price \$25. Bar N. Ranch, E. A. Noyes & Son, Fresno, Sutter Cal.

POLAND-CHINAS—Bred gilts, \$15; young boars, \$10 and \$15; bred sows, \$25. Weanlings, either sex, \$6. Registered and crated, purchaser to return crates. E. A. Hall, Watsonville, Cal.

REGISTERED POLAND CHINAS—Young boars ready for service. Weanling pigs, both sexes. Prices attractive for quick sales. J. H. Cook, Paradise, Cal.

REGISTERED POLAND-CHINAS—Prolific, pabulous, profitable porkers. Choice boars now ready for service, \$25 each. Weanlings, \$15. Dr. J. A. Crawshaw, Hanford, Cal.

LAKEVIEW STOCK FARM POLAND CHINAS are money-makers. Satisfaction or money refunded. Geo. V. Beckman & Sons, Lodi, Cal.

POLAND CHINAS—Big type. Shoats, either sex, or in unrelated pairs. O. L. Linn, Linview, Route 4, Modesto, Cal.

POLAND-CHINAS—Big type combined with quality. Choice bred sows, gilts, boars. W. D. Trewhitt Box 82A Hanford Cal.

REGISTERED POLAND CHINA SWINE—Prize-winners. Finest stock in the State. \$20 up. M. Bassett Hanford Cal.

POLAND-CHINAS—Stock for sale at all times. We please you or refund your money. W. A. Young, Lodi, Cal.

BIG-TYPE POLAND CHINAS—Stock from the best herds of the Middle West. N. Hauck, Alton, Humboldt Co., Cal.

REGISTERED POLAND-CHINAS and Duroc Jerseys. Cholera immune for life. T. H. Beckman, Lodi, Cal.

POLAND-CHINAS—Large type. The Browning Stock Farm. W. H. Browning, Woodland, Cal.

DEACON RANCH POLAND CHINAS—Prize winners. Young stock reasonable. Box 27A, Davis, Cal.

KNOB HILL STOCK FARM—Registered Poland-China Swine. A. M. Henry, Farmington, Cal.

AMAWAGE FARMS—Poland-China hogs and Holstein cattle. G. H. Loughery, Visalia, Cal.

POLAND-CHINAS—Prize-winners. Money-makers. W. Bernstein, Hanford, Cal.

REAOAKS RANCH herd of registered Poland Chinas. W. J. Hanna, Gilroy.

REGISTERED POLAND-CHINA HOGS—J. A. Clark, R. 4, Lodi, Cal.

Berkshires.

GRAPEWILD FARM BERKSHIRES—World's Fair Grand Champion Grand Leader 2nd heads our herd, not only himself a champion, but the sire of Champions. At the 1916 California State Fair his daughters won first in all of the senior sow classes, including the Grand Champion Sow. At the 1916 Oregon State Fair a Grand Leader sow was Junior Champion. We are offering a number of choice boars of exceptional breeding and are also booking orders for Fall pigs. A. B. Humphrey, Escalon, San Joaquin Co., Cal.

WINONA BERKSHIRES—Bred sows sired by Rogueland's Longfellow. First aged boar 1916 Oregon State Fair, in pig to a winning son of Laurel Champion. Prices \$60.00. Winona Ranch, Route 1, A-Box 10, Grant's Park, Oregon. F. R. Steel.

50 BRED SOWS AND GILTS—50 of true Berkshire type and quality, bred to Grand Champion boars, are included in our private sale list now ready for mailing. Write for it today. Silver Birch Farms, Box R. P., Newport, Wash.

REGISTERED BERKSHIRES—Progeny of Improver B. Young stock now ready for sale. Start your herd with breed and strain of established reputation for California conditions. Geo. G. Meckfessel, Berlin, Cal.

BERKSHIRES—I have one of the best herds on the Pacific Coast, including Grand Champion Sow. Reserve Grand Champion Boar under one year. Third Aired Boar, etc. Frank A. Brush, Santa Rosa, Cal.

FOR SALE—Registered Berkshire Boar Suisun River Duke 2nd 203374. Farrowed May 18, 1914. Apply Geo. McNally, Middletown, Lake County, or 278 Russ Building, San Francisco.

SPECIAL—Six good service boars and a few sows in pig to Premier Leader due to farrow in October. Geo. M. York & Son, Berkshire breeders, Modesto, Cal.

REGISTERED BERKSHIRES of prize-winning blood. Write for description and photos. Imperial Stock Farm, Morgan Hill, Cal.

CHOICE REGISTERED BERKSHIRES—Extra fancy and growthy August boars and sows, \$25 each. Bred sows, service boars and gilts at reasonable prices. W. H. Waugh, Riverside, Cal.

IMMUNIZED NORMANDY BERKSHIRES.—Good type. Breeding stock, any age, for sale at all times. Cast iron guarantee. Arlington Smith, Visalia, Cal.

BERKSHIRES—Bred sows and weanling pigs. Write for prices and pedigrees before buying. Butte City Ranch, Box P, Butte City, Glenn Co., Cal.

ROSE CREST BERKSHIRES—Rivals Champion Best blood. Open and bred gilts. Service boars. F. L. Hall, Perris, Cal.

CARRUTHERS FARMS BERKSHIRES—Cholera immune. Second annual sale August 2, 1917. Mayfield, Cal.

30 REGISTERED BERKSHIRES—Boars and gilts for sale. J. H. Benedict, Lemoore, Kings county.

HOPLAND STOCK FARM—Registered Berkshires. Prices on application. Hopland, Cal.

REGISTERED BERKSHIRES—Young stock for sale. F. W. White, Elk Grove, Cal.

Duroc-Jerseys.

DUROC JERSEYS—My hogs won highest honors at State Fair, taking first prize herd, first prize sow, second prize boar. Were the largest of their age exhibited. Stock all ages for sale. Prices reasonable. Breeding and satisfaction guaranteed. Haden Smith, Route 1, Box 84D, Woodland.

DUROC JERSEYS FOR SALE—Third Prize Senior Yearling at 1916 State Fair. One choice 8-month-old boar. Weanling boar pigs. Enterprise Stock Farm. H. P. Eakle, Jr., Woodland, Cal., R. D. 3.

REGISTERED DUROC-JERSEYS—Service boars from prize-winning stock are money-makers. They grow faster. New England California Corporation, Ripon, Cal.

CROLEY'S BALANCED HOG FEED—the cheapest feed to fatten hogs. Write Geo. H. Croley Co., Inc., Live Stock Supplies, 631-637 Brannan St., San Francisco.

DUROC JERSEYS—Herd boars. E. N.'s Colonel and Tulare Boy. Sweepstakes winner at Fresno, 1915. Choice breeding stock. J. P. Walker, Visalia.

RANCHO RUBIUS DUROCS—All sold except a few July and September gilts. Extra good. Write for prices. Elmer Lamb, Ceres, Cal.

REGISTERED DUROCS of guaranteed breeding. All ages. Weaned pigs, \$10. H. E. Boudier & Son, Napa.

HEAVY BONED DUROCS—A few service boars for sale. Ormondale Co., Route 1, Redwood City, Cal.

REGISTERED DUROCS—Crimson Wonder stock. Young stock, both sexes. L. D. Collins, Denair, Cal.

REGISTERED DUROC-JERSEY SWINE—Both sexes. Big-boned type. B. F. Kendall Hardwick.

WINTON DUROC-JERSEY FARM, Winton, Cal.—High-class pure-bred hogs both sexes any age.

DUROCS—Defender Cantic B and Golden Model strain. The big type. Allen Thompson, Tulare.

RIVER BEND FARM—Registered Durocs are superior. Big Type. St. Helena, Cal.

DOS HERMANOS REGISTERED DUROCS—Duveneck & Pickersgill, Ukiah, Cal.

CURTIS DUROCS of either sex at all times. E. C. Curtis, Napa, Cal.

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FOR SALE—From 1 to 100 extra fine, straight, well-marked, light colored, highly bred, registered Holstein heifers from 6 to 18 months old. They are rich in the blood of King of the Pontiacs, Pontiac Korndyke, Hengerveld De Kol, Rag Apple Korndyke 8th, King Serie and other most celebrated sires of the breed. Prices very reasonable. Write Geo. A. Smith, Corcoran, California.

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REGISTERED HOLSTEINS—Herd sire King Korndyke Hengerveld Ormsby 7th, 86623. His full sister as Junior 3-year-old made 32.04 lbs. butter in 7 days. The record of his dam and his sire's dam averaged 30.98. George Kounias, Modesto, Cal.

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40 HEAD of high-class heifers—26 Holstein, 9 Jersey, 4 Durham, 1 Brindle, ranging in ages from six months to thirty. Out of high-class dairy stock and in fine condition. Almondale Farm, Modesto, Cal.

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BREEDERS OF REGISTERED HOLSTEIN cattle and Berkshire pigs. Whittier State School, Whittier, Cal.

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REGISTERED HOLSTEIN BULLS for sale. Sunnybrook Ranch, Willits, Cal.

REGISTERED HOLSTEIN BULLS for sale. C. L. Morse, Route B, Modesto, Cal.

REGISTERED HOLSTEIN BULLS from A. R. O. dams. B. F. Anderson, Modesto, Cal.

BREEDERS OF REGISTERED HOLSTEIN Cattle—McAlister & Sons, Chico, Cal.

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JERSEY BULLS—Sons of Gertie's Lad and Gertie's Son's Victor. A. A. Jenkins, Tulare, Cal.

REGISTERED JERSEYS—Young bulls and bull calves. T. B. Purvine, Petaluma, Cal.

JERSEY BULLS from Register of Merit cows. C. D. Haworth, Modesto, Cal.

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PACIFIC GUERNSEY HERD—Cattle selected from best imported and Advanced Register Stock. Now offering choice bulls. C. S. Rasmussen, Lodi, Cal.

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D. O. LIVELY, 215 Hobart Bldg., San Francisco, offers for sale a registered Hereford bull twenty-two months old and a registered Short-horn bull coming three years old. Correspondence solicited.

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KAUFKE BROS., WOODLAND, CAL.—Breeders and Importers of Hampshire and Dorset.

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REGISTERED SHIRES—Black Hawk Stock Farm, Importers and Breeders, Easton & Ward, Promoters, Burlingame, Cal.

REGISTERED IMPORTED PERCHERON Stallion for sale cheap. Hewitt & Hewitt, Dixon Cal.

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CALIFORNIA

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BY W. S. GUILFORD.

A Practical Treatise on Hog

Raising in California.

Price, \$2.00 Per Copy, Postpaid.

Pacific Rural Press, S. F., Cal.

The Tale of "Razor" and "Chunk."

(Continued from first page.)

Razor Is Weighed.—All of the other work had been preliminary so far as we were concerned, for this was to be the acid test of Razor's life. Soon we were to learn just how much edible pork there was in each 100 pounds of Razor when she was alive. Neither the farmer, local buyer, yard foreman or packing house superintendent could have told us absolutely, before this final weighing her actual worth in dollars and cents. Before this it had been a guessing contest all along the line.

As her carcass neared the weigher, he hurriedly noted her "lot number" and compared it with his record sheet on which he saw her live weight of 185 pounds as furnished by the yard foreman. The scales balanced at 120 pounds, showing that Razor had lost exactly 65 pounds of weight in her short visit to the packing house. Now a rapid calculation showed that this 65 pounds represented a 35 per cent loss of weight, so far as edible meat was concerned, a shrinkage far in excess of what it should be as was later shown by Chunk. And while the packer would not lose anything on Razor because of disease, he would and did lose on approximately 3 out of every 100 head of Razor's mates, and this has to be pro-rated back against her also, still lessening her value.

Chunk a Better Hog.—To be quite frank, Chunk had been selected with the hope that there would be a distinct improvement in his dressing percentage over Razor. His size and apparent quality had placed him in the "loin" or "packer" pens outside. Instead of being sold entire, to the retail butcher, it was intended that he should be cut up at the packing house; his hams, sides and backs being cured and sold as smoked meat at more than fresh meat prices.

U. S. Stops Him.—His treatment up to the time he visited the first U. S. Inspector was the same as had been accorded Razor, but a few slashes of the inspector's knife and a careful scrutiny of his glands, which did not have the right appearance, made him suspicious. As a consequence Chunk was tagged with a "retained" tag and instead of going slowly but surely toward the scale man he was side-tracked into the "retaining room" where over 200 of the 700 hogs slaughtered on that day were awaiting further inspection of intestines, liver and legs.

Here he stood a chance of being condemned outright if he were so badly diseased as to prohibit human

consumption; he could be stamped with a government stamp calling for "sterilization" (a process of cooking which kills all tubercular germs, after which the meat is allowed to be sold canned in various forms) or he could be passed as government inspected and free from disease if no signs of disease were found, other than in the glands.

More Pork in Chunk.—Fortunately, Chunk was passed out of the retaining room as healthy, on to the dressing floor, where, instead of three pounds of leaf lard, he yielded five and a half pounds, worth at present 16 cents a pound.

Again we made our way to the scales to watch Chunk's final weighing. Again the checking-up was done, but this time the scales balanced at 197 pounds, showing a loss of 53 pounds during Chunk's few minutes in the building. At a glance we perceived that the percentage of edible pork in Chunk was much more than had been found in Razor, and by simple arithmetic we found this amounted to 78.8 per cent. Analyzed this meant, then, that while but 65 pounds out of every 100 pounds live weight in Razor were suitable for human consumption, 78.8 pounds of Chunk from each 100 pounds was edible, a difference of 13.8 pounds on each hundred in favor of Chunk.

More Profit in Chunk.—The price paid for "shipper" hogs that day was 8½ cents per pound and for "loin" hogs 9½ cents, making the total cost of Razor, live weight, \$15.72 and of Chunk, \$23.75.

To determine which hog's carcass had cost the least per pound we divided the cost of each animal, live weight, by the number of pounds of dressed meat in each carcass and were surprised to find that each pound of dressed meat in Razor's carcass had cost \$.131, while the cost per pound of dressed meat in Chunk was but \$.12. But to further handicap Razor in the packer's eye we were told that there was approximately one cent a pound difference in the selling price of dressed meat of the two carcasses, this also being in Chunk's favor.

Here, then, was our conclusion: Razor, and her thousands of brothers and sisters which still consume much good feed on California farms, was unprofitable to the farmer, the local buyer had a hard time getting rid of her and the packer, with all of his modern methods, could not make her as profitable as her aristocratically bred mate.


How to Rid Sheep of Worms.

Digestive disturbances, poor appetite, loss of flesh and general weakness of sheep indicate the presence of worms. Lambs are most seriously affected, the experts say. Ridding the sheep of worms in the spring will result in fewer losses in the lamb crop.

Sheepmen having flocks infested with stomach worms and tapeworms may free the animals of such pests by a drench of copper sulphate which has been found most satisfactory in the flocks at the Ohio

State Experiment Station.

Two fluid ounces of a solution made by dissolving an ounce of copper sulphate (blue vitriol) in two quarts of water is sufficient for a yearling; and a two-year-old sheep needs three fluid ounces. A long-necked bottle or a rubber tube and funnel may be used to give the dose. Most effective results follow when the sheep are fasted for a day both before and after treatment. Water should not be given for a few hours preceding and following the dose.



Are Your Cows a BURDEN?

Many cows are a constant drag on their owners when they could just as well be good producers—if properly handled.

Don't forget that your cows can get physically "off color" just as you sometimes do. Watch the milk yield; if it is going down without apparent reason, something is wrong with the cow. Overfeeding is likely to make the condition worse; she needs a medicine that will clear up and strengthen her organs of production.

Kow-Kure is making thousands of new friends among the best dairymen every year, because it supplies this great need. It is a cow medicine, pure and simple—not a food. It has great curative and tonic powers that immediately act upon the digestive and genital organs and enable the cow to thrive on her natural food. Kow-Kure has back of it twenty years of success in making backward cows profitable and in the prevention and cure of Abortion, Barrenness, Retained Afterbirth, Milk Fever, Scouring, Lost Appetite, Bunches and other common ills.

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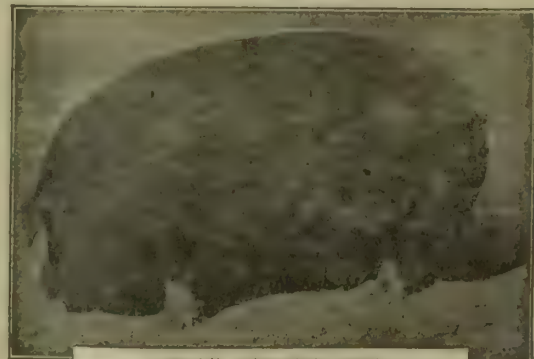
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P. P. I. E. 1915; Sacramento 1916.

For many years, at widely separated show rings, under many different judges of varying type ideals, my Poland Chinas have been consistent prize-winners. My herd is large, and I cull closely. The animals sent out as breeders are the very tops of a large number. I KNOW that my kind of Poland China is a profitable farmer's hog, for I send carloads of them to the packer every year—uniform in size, high in quality, quickly and economically matured and finished.

Young stock, \$30 Up.
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Aged Ram, First and Second. Yearling Ram, First Ram Lamb, First, Second, and Third. Champion Ram Yearling Ewe, Second. Ewe Lamb, Second and Third. Get of Sire, First. Pen of three Lambs, bred by Exhibitor, First and Fourth. Pen of four Rams, bred by Exhibitor, First and Fourth. Flock, any age, Second. Flock, any age, bred by Exhibitor, Second. Flock, one year old, First. Flock, one year old, bred by Exhibitor, First. Flock under one year, bred by Exhibitor, First. Produce of Ewe, First. Second and Third. Premier Championship for Breeder. Premier Championship for Exhibitor. A total, including American Shropshire Specials, of 15 Firsts, 9 Seconds, and 6 Championships.

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Raising Poultry for Profit

LOS ANGELES ADOPTS NEW EGG CLASSIFICATION.

With the beginning of the new year the Los Angeles Produce Exchange adopted the following new classification of eggs that is now in force on this market:

1. **California Fresh Extras.**—Color shall be entirely white and reasonably clean; the size reasonably uniform; from February 1st to July 1st they shall weigh 22 ounces and over, and average 24 ounces per dozen; from July 1st to January 31st they shall weigh 22 ounces and over, and shall average 23½ ounces per dozen; quality shall be ninety per cent fresh, sound, sweet and full; the balance, other than loss, may be defective in strength and fullness but must be sweet; maximum total loss permitted, per case, one-half dozen.

2. **California Fresh Selected Pullets.**—Color shall be entirely white and reasonably clean; size reasonably uniform; throughout the year they shall weigh not less than 18 ounces and shall average 20 ounces per dozen; quality ninety per cent fresh, sound, sweet and full; the balance, other than loss, may be defective in strength and fullness but must be sweet; maximum total loss permitted, per case, one-half dozen.

3. **Ranch, Case Count.**—Shall be fresh gathered, reasonably clean, of good average size, and may be of mixed color; must be eighty per cent fresh, not over four per cent rots, and the balance may be defective in strength and fullness, but must be sweet, and must weigh a minimum of forty-three pounds net to the case.

All case count eggs must be delivered in original condition as received from consignors, and cases must contain thirty dozen or more eggs.

POINTERS ON SHIPPING BABY CHICKS.

[By Geo. H. Croley.]

The International Baby Chick Association held its annual meeting in connection with the Palace Poultry Show in New York City Dec. 8. Among important matters considered it was urged that uniform instructions to express agents be adopted for use on all shipping labels employed by shippers of baby chickens. The following was recommended:

**LIVE BABY CHICKS.
HANDLE CAREFULLY.
DON'T THROW.
KEEP FROM HEAT OR COLD.**

**SAFETY FIRST.
RUSH DELIVERY.
KEEP LEVEL.**

DO NOT FEED OR WATER.

The above to be printed in red ink, in large, easily read type and used with the emblem on every package of baby chicks. On December 9 the Board of Directors met with the representatives of the leading express companies with a view to securing better handling of chick shipments. Attention was called to the fact that chick boxes are often roughly handled, thrown from one agent to another, dumped roughly

on one end instead of keeping level, so that chicks are crushed in one end of box. Chicks should not be left long exposed on windy platforms in cold weather, nor should they be placed close to hot steam pipes or stoves. The fact that a chick starts out on its journey with a full belly containing the egg yolk remnant and that it does not require and should not have food for 72 hours after hatching, was also explained. The desirability of routing shipments around, instead of through, greatly congested transfer points was also discussed and some cases were mentioned where losses of chicks had occurred through failure to deliver promptly. Some cases were cited where chicks had been buried under other express matter and left for several days, and others where a two-hour journey had been extended to three full days through carelessness and failure to rush delivery. The express company representatives were made aware of the association's work to secure better shipping packages, uniform instructions to express agents on labels, regulation of ventilation, use of emblem, etc. The expressmen thought the recommendations for label good and themselves recommended the words, "Don't Throw," which have been added to the wording first proposed. Hearty co-operation was promised by the express companies.

HIGH RECORD HENS PROBABLY ACCIDENTS.

To the Editor: Some time last year I saw an interesting report on an egg-laying contest carried on by students of high schools in California. The article stated that the highest score was made by a pen of cross breed hens of Rhode Island and Brown Leghorns. Can you kindly tell me how this cross is made to get the best egg-producing results: i. e., from which breed is the cockerel selected?—E. W. H., Tempe, Arizona.

[Answered by Geo. H. Croley.]

Our correspondent evidently intends to state that these fowls were awarded the highest prize as Utility fowls or that their records for egg production was the best. The extraordinary results from the cross breeding referred to was probably an accident. Most likely it just happened that the male bird was from a mother of remarkable laying capacity, while the hens were unusually vigorous and capable of digesting large quantities of feed with

which to produce the eggs. Because they were a cross of Rhode Island Reds and Brown Leghorns is no guarantee that the same results will be gained by a similar cross unless the breeder properly selects his fowls. In nearly all cases better results are gained by breeding pure-bred fowls. In making a cross of breeds of considerable difference in size it is usually considered better to use a male of the smaller breed.

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10 inches graduated in mesh from ¼ inch to 1½ inches then 20 inches of 2¼ inch mesh, topped by 4½ inch mesh for the height of the fence.

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It is the only fence made with a bottom mesh smaller than one inch. It will turn the smallest chickens. Because of the straight line, continuous weave of "CALMADE GRADUATED" Fence, baby chicks won't hang in it, large fowls can't climb it. "CALMADE GRADUATED" Fence will not slip at the joints nor unravel when cut. Uniform in weave and width. It unrolls flat as a board—it is easily put up and stretches without bulge, kink or bend on posts 16 feet apart. Learn all about these advantages and let your next fence be a "CALMADE GRADUATED." Write at once for free samples of wire used, free illustrated folder and name of nearest dealer.

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Wishing to help poultrymen to get high-grade stock for building up their flocks, we have made arrangements so as to offer a small number of chicks from F. M. MOLBY'S famous 194-egg hens. So long as they last we make this offer: With every order of 500 chicks, we will send free 25 Molby chicks, and with every order for 1000 chicks we will send free 50 of the Molby chicks. Only White Leghorns Hatched.

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Poultry Adviser

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Any poultry raiser can easily double his profits by doubling the egg production of his hens. A scientific tonic has been discovered that revitalizes the flock and makes hens work all the time. The tonic is called "More Eggs." Give your hens a few cents' worth of "More Eggs" and you will be amazed and delighted with results. A dollar's worth of "More Eggs" will double this year's production of eggs, so if you wish to try this great profit-maker, write E. J. Reefer, poultry expert, 4801 Reefer Bldg., Kansas City, Mo., who will send you a season's supply of "More Eggs" Tonic for \$1.00 (prepaid). So confident is Mr. Reefer of the results, that a million-dollar bank guarantees if you are not absolutely satisfied your dollar will be returned on request and the "More Eggs" cost you nothing. Send a dollar today or ask Mr. Reefer for his Free poultry book, that tells the experience of a man who has made a fortune out of poultry.—Advertisement.

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Common Sense Chicken Talks
Pointers to Amateurs
How to Read Poultry Diseases

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A Practical Treatise on Poultry Raising in California

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ENTRA QUALITY White Leghorn chicks, 12c until March 1st, then 10c. Carefully line bred from MacFarlane, Young, Martin, and Cyphers strains of foundation stock. Eggs, \$1.50 per 15, \$2.50 per 30, \$5.00 per 100, \$50.00 per 1000. Acres of free range connected with our breeding pens, 20,000 feet under roof. Only Jubilee incubators used; disinfected every hatch. Don't save 2c per chick in buying, and lose a dollar per pullet in raising; get the Best and Succeed. Newton Poultry Farm, Dept. 1, Los Gatos, Cal. Catalogue free.

THE J. K. BIGELOW POULTRY RANCH and Hatchery—300 acres devoted to superb vigorous Hogenized White Leghorns. Bigelow chicks are incomparably superior to the product of ordinary commercial hatcheries. Prices same as former seasons—10 cents each till April 1, 9 cents during April and May, and 8 cents thereafter. 10% deposit required with order. The Bigelow Poultry Ranch, Sonoma, Cal.

WHITE PLYMOUTH ROCKS—Baby Chicks, hatching eggs, from heavy-laying strain of Hogenized layers. The following winnings at the California State Poultry Show, Dec. 6-9, 1916, show the quality of my flock: 1st for best egg-type pen; 1st for best exhibition pen; special for best egg-type individual; 2nd and 3rd exhibition pullets and 3rd exhibition cockerel. Mrs. J. B. Tupper, Route A, Ceres, Cal.

BARRED PLYMOUTH ROCKS—COCKERELS—Cockerels—Yes, we have them; also Hens and Pullets—all bred from our Champion Winners at California's leading shows. Also hatching eggs. If it's Barred Rocks you want, get in touch with me right away. Have bred them exclusively for nineteen years. Send for Catalog. Chas. H. Voden, Box 396, Los Gatos, Calif.

"FINEST HATCHERY IN THE WORLD"—Baby Chicks, White Leghorns, and Rhode Island Reds, settings, 100's, 1000's, hatched right in our \$60,000.00 brick and concrete hatchery from our quality heavy layers. Reasonable prices. Stock, Hatching Eggs, Pebleside Poultry Farm and Hatchery, Sunnyvale, California.

WHITE PLYMOUTH ROCK, White Leghorn Incubator Chicks. Breeding stock. Eggs high class. Scientifically bred. Awarded all first prizes. California State Fair 1916. Make your arrangements for 1917 delivery of chicks. Mahaja Farm, P. O. Box 597, Sacramento, Cal.

WANTED—A number of hot water incubators, Jubilee preferred. 200 egg capacity or over. 220-egg type, Hogenized, S. C. White Orpingtons and Sicilian Buttercups, cockerels, hatching eggs and chicks. All information gladly furnished. M. S. Woodhams, San Mateo, Cal.

BABY CHICKS—From large, healthy, vigorous, heavy laying thoroughbred Single-Comb White Leghorns. \$10 per 100; \$2 per 100 when order is booked, and balance 5 days before delivery. I pay the express to your nearest express office. H. A. Schlotthauer, Exeter, Cal.

BABY CHICKS—Get some of our good strong youngsters but order as far ahead as possible. Hatches every week. R. I. Red, Barred Rocks, Black Minorcas, White and Brown Leghorns. Write for circular. Campbell Poultry Ranch, Campbell, Cal.

WHITE LEGHORN AND BROWN LEGHORN day-old chicks from healthy, vigorous breeders. "Chicks well hatched are half-raised." Will be pleased to send you our circular. San Jose Hatchery, 373 Meridian Road, San Jose, Cal.

THOROUGHBRED S. C. W. Leghorns—Cockerels, \$2.50 each, from strong, vigorous hens, typed to lay 200 to 260 eggs per year each. Also booking orders for baby chicks. Jay Maxwell, Madera, Cal.

HATCHING EGGS from our "Bred-to-Lay" S. C. White Leghorns. Season opens Dec. 1st. The early hatch lays the early winter egg. Booking now. R. H. Dickinson, Dept. IV, Los Gatos, Cal.

THE SANTA CLARA VALLEY HATCHERY solicits your orders for Fall and Spring delivery in 8 breeds of baby chicks. Order early and get the best. Jos. A. Bihn, Lincoln Ave., San Jose, Cal.

HICKS JUBILEE HATCHERY, Petaluma, Cal.—White Leghorn and Black Minorca chicks and hatching eggs. Circular "How to Raise and Breed Chicks" Free.

BABY CHICKS—From select free-range White Leghorn stock. Place orders early. Prices on application. Western Hatchery, Petaluma, Cal. W. S. Waldorf, Prop.

S. C. RHODE ISLAND REDS—Pullets and Cockerels. One Black Orpington Cock. Eggs from R. I. Reds and Silver Campines. Mrs. R. S. Sandelwood, Woodland, Cal.

INCUBATORS—For Essex Model Incubators at factory prices, write Geo. H. Croley Co., Inc., Poultry Supplies, 631-637 Brannan St., San Francisco.

BABY CHICKS (White Leghorn)—shipped on approval before committing. No weak ones charged for. Schellville Hatchery, R. F. D., Sonoma, Cal.

WHITE LEGHORN BABY CHICKS from selected heavy-laying stock. Only strong, healthy chicks sent. Mrs. G. Logan, Morgan Hill, Cal.

DAY-OLD CHICKS—These chicks are hatched from our own flock of 8,000 Utility White Leghorn Hens. George Bros., Petaluma, Cal.

BARRED ROCKS—Grand lot of high-class breeding males and pullets for sale. Satisfaction guaranteed. G. E. Tobin, St. Helena, Cal.

WHITE WYANDOTTES—Blue-ribbon winners. Eggs \$2 to \$5. Chicks, pullets, cockerels. R. W. Stavetski, Route 2, San Jose, Cal.

HATCHED CHICKS from Barred Rocks. R. I. Reds, White Leghorns. Good stock. Send for circular. G. L. Hawley, Madera, Cal.

PUP SUCKS EGGS.

To the Editor: Do you know of anything to break a young pup from sucking eggs?—M. B., Warm Springs.

We remember with a rather cruel pleasure how as a boy we broke a hen from eating eggs. We purchased a hole in the end of one big enough so some of the contents would spill and attract our egg-eater. Plenty of red cayenne pepper was allowed to permeate the egg, then it was put where she would get it. With great satisfaction the boy soon saw the hen running madly about the yard with her mouth wide open, cooling it off. She became a model of good behavior forever after.

COMMON HENS LAY.

To the Editor: I just now read what H. G. W. has to say about his pullets not laying, and would like to add my experience: I have eleven pullets, three hatched in January, the other eight hatched in March. They are a mixture of almost everything, perhaps a little more Wyandotte than anything else. Since the first of October I have been getting six to nine eggs every day. I feed bran mash, wet with milk in the morning, table scraps at noon, and whole corn at night; they have free range. I have been raising chickens twenty-five years, have had in all fourteen different breeds of pure-bred fowls. Have never had any do better than these barnyard fowls. Ukiah. Mrs. Fred Smith.

THE VALUE OF DRIED FISH.

To the Editor: What is the value of dried fish for chicken feed, and is there a ready sale for same?—Reader, Madison, Cal.

[Answered by Geo. H. Croley.]

The feeding value of dried fish when used as poultry feed depends on how it is handled in the process of drying. If not properly prepared it is dangerous to feed it. Fresh fish that has been correctly handled and has had most of the oil and water removed is worth approximately the same as good dried meat scrap. Fish meal is used by many poultry keepers and, if good, meets with ready sale.

EASTMAN'S BRED TO LAY Barred Plymouth Rocks, Chicks, Cockerels. Fairmead Poultry Farm, Fairmead, Cal.

LARGEST EGG—WHITEST FLESH—Black Minorcas, \$1.50 per setting 15 eggs. Edward A. Hall, R. F. D. 1, Watsonville, Cal.

WHITE ORPINGTONS EXCLUSIVELY—Limited number of pullets. Reasonable prices. L. J. Burke, Lemoore, Cal.

CHICKENS, DUCKS, GESE, GUINEAS, Pea Fowl, Pigeons. Wm. A. French, 545 W. Park St., Stockton, Cal.

LASHER'S HATCHERY, PETALUMA.—Write for booklet, "The Day-Old Chick Business" and price list.

A FEW SELECTED Andalusian Cockerels at \$2.50 each. Fred W. Wright, Mokelumne Hill, Cal.

PIGEONS—Choice Carneaux, \$1.50 pair. J. W. Noble, Box 513, Livermore.

TURKEYS, DUCKS, AND GESE.

BOURBON RED TURKEYS and Eggs for hatching. My birds won all the honors in the Alameda County Poultry Exhibition in Oakland, 1914, and just as fine this year. A. E. Balmer, Alhambra Valley, Martinez, Cal.

THOROUGHBRED WHITE HOLLAND TURKEYS. Toms \$5; Hens \$2.50. Old White Holland Toms, \$7.50. Pearl Guinea, \$1 each. E. A. McKinley, R. D., Ukiah, Cal.

Bronze Turkeys—Young stock of both sexes. Large and vigorous. Eggs in season. Order early. Free circular on turkeys, feed, etc. Albert M. Hart, Clements, Cal.

WHITE HOLLANDS EXCLUSIVELY—Only high-class birds from prize-winning stock for sale. Rockwood Farm, 201, Route 6, Santa Rosa, Cal.

MAMMOTH BRONZE TURKEYS and Eggs. Booking egg orders now for early Spring delivery. M. M. Delman, Planada, Cal.

HOPLAND STOCK FARM, POULTRY DEPT.

White Leghorn and White Plymouth Rock Cockerels, White Leghorns and White Rock Baby Chicks hatched from specially selected heavy-laying stock. Prices same as last season. White Leghorns, January and February delivery, \$12.50 per hundred; March, \$10.50; after April, \$10.00. White Plymouth Rocks, \$15.00 per hundred. All F. O. B. Hopland.

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Classified Advertisements

MISCELLANEOUS.

FREE FOR SIX MONTHS—My special offer to introduce my magazine, "Investing for Profit." It is worth \$10 a copy to any one who has not acquired sufficient money to provide necessities and comforts for self and loved ones. It shows how to become richer quickly and honestly. "Investing for Profit" is the only progressive financial journal and has the largest circulation in America. It shows how \$100 grows to \$2,200; write now and I'll send it six months free. H. L. Barber, 300 28W Jackson Boulevard, Chicago.

GROCERIES WHOLESALE—Our prices are the lowest and our quality the highest. Dollars saved on every order. Freight paid within 100 miles. Send for catalog. Freese and Company, Mail Order Grocers, 1264 Divisadero street, San Francisco.

EVERY SIZE WROUGHT IRON WATER Pipe and screw casing water pipe, guaranteed as good as new. Prices right. Send for catalogue. We beat no one; everybody gets a Square Deal. Weissbaum Pipe Works 180 Eleventh St., San Francisco.

SECOND HAND WATER PIPE and Screw Casings. New threads and couplings dipped in hot asphaltum. All guaranteed. Send us your inquiry. Sheeter Pipe Works, 306-H Howard St., San Francisco.

AT LAST THE PERFECT SILO—THE Star Round: No hoops. No bolts. No experiments. Any one can erect. Close price. Address D. O. Lively, 215 Hobart Bldg., San Francisco.

NEW TWO-PLANT TRACTOR—Complete except engine. Can adjust any stationary or automobile engine. \$70.00 account storage. Grainger, 1050 Battery St., San Francisco.

"HOW TO LIVE ON LESS"—a guide to cheaper living. Wholesale catalogue free. Pacific Co-operative, A236 Commercial St., S. F.

PATENTS THAT PROTECT are procured through Pacific Coast Patent Agency. Savings and Loan Building, Stockton, California. Established fifty years.

ASK FOR SNOW'S GRAFTING WAX—In use all over the State. If your grocer does not keep it, send to D. A. Snow. R. D., Box 548, San Jose, Cal.

FOR SALE—One Yuba Ball-Tread Tractor, size No. 18, in good condition. For further information inquire of R. C. Minton, Las Cruces, New Mexico.

TO REDUCE THE HIGH COST OF LIVING, send for our Wholesaler to Consumer Catalog. Smith's Cash Store, 106 Clay St. San Francisco.

SEEDS, PLANTS AND TREES.

FREE 1917 PLANTING GUIDE and Pure Seed Book! 96 pages handsomely illustrated in many colors. Describes latest, best varieties vegetables, flowers, field crops, fruits, shrubbery, etc. A dictionary on gardening! Flower lover's delight! Field crop guide! An orchardist's manual! Berry-grower's book! A postal gets it. Don't buy seeds until you read it. Galloxy Bros. & Co., Pure Seed Specialists, Waterloo, Iowa.

FAMILY ORCHARD—6 apple, \$1.80; 6 Peach, \$1.80; 6 Cherry, \$2.50; 6 Plums, \$3.00; 6 Grapes, \$1.00; 12 assorted berries—Jugan, Black, Currant and gooseberry, \$2.00. 1 Walnut, \$1.00. Free packing. Total amounts to \$13.10. Half-price this week only—\$6.55, or half the lot for \$4.00. Above are all assorted best, and will make a fine family orchard. Cash Nurseries, Sebastopol, Cal.

ORDER NOW—Genuine Giant Crimson Winter Rhubarb. The choicest and earliest of all varieties, producing bountiful crops, when other varieties are out of market. Can grow between orchard rows with big returns. 30c each; \$1.50 per ten; \$10 per hundred. Mail orders booked now and shipped when desired. A. P. Baker, 1116 The Alameda, Berkeley, Cal.

CALIFORNIA GREATEST PRUNE—Stuart Prune; 27 dried prunes to the pound, bears heavy strong growing, very sweet like the French prune, only larger. 2000 trees in stock for this year. Also 60,000 almond trees; all kinds of varieties. Write for prices. Ripon Nursery Co., Ripon, Cal.

SEED POTATOES—We have on hand the following varieties: New Snow, British Queen, American Wonder, Green Mountain, Billion Dollar, Gold Coin, Late Rose, Humphreys Best. Write for prices to M. J. Mullaly, winner of Grand Prize for Potatoes, P. P. I. E. R. F. D. 4, Sebastopol, Cal.

CITRUS TREES—all leading varieties. Large line Lisbon, and Villa Franca Lemon, and Washington Navel Orange Trees. First-class stock and clean. Special prices to dealers or to growers in carload lots. Randall Brothers' Nurseries, Whittier, Cal.

STRICTLY FANCY SEEDS—Alfalfa, Sealed Sweet Clover, Red Clover, Timothy, Rye Grass, etc. Free Bulletin "Sweet Clover in the Northwest." Write for samples and prices. Ralph Waldo Elden, Central Point, Oregon.

GIANT WINTER RHUBARB PLANTS—Big profits. From 1/2 acre first season after planting I sold 675 boxes rhubarb, receiving \$673.70. Grand Prize San Diego Exposition. Big discount on plants for prompt orders. Booklet Free. W. A. Lee, Covina, Cal.

APRICOTS, PEACHES, Pears, Plums, Apples, etc. 5c up. Olives: Mission, Ascolano, Manzanillo. From select-bearing trees, 20c up. Guaranteed to grow and true. Send for quotations on all your wants. Julius Mayr, Hemet, Cal.

OLIVES ARE OUR SPECIALTY—We offer for sale fine thrifty trees of the best strains of Mission and Manzanillo. Earliest to ripen; earliest to bear. If that is what you want, we have it. H. Detmold & Son, Exeter, Cal.

WALNUT GRAFTING WOOD—Genuine Franquette. Same strain as Vrooman orchard was planted from. Willson's Wonder, grown by originator, F. C. Willson, Encinal Nurseries, Sunnyvale, Santa Clara Co., Cal.

SPECIALLY SELECTED ARIZONA ALFALFA Seed—the best there is—at wholesale prices. Shipping warehouses at Modesto, Fresno, and in Arizona. You save at least \$2.00 per hundred by buying direct. Send your address for sample and price. Bomberger Seed Co., Modesto, Cal.

SWEET CLOVER—The best legume known for introducing nitrates into soil. A large producing, non-bloating forage and hay crop. Stands alkaline conditions well. Seed 15c per lb. V. M. Shuey, Manzanar, Cal.

WALNUT TREES—Franquette, Mayette and Mammoth on Black Root; also Grafting Wood and Black Seedling Trees. Lowest prices. Mammoth Walnut Nurseries, Watsonville, Cal.

GOOD ALFALFA SEED for sale at from 12 to 15 cents per pound. Freight prepaid anywhere in California. Samples furnished upon request. O. L. Divens, Dos Palos, Cal.

BERRY PLANTS—Phenomenal berry, Cuthbert raspberry, Himalaya Giant and Lawton blackberry. Now ready. M. J. Monis, Sebastopol, Cal.

MISSION OLIVE TREES—Raised from my own bearing trees. This is the only sure way to get what one wants. W. A. Hayne, Box 461, Marysville.

FRANQUETTE WALNUT TREES—Grafted on Black Roots. Vigorous stock at lowest prices. Ogden Bolton, Jr., Route 6, Santa Rosa, Cal.

FOR SALE—Ettersburg Strawberry plants, \$2.25 per 1000. Guaranteed to reach you in good shape. Parker Bros., Hemet, Cal.

FOR SALE—Gold Dollar and New Oregon Strawberry plants, \$3 per M. D. B. Bannister, P. O. Box 185, Oakdale, Cal.

QUALITY TREES—Seedlings, 5c. Prunes, 10c. Walnuts, 30c. Cash Nurseries & Seed Store, Sebastopol, Cal.

SUDAN GRASS—Pure reseeded seed, any quantity, prices right. B. E. Miller, Carlton, Tex.

WANTED.

WANTED—Young men and women to attend the Western Normal Course—Normal and Academic. The Normal Course gives an adequate preparation for teaching, at a great saving in time and money. Academic course gives practical finish to education. Write for Bulletin "A." Western Normal, 524 E. Market St., Stockton, Cal.

COUNTRY LANDS.

FOR SALE—948-acre stock ranch in Napa county. Price, \$17,000 net. All modern improvements. Living creek. 125 acres hay, grain and alfalfa land. Free range adjoining. 175 head of cattle can be purchased if desired. Liberal terms. Owner, Box 363, Napa, Cal.

WE ARE AGENTS for the best land in South San Joaquin Irrigation District on the east of terms. Address Ripon Nursery Co., Ripon, Cal.

HUMBOLDT STOCK RANCHES—CATTLE correspondence solicited. C. E. Robertson, 105 Montgomery St., San Francisco.

FREE NEW BLUE BOOKLET—State, Government and Indian Lands. Bargains overlooked. Joseph Clark, Sacramento.

WANTED TO HEAR from owner of good ranch for sale. Send cash price and description. D. E. Bush, Minneapolis, Minn.

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32x3 1/2	10.95	2.35	2.55
34x3 1/2	12.05	2.49	2.65
34x3 3/4	13.25	2.59	2.90
36x4	14.50	2.95	3.25
31x4	15.25	3.00	3.35
32x4	15.45	3.10	3.45
33x4	16.15	3.25	3.55
34x4	16.45	3.30	3.70
35x4	17.20	3.35	3.80
36x4	17.45	3.45	3.90
34x4 1/2	22.25	4.05	4.50
35x4 1/2	22.95	4.15	4.55
36x4 1/2	23.35	4.30	4.75
37x4 1/2	24.10	4.35	4.85
35x5	26.00	4.95	5.45
36x5	26.35	5.15	5.60
37x5	27.40	5.20	5.70

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Mrs. Best's Letter.

My Dear Friends: As soon as we enter the New Year, the smart shops begin to show new spring garments. Not for wear here, but for island wear or other warm resorts.

Sport garments reign supreme and are shown in a great variety of materials—light weight Bolivia cloth, fancy velours, silk and wool jersey, tussah silk and smart checks.

As is usual in the early spring, bright and striking colors seem to predominate, although in crepe de chine dresses (which are very smart indeed) white and flesh color are very popular. These dresses are very simple in design, the skirts being full and falling in straight lines, while the waist is a simple blouse effect with a soft wide girdle.

Perhaps the newest note in the spring dresses is the mandarin sleeve, which is very effective in soft materials.

The hats for wear with these garments are many of them combinations of satin and straw, or silk and braid in high colors and the new ribbon hats in white or soft shades. These hats are rather high-crowned and narrow-brimmed with the exception of the large straw sailor, which comes to the front each spring as regularly as the season arrives.

Many designs in separate sport-skirts are shown and for wear with them, the Georgette and crepe de chine blouses are leading in popularity. One cannot help but hope that they will stay with us forever, for they are so much more satisfactory than the lingerie blouse. They are some of them quite tailored except for a little bit of hemstitching and others are embroidered in silk or bead-trimmed.

Shoes continue high in cut as well as price and are in many color combinations. But it is a little early to know what will be the best conservative styles for our own spring wear. Sometimes the very early styles in hats and other spring apparel are extreme and do not last on into the summer.

Most of us are really more interested in the wonderful clearance sales of seasonable goods and household furnishings than anything else. The opportunity to buy under the market price of linens, underwear, bedding, etc., appeals to all thrifty housekeepers. These sales continue this entire month. *Rosabella Best.*

SIMPLE RULES FOR GOOD COCOA.

Cocoa or chocolate, ground or shaved from the cake, unsweetened, sweet or milk, all make a good drink. Add sugar and mix to a paste with warm water. About one tablespoon will make a medium strong drink. Add water to make one-half cup for each cup desired and boil for a couple of minutes. Then add hot milk and serve with whipped cream if possible. A marshmallow is a delicious addition, or a dash of vanilla or ground cinnamon. If egg is used, beat thoroughly and blend carefully just before serving. For delicious iced cocoa make the syrup stronger and add a pinch of salt. When ready to use, pour over cracked ice (if possible) and fill up the glass with all milk or part milk and water and top with whipped cream.

THE HOME CIRCLE

LAUNDRY HINTS.

When washing flannels try to get rid of as much dust and dirt as you possibly can by shaking and brushing well before plunging into water.

High temperature has a tendency to shrink wool fiber, therefore the water in which woolen articles are both washed and rinsed should be warm enough only for the hand to be borne comfortably in.

Spots on towels will disappear if a little ammonia is put into the water to soak the articles. Put a teaspoonful into the water in which dish towels are put to soak—then wash well in a good suds. Rinse thoroughly and the towels will never look dingy.

A good starch polish is made by taking one ounce of white wax and one ounce of spermaceti, melting and running it into a thin cake on a plate. A small piece of this added to a quart of prepared starch, gives a fine luster to the clothes and prevents the irons from sticking.

HINTS TO HOUSEKEEPERS.

A dish of water placed in a hot oven where pies, cakes or puddings are being baked will prevent scorching.

A nail or tooth brush should never be left in water or the bristles will soften. Hang on hooks or place in racks.

Mend gloves with cotton thread instead of silk as the silk is apt to cut the kid. If mended from the wrong side, they will present a neater appearance.

Bread jars should be scalded out twice a week to keep away the mold.

Gelatine puddings should be carefully covered while cooling as gelatine has a particular affinity for germs.

An omelet pan should be rubbed clean with paper and a dry cloth instead of washing. If the pan is treated this way, the omelets are not so likely to stick.

SEWING MACHINE HINTS.

The breaking of needles and cotton are of common occurrence, but in most cases they can be avoided by adjustment of the needle. Coarse cotton must not be used with a fine needle or the needle is forced out of the run, in the way of the shuttle. If the feed is not doing its work, do not attempt to aid by pulling the material through or the needle will be pulled out of position and broken. The feed probably is too low and needs raising.

Before beginning to stitch, be sure the needle passes through the needle plate freely, not striking the side of the opening.

If the machine runs hard and noisy, if ordinary oiling does not relieve it, use gasoline freely around the working parts and then after dry-

ing, follow with a free use of a good machine oil. This should be done when the machine is not to be used on delicate materials for the oil is in evidence for some time, even after careful wiping.

FLOORS AND THEIR COVERINGS.

The sooner all nailed down floor coverings are replaced by rugs the better, for carpets which cover a whole floor are very hard to clean. Rugs collect just as much dust and dirt, but they can be taken out and swept and the floors kept in a more sanitary condition.

A soft wood floor can be made to look reasonably well by using a crack filler and painting it well. Then varnish it and it can be kept in good condition by using an oiled mop if the places where the most travel comes are protected by rugs. A varnished floor may be made more durable by waxing. The wax protects the floor from marring from heavy shoes. The method of applying is the same as on a hardwood floor.

TO CLEAN IRON WARE.

If not rusty, washing with a weak soda water and hot soapsuds will be sufficient. For rusty sinks or kettles, rub the inside with mutton fat, free from salt, and sprinkle with powdered quicklime. Let remain over night and wash with brush and hot soapsuds. Rinse thoroughly and dry. Rust may also be removed with powdered emery and benzine. This must be applied to a cold surface.

BUREAU SET.

Filet crochet makes very attractive bureau sets. A linen center or runner may be used with crochet edging all the way around, or perhaps just a wide band at either end, with the linen hemstitched all around the four sides. In either case, the pattern of the lace should be copied for the pin cushion top, cases for talcum powder and cologne bottles.

EGG AND CABBAGE SALAD.

Cut the whites of three hard-boiled eggs in small pieces, crumple the yolks with a fork or by pressing through a sieve. Have ready 1½ cups cabbage finely chopped, sprinkle with salt, pepper and 1 teaspoon celery seed or salt. Mix the cabbage lightly with the eggs, add the dressing, tossing until well mixed. Arrange on beds of lettuce or serve in small cup-shaped cabbage leaves.

Northern Visitor (in Georgia): "I see you raise hogs almost exclusively about here. Do you find they pay better than corn and potatoes?" Native (slowly): "Wal, no; but yer see, stranger, hogs don't need hoeing!"

ORIENTAL PUNCH.

Make a syrup by boiling 1 cup each sugar and water for six minutes. Add 6 cloves, 1 stick cinnamon, ½ teaspoon chopped Canton ginger. Cover and let stand until cold. Add the juice of 3 oranges and 2 lemons. Strain and add a little green coloring and 1 drop oil of peppermint. Let stand 1 hour. Pour into punch bowl and garnish with mint leaves when filled with water to taste.

Floral Department.

By Geo. N. Tyler.

Classification of Plants.—The first class is the annuals—those which grow up from seed, flower, ripen seed and die in the course of one season. They are divided into three classes—the hardy, which are sown at once in the ground they are to occupy (such as sweet alyssum); the half hardy, which succeed best when aided at first by a mild hot bed or green house and then transplanted into the open air (such as asters); and the tender, which are kept in pots and treated as greenhouse or stove plants, to which department they properly belong. Hardy biennials live as undeveloped plants through our winter period. They require to be sown in the summer and fall months in order to get well established before winter, and bloom and die the following year.

Hardy Perennials.—This term includes not only those fibrous-rooted plants of herbaceous habit, which spring up from the root year after year, but also the hardy bulbs.

Greenhouse Plants.—These are plants requiring the shelter of a glass house provided with a moderate degree of heat, of which 35 degrees may be taken as the minimum. The house should be opened for ventilation in all mild weather in winter and daily throughout the rest of the year. (Among this class are the begonias.)

Stove Plants.—Two houses are required wherein different temperatures can be maintained. The temperature during winter should range at night from 55 in the cooler, to 65 in the warmer, and from 65 to 75 degrees by day, allowing a further rise of a few degrees by sun heat. In summer the temperature may range ten degrees higher by artificial heat, night and day, and will often by sun heat run up to 90 or even 95 degrees, beyond which it should be kept down by ventilation. During the growing period the atmosphere must be kept moist by dampening the walls and pathways and by spraying the plants according to their need. When growth is completed less moisture will be necessary, and in ventilating cold draughts must be avoided. Among this class of plants are orchids, caladiums, coleus, adiantums (maiden hair ferns) and this is the reason so few can grow the maiden-hair fern as a house plant.

Now I have given you the soils and classes of plants, and in the future when I describe a plant, you can easily mix the right soil. I will also classify the plant so you will know what treatment to give it.

FLORAL EMBLEMS.

Most countries have a flower for a national emblem—the United States having the golden rod; England, the rose; Ireland, shamrock; France, fleur-de-lis; Japan, chrysanthemum; Canada, maple leaf; Holland, tulip; Scotland, thistle; Germany, corn-flower and Switzerland, edelweiss.

Cleaning Books.—If the leaves of a good book become soiled, sponge lightly with a clean cloth dipped in benzine. This must be done in a room without a fire.

OUR BABY.

Who is the king who has no crown,
Though he is dressed in a velvet
gown?
Ever since first to town he came
Every one's loved him,—what's his
name?
This is His Majesty, and his suite
All in a court dress nice and neat.
Whenever to hold his court he goes,
They follow his ten wee toddling
toes.
His scepter's a rattle, I must own;
Mother's lap is his nicest throne;
His army's tin and his navy's wood;
His subjects love him, he's so good!
Where is his kingdom? Don't you
know?
Why, in the hearts that love him so,
Though he is only a baby small,
He is a king, so say we all.
—F. Gray Severne.

THE LETTERS TO GREAT-
AUNT LYDIA.

"I don't see why we have to write to her," complained Betty, as her mother left the room. "A great-aunt seems so far away—not like a near, common aunt."

Robert frowned as he drew two chairs slowly toward the desk. "I shouldn't think she would like little-boy-and-girl letters," he said. "We can't write anything interesting. She never laughs."

"Of course not," agreed his sister. "She's too old."

Robert smiled. "Why, no, she isn't. Grandpa is eighty-five and he laughs all the time. It's fun to write to him."

Betty was always inventing games. "Let's pretend we are writing to grandpa," she cried excitedly, "only begin Dear Aunt Lydia." Then we'll have time to write the real letters. It's raining harder than ever. Let's write the make-believe letters with pencils."

"No, let's write with ink. Miss Thompson says we ought to be particular in everything we do." Robert's black eyes were very earnest.

"All right," said Betty. My teacher is particular about letters, too."

Soon two little heads bent over the low, wide desk in the corner of the library and two pens kept merry time to the patter of the raindrops. At last the letters were finished.

"Read yours first," cried Betty, tossing the brown curls from her shining eyes.

Robert stood by his chair, just as he did at school, and read:—

"Dear Aunt Lydia,—You would be surprised to see how tall Betty is. If I didn't drink a quart of milk a day she would catch up with me. I think that brothers ought to be taller than sisters, don't you, Gra—Aunt Lydia?"

"I have a good joke on Betty. You know how afraid she used to be of caterpillars. Last month, in our plum-tree, I found the loveliest great caterpillar, all green and covered with red, yellow, and blue tubercles. Miss Evans said we might call them spines now, but we told her we liked hard words. I kept the caterpillar in a box and fed it plum leaves. Betty would just peek over the edge—then jump back and scream. But one day I caught her looking into the box five minutes. When I crept up to her she screamed and looked kind of ashamed, but after that we would watch the caterpillar together. It was lots more fun. When it spun a big cocoon we wrote Miss Evans about it, and she said, if nothing happens, we would have a lovely big

cecropia moth next spring. Betty and I can hardly wait.

"I wish you would write me about your parrot. Has it learned any new words?"

"Your loving nephew,
"Robert T. Foster."

"That's lovely," cried Betty. "I don't care if you did tell about me. Now hear my letter."

"Dear Aunt Lydia,—I wish you could see Juliet, my dear, little gray kitten. Robert loves it just as well as I do."

"Father's Cousin Ellen came last week. Mother said I must not talk much about Juliet while she was here for she didn't like cats. I don't see how she can help it, but mother says folks are not all made alike. When Cousin Ellen came she never spoke to Juliet and it made her feel so bad I had to take her out doors to comfort her. But what do you suppose happened one day? Mother forgot her pocketbook when we went to market, and sent me back to get it. And there on the side porch I saw Cousin Ellen petting Juliet like everything, and saying, 'Nice kitty. You are the prettiest little thing I ever saw. How you can purr!' I hurried back and told mother, and she smiled and said some folks didn't like to show their feelings. But I've loved Cousin Ellen lots better ever since."

"We enjoyed the book you sent. Mother reads it to us in our story-hour."

"Lovingly, your niece,
"Elizabeth M. Foster."

"Your letter is just as good as mine," praised Robert, "even if you aren't so old. Oh, dear, now we've got to write the real letters and it's almost stopped raining."

In an amazingly short time the "real" letters were finished. Robert jumped up to read his, for he had spied a bit of blue sky.

"Dear Aunt Lydia,—I was glad to have school begin last month. Miss Thompson is my teacher. I am in the sixth grade now, and study reading, arithmetic, spelling, language, geography, music, drawing, and nature work. We have begun fractions in arithmetic."

"After school I get in the wood and feed the chickens."

"Your loving nephew,
"Robert T. Foster."

"That's just what we always write," sighed Betty. "My letter is almost like yours. These aren't at all like the others."

"What letters?" asked mother, who was smiling from the doorway.

Robert looked at Betty; Betty looked at Robert. Then they told mother all about it.

"See, the sun is shining!" cried Mrs. Foster. "Run out and play and I will read your letters and address the envelope. You have been in the house long enough."

Three days later the children found a letter from Aunt Lydia in the post-office. Robert read it aloud on their way home.

"Dear Robert and Elizabeth,—I was feeling far from well last Monday and was about to send for the doctor when your letters came. How I laughed over the story of Juliet! You have found that Cousin Ellen has a tender heart. If you were sick she would care for you day and night. Then the caterpillar story! It carried me back to the happy sum-



"Young man, the best tonic for you is the right kind of food. I suggest for Breakfast

Ghirardelli's
Ground Chocolate

*It's easily assimilated — it's
extraordinarily nutritious —
and it is supremely delicious."*

It comes PROTECTED—as all chocolate
should—in $\frac{1}{8}$ -lb., 1-lb. and 3-lb. hermet-
ically sealed cans.



Since 1852

D. GHIRARDELLI CO.

San Francisco



Brr-r!

Chilly, changeable
weather? A good
oil heater will keep
you warm and cosy.

Perfection Oil Heater

A gallon of Pearl
Oil gives 9 hours of
smokeless, odorless
cheerful heat.

Prices
\$3.75 to \$7.75

Dealers Everywhere
STANDARD OIL
COMPANY
(California)



Prr-r!

mer I spent hunting caterpillars, moths, and butterflies with my niece who teaches nature work in a large school.

"Don't be surprised, children, if you receive a big book about—just wait and see. You saved me a doctor's bill.

"Your affectionate aunt,

"Lydia N. Foster."

"I don't care if mother did make a mistake," cried Robert, "do you?"

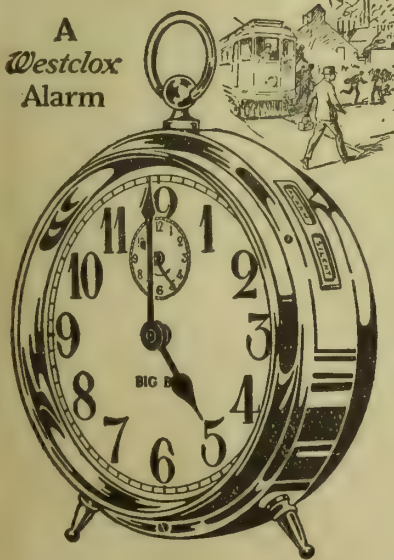
"No-o," replied Betty, slowly, "only I almost wish we had invited Aunt Lydia to visit us. I never supposed tender hearts were so common."—Mary Sherburne Warren, in Sunday School Times.

HOW TO OPEN A BOOK.

Hold the book with its back on a smooth or covered table; let the front board down, then the other, holding the leaves in one hand while you open a few leaves at the back, then a few at the front, and so on, alternately opening back and front, gently pressing open the sections till you reach the center of the volume. Do this two or three times and you will obtain the best results. Open the volume violently or carelessly in any one place, and you are likely to break the back and cause a start in the leaves.

Big Ben

A
Westclox
Alarm



FIVE A. M. for factory men who beat the time clock at the works.

Big Ben gives 'em their breakfast call long before the whistle toots. They used to pound the pillow right up to the last dot—until they learned a better way—as the paymaster soon found out.

Give Big Ben a trial, yourself; make your roll-over-time pay.

You'll like him face to face. He's seven inches tall, spunky, neighborly—downright good.

At your jeweler's, \$2.50 in the United States, \$3.50 in Canada. Sent postpaid on receipt of price if your jeweler doesn't stock him.

Western Clock Co.

La Salle, Ill., U. S. A. Makers of Westclox

Other Westclox: Baby Ben, Pocket Ben, Bingo, America, Sleep-Meter, Lookout and Ironclad

Good Health.

(By H. E. Pastor, M. D.)

Eat, Drink, and Be Merry.

Never sit down to a meal if you feel excessively tired, either as a result of physical or mental exertion. The digestive apparatus is then in no condition for the reception of food. Better rest and relax for half or three-quarters of an hour before beginning the meal. If you ignore this simple rule, you will soon contract a bad case of dyspepsia, if you haven't already done so. Hard thinking, worry, excitement—all those things which draw an undue flow of blood to the brain (and away from the stomach) militate against good digestion. Light, entertaining conversation at the table, jovial repartee—anything which relieves mental and nervous tension—are vastly superior to pepsin or other digestive ferments to aid the digestive process. And the rest and relaxation after the meal are just as important as before it. The jester at the table of the king in "ye olden time," with his merriment and raillery, of which we read so much in Shakespeare's dramatic tales, was no idle fancy or senseless fad. The custom was founded on solid, sterling good sense. As a recent very successful advertiser put it, "There was a reason for it." There is also a hygienic reason underlying the current popularity of the musical accompaniment in the fashionable city cafe. Music to the average person, under normal circumstances, is a pleasing distraction, and better than a whole box of Dr. Bunkum's digestive wafers for digestive ills.

True, you can't have a king's jester or an orchestra, or any other form of side show as an accompaniment of the rural meal; but all of us should be resourceful enough to improvise an atmosphere of cheer and pleasantries at the meal table—that "good digestion may wait on appetite, and health on both." Good cheer not only costs nothing, but sometimes saves heavy doctor's bills.

Pain and Its Purpose.

A distinguished physician has said that "pain is a blessing in disguise." Perhaps it is, but it is one of those blessings most of us could get along without very comfortably. Many of us who have a superfluity of blessings of this kind can't properly appreciate them. However, if we regard pain in the light of a danger-signal which warns us that there is something wrong in our internal mechanism which demands attention—something which might otherwise be ignored to our detriment—we must admit that pain has its uses even if it is ungentle in its mode of operation.

Our purpose here in bringing forward this painful subject is not to abuse it or to make sport of it. Indeed, it is no joke, nor can any amount of facetious fancy make it so. What we would urge upon readers of the Rural Press is the necessity of heeding pain's warning at once. Don't wait for a second or general alarm. A fire is more easily quenched in its beginnings than when the conflagration spreads. If you have a mild toothache have the tiny cavity plugged up instead of

letting the whole tooth decay and then losing it. If there is gastric pain after eating, study your dietary at once and avoid becoming a confirmed dyspeptic with dyspepsia's long train of collateral evils. When you detect the first symptoms of the boring pain of neuralgia, stop the wear and tear on the nervous system and take a good nerve tonic. When you feel the sharp, cutting pain of pleurisy—the "hitch" when you take a deep breath—take yourself in hand at once and don't let it spread. And so with the first throbbing pains of inflammation, or the death-like knell of the pain that ushers in a heart lesion. Pain is a monitor, warning you of a wrong within. Don't ignore it. The stitch in time saves nine—indeed, in the domain of health, good and bad, it often saves a life.

If You Would Pick a Winner.

If the farmer feels that he must select some member of his family for a professional life in the city, let him not pick out the most delicate under the impression that he is too frail for work on the farm. There is nothing more devitalizing than the exactions of professional life in the city, with its accompaniments of social indulgences, late hours, and indoor confinement. The list of those who have attained eminence as lawyers, physicians, ministers, literary workers, etc., shows that, as a rule, only those who have combined great physical endurance with great mental capacity, carve out a satisfactory career. Better keep the weaklings at home, where they will have a better chance—if not for great wealth, at least for better health.

Splendid Collection

OF

Rooted Plants

Any 6 of \$1.⁰⁰ Prepaid
This List

ACACIAS

PEPPER TREES

BUTTERFLY BUSH

BREATH OF HEAVEN

BOTTLE BRUSH

NANDINA

ROSE, AMERICAN PILLAR

ASPARAGUS SPRENGERI

SPIREAS

WIRE VINE

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These are not poor scrubby plants, but are selected from our best stock—and are representative of our whole nursery line. The above offer is but a sample from a list of over one hundred specials—names of which will be sent on request.

Slip a dollar bill in an envelope—check the plant on this list you want and mail it to us at our risk, and we will promptly ship the plants—postage paid. Do it now, and take advantage of the full-growing season.

LEONARD COATES NURSERY CO.

Morganhill,

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Send for General Catalog—Completely describing
Fruit Trees and Ornamentals.

California Garden Flowers

TREES, SHRUBS, VINES.

By E. J. Wickson, A. M.

is just what you need as an aid in your every-day work in the yard. It is written by a Californian who knows, to meet your conditions. It tells the how, when, and why, and is very practical in its suggestions.

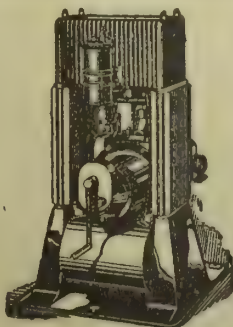
The book is divided into six divisions and these parts are divided into twenty-six chapters, which cover California conditions, cultural suggestions, California garden year, ways with garden plants, shrubs, trees and vines, methods against pests and diseases.

The work contains 258 pages of closely packed information of absolute value to plant growers, besides numerous illustrations—handsomely bound in cloth. Price, \$1.50 postpaid.

Pacific Rural Press, Publishers

525 MARKET STREET,

SAN FRANCISCO, CALIF.



Uni-Lectric
GASOLINE-ELECTRIC UNIT
LIGHTING SYSTEM

Electricity for Farm Homes

At one-third cost of juice from Power Company (this includes interest on cost of plant). It is the simplest and most economical plant on the market.

No Batteries - No Switchboard - No Rheostat

Will operate 50 lights 7½ hours for 11c. Will also operate electric fans, irons, small motors, etc. If your buildings are not wired, send us plans and we will give you full instructions so that you can wire them yourselves. Material furnished at lowest cost.

Karl A. Hedberg

ELECTRICAL ENGINEER.

104 Clay Street,

San Francisco, Cal.

SAN FRANCISCO.

San Francisco, Jan. 16, 1917.

WHEAT.
Eastern buying continues active for export, and the local market, with very scant spot offerings, is firm but rather quiet. Northern club is slightly higher and scarce.

Sonoma wheat 2.80
Northern club 2.70@2.75
Calif. club, cbl. 2.60@2.65
Northern Bluestem None offered
Northern Red None offered

BARLEY.

Country holders have been shipping a heavy tonnage on old orders for the East, and about 6,000 tons is soon to be exported, following a cargo last week. This strengthens the general situation, especially as there is a very strong demand in Europe.

Seed, cbl. 2.50
Shipping, cbl. 2.35@2.40
Choice feed, cbl. 2.22@2.25

OATS.

Stocks here are but little in excess of current needs, most supplies coming from the north, where stocks are not excessive.

Red feed \$1.80@1.85
White 2.15@2.20

CORN.

The Eastern market shows increasing strength, resulting in a very firm feeling here, though no advance is noted. California yellow and sorghum grains in strong demand.

[First-hand prices on strictly first-class grain, San Francisco.]
Eastern Yellow, cbl., in bulk 2.10@2.15
California, sacked 2.20@2.25
Milo Maize 2.00@2.20
Egyptian 2.25@2.25

BEANS.

The buying movement is gradually getting under way again. The general demand is quite active, especially for colored varieties, both pinks and bayos being higher. Limas have receded, owing to the appearance of offerings at concessions from the recent advance.

[Uncleaned, on wharf, San Francisco.]
Bayos, per cbl. 5.75@6.00
Blackeyes 4.50@4.75
Cranberry beans 6.60@6.75
Horse beans 3.25@3.50
Small Whites (south) 7.00@10.50
Large Whites 8.10@9.50
Pinks (south) 7.50@7.75
Limas (south) 7.50@7.75
Red Kidney 9.00@10.00
Mexican Reds 6.50@7.00
Tepary beans 5.90@6.00

SEEDS.

There is some call for vetch, and the price of Oregon has stiffened a little, with diminishing supplies. Other lines rather quiet, though occasional inquiries are received for the sweet clovers and alfalfa for spring sowing. (Ton lots or over, to planter, S. F.)
Alfalfa, per lb. (guaranteed) 19@21 c
Oregon Vetch 4.5@5 c
Melilotus Indica 5@8 c
Melilotus Alba Nominal
Bur clover, recleaned 12 1/2 c

HAY.

Arrivals show up a little better this week, the dry weather favoring shipping, but local supplies have been getting rather low and the additional supplies have been well received by the trade. Buying in the country has been active, with some large purchases by dealers; and the rapidly diminishing supply is reflected in a general advance in the local market. Fancy wheat and oat hay is unusually strong; and there is also a large demand for the cheaper grades, causing wild oat and barley hay to stand on the same price basis as good tame oat hay.

[Prices per ton, carload lots, San Francisco.]

Wheat, No. 1 \$17.00@19.30
No. 2 15.00@17.00
Tame oats 14.00@19.00
Wild oats 14.00@16.00
Alfalfa 13.00@17.30
Stock hay 13.00@14.00
Straw, per bale70@.90

FEEDSTUFFS.

All lines are strong, with quite a large movement from local stock; an advance is expected in rolled barley.

[Per ton, San Francisco.]
Beet Pulp, per ton \$30.00@31.00
Alfalfa meal, per ton 21.00@22.00
Bran, per ton 30.00@31.00
Oil Cake 40.00@41.50
Cocoanut cake or meal 31.00@32.00
Cracked corn 47.00@48.00
Middlings 39.00@40.00
Rolled Barley 46.00@47.00
Tankage 47.00@48.30
Rolled oats 46.00@47.00
Rice middlings 33.00@34.00

POTATOES, ONIONS, ETC.

Lettuce is higher, with rather limited offerings, and other local stock is firm. Most lines of potatoes have been marked up again. River stock is about all cleaned up, and new land stock is held at \$2.85 per sack (116 lbs.) on the river bank; while Oregonians are held at \$2.25 or more at shipping point, with strong bidding from Eastern buyers. As for onions, there are not over 2500 cars left in the United States. Local supplies are all coming out of cold storage. Holders are asking \$6 per cbl.
Lettuce, crate 1.25@1.75
Celery, Delta, crate 4.00@4.50
Tomatoes, crate 1.50@1.75
Rhubarb, box 1.00@1.50
Mushrooms, lb., fancy 75c
Potatoes, cbl., Delta 2.25@2.65
Sallinas 2.75
Oregon 2.40@2.70
Onions 5.50@6.00
Garlic, lb. 3 1/4 @4c

POULTRY.

Local arrivals increased for a few days, but have fallen off again, and supplies are much smaller than a month ago, while the demand holds up. Hens are somewhat easier this week,

but everything else is strong, ducks being an active feature.
Turkeys, dressed, large, lb. 29@32c
Turkeys, live, lb. young, large 26@27c
lb. 28c
Broilers, 13 lbs. to doz. and less, do. over 18 lbs. to doz. 26@28c
Fryers 25@27c
Hens, extra, per lb. colored 20@21c
Small leghorn 18@20c
Smooth Young Roosters, per lb. (3 lbs. and over) 24@26c
Geese, per lb. 16@17c
Squabs, per lb. 38@42c
Ducks, 19@21c
Old 19c
Belgian Hares 12 1/2 @14c

BUTTER.

The week opened with a further advance, and the market remains firm. The current local output is light, and while there is still a brisk shipping movement to coastwise markets, prices are now too high for shipment to distant markets.

Thurs. Fri. Sat. Mon. Tu. Wed.
Extra 35 1/2 36 36 36 1/2 36 36
Prime 34 1/2 35 35 35 35 35
First 34 34 1/2 34 1/2 34 1/2 34 1/2

EGGS.

The cold weather has curtailed production, and with about four carloads shipped East last week prices have naturally jumped, extras going up 7c. In the last fortnight. The Government report just out shows storage stocks for the country little over half what they were a year ago; and the California district contains 18,000 cases, against 24,000 cases last year. The local demand for cheap eggs has caused pullets to approach the price of extras very closely.

Thurs. Fri. Sat. Mon. Tu. Wed.
Extra 40 43 43 43 42 43 1/2
Sel. Pul. 38 39 1/2 42 42 41 41

CHEESE.

No further advance is noted, but the market is very strong.

[S. F. Dairy Exchange prices.]
Y. A. fancy 20 1/2 c
Fancy Calif. Flats, per lb. 18 c
Monterey Cheese 17@19c

DECIDUOUS FRUITS.

Local storage apples are moving off well, and Newtowns have advanced. Many are going East, and there is a strong English demand, but shipping space cannot be obtained. Northern stocks still amount to about 6,000 cars, but many are now going East. They

have not been well received here, owing to small size.

Bellflower, box \$.65@.75
Newtown 1.10@1.25
Pears, Winter Nellis 2.25@2.75

DRIED FRUITS.

The interesting feature is the appearance of offers for 1917 fruit from some important local packing concerns, who are anxious to provide for next year's needs and are confident of the strength of the market. Figs especially are wanted, and offers are made of 4 1/2 c. for black, 5 1/2 c. for white, and 9c. for Calimyrnas. They are also offering 6c. for future prunes and 6c. for peaches. It is impossible to learn as yet whether much business has been done at these figures, but it is doubtful if many growers care to contract so far in advance. Spot fruits remain quiet, though inquiries are gradually increasing, and packers, who control practically all supplies, are holding very firmly. December raisin shipments were 8,000 tons ahead of the same month of 1915, despite the car shortage. The market is in very good shape. [Net to growers, bulk basis, f. o. b. shipping point.]

Apples, new crop 8 @ 8 1/2 c
Apricots, per lb. 1916 15 @ 16 c
Figs, black, 1916 5 1/2 @ 6 c
do, 1917 4 1/2 c
do, white, 1917 5 1/2 c
Calimyrna, 1917 9 c
Prunes, 4-size basis, 1917 5 c
Pears 7 @ 12 1/2 c
Lake County Pears 11 @ 12 1/2 c
Peaches, 1917 6 c

HOPS.

Values are unchanged, and the market dull, most of the crop having been shipped.

HORSES.

The local market has been more active than usual this week, several large lots of horses and some mules being put on sale; a large part of the stock being from firms which were putting on motor vehicles. The stock included many attractive animals, both drafters and lighter classes; and buyers was highly gratifying.
Drafters, 1700 lbs. and up \$ 250
Drafters, 1550 to 1650 lbs. 150@200
Chunks, 1350 to 1500 lbs. 150@175
Wagon horses, 1050 to 1350 lbs 110@150
Green Mountain range horses
950 to 1200 lbs. 20@75
Mules:

Great Demand for Dairy Produce.

The California market for butter, cheese, and eggs has been greatly affected by war conditions. In butter this has been especially apparent, prices during 1916 averaging 29.03c. against 26.29c. for 1915, notwithstanding an increase of production of about three million pounds. Most of this increase was absorbed by shipments to England, and the rest by Eastern markets, whose stocks of both fresh and storage butter were depleted by export demands. This accounts for the abnormal movement in the last six months, which is entirely a war condition and cannot be permanent. There has been some slight movement to the Orient, but those markets are now supplied from Australia; coastwise shipments are an item of some importance.

Prominent creamery men believe California butter is now permanently on an export basis, owing to the slight improvement in quality and increase in quantity produced, with conditions favoring further increase. California butter has been well received in London, and some Eastern cities; but there is still room for improvement. The normal Eastern movement is from January 1 to April 1; Eastern and Northern storage stocks are exhausted, and there are not over 300,000 lbs. held locally, against 750,000 lbs. normally.

The problem now is to get all California butter to such a quality basis that it will be fresh and good when three weeks old; if this is done, dealers count on about three months of active Eastern shipment every year.

Local arrivals of cheese were over fifteen million pounds, an increase of over 25 per cent from 1915, prices being almost constantly higher; while for the last three months or more there has been a fairly steady demand for Eastern shipment, with some foreign orders, reversing the usual direction of movement. The immediate causes are the same as in the case of butter; and with increased production and improving quality, for which many are now working, some believe exports will hereafter preponderate over imports.

No Eastern Eggs Coming to the Coast.

Outside demand for eggs evidently prevented a bad slump in prices. Local consumption was apparently below 1915, the arrivals in San Francisco being lighter most of the year; the average price for the year showed less than 1c. advance for 1916. Notwithstanding light receipts, well-informed dealers say production was actually larger than ever before; the curtailment being in Eastern eggs. Owing partly to heavy foreign demand and domestic prosperity, Eastern prices last spring reached extreme levels, and it was the first season on record when no Eastern eggs were brought here. The California output has taken care of all requirements, and for the last few months there has been a steady Eastern shipping movement from one to two cars a week. Storage operations here last spring were normal, but there is no storage stock left now, and Eastern demand continues strong. The high cost of feed has not yet visibly affected production, though the cold weather of late has curtailed output. Ideas differ as to the outlook; some of the leading dealers believe no more Eastern eggs will be brought to California, and that increased production will survive advance in feed, which is largely temporary. Other believe that, unless egg prices advance materially, production will soon decline.

900 to 1000 lbs. 50@100
1000 to 1200 lbs. 150@175
1200 to 1400 lbs. 175@200

LOS ANGELES.

Los Angeles, Jan. 16, 1917.

BUTTER.

Receipts of week ending Jan. 16, 1917

241,225.
Receipts of week ending Jan. 16, 1916
293,650.

The consumptive demand and the receipts running light, caused an advance of 1c up to Monday. Cold storage stocks continue lighter than a year ago which also had a bullish influence. Prices are too high to cause anything like a free movement. Tuesday on change there was more doing than for some days and some early sales showed 1/4c advance, but the close was much changed. San Francisco was 1/4c lower, while Chicago and New York were unchanged. We quote extra creamery 37c
Prime first 35c
First 33c

Wed. Thu. Fri. Sat. Mon. Tu.
1916 36 36 37 37 37 37
1915 28 28 28 28 28 28

EGGS.

Receipts (railroads) for week ending Jan. 16, 1917—1079 cases.

Receipts (railroads) for week ending Jan. 16, 1916—1339 cases.

Receipts continue to run lighter than a year ago, and an improved consumptive demand is being had. The very high prices East also drew some shipments to the Atlantic seaboard during the week, which had a bullish influence. The market advanced 1c up to Monday on extras and fresh ranch, case count, while selected pullets sold up 2c. San Francisco sold up 3c up to Monday and Chicago advanced 8c on first for the same time and New York 2c. This sensational jump in prices was not without its influence upon the market here. Tuesday on call there was fair trading and higher prices prevailed. Extras advanced 1c and fresh ranch case count sold up 1 1/2 c.

We quote fresh ranch case count 42 c
Extras 41 1/2 c
Pullets 38 c
Candled 2c and selected 3c over quotations.

Wed. Thu. Fri. Sat. Mon. Tu.
Ranch 37 39 39 39 40 42
Extras 35 39 40 41 41 41 1/2
Pullets 36 37 37 38 38 38
16" Ranch 30 30 31 33 1/2 33 1/2

POULTRY.

A fairly active and firm market was had the past week for most offerings. The local receipts were light and a car of Eastern mixed had to be brought in to piece out the supply. Broilers, fryers and hens were all wanted, and fair demand for ducks and turkeys. Geese continue slow sale.

We quote from growers:
Broilers, 1 1/2 to 2 lbs. 25@26c
Fryers, 2 1/2 to 3 lbs. 22@23c
Hens, over 4 lbs. 20@21c
Ducks 18@19c
Geese 16@17c
Roosters, 3 lbs. up (soft bones) 22c
Turkeys, heavy, 12 lbs. and up. 26@27c
Turkeys, light 23@24c
Squabs, live, per doz. \$1.50@3.00
Dressed 3.75@4.85

HAY.

The market the past week was quiet. More coming in and as the trade had been pretty well stocked up the week before, buyers were inclined to hold back and go slow; but while there was less life to trade prices showed no quotable change, though hardly so firm as last week. Receipts, 158 cars.

We quote f. o. b. Los Angeles:
Barley hay, ton \$18.00@20.00
Oat hay, ton 19.00@21.00
Alfalfa, northern, ton 16.00@17.00
Alfalfa, local, ton 18.00@20.00
Straw, ton 9.00@10.00

BEANS.

There were more moving the past week than for some little time. Receipts were fair and the trade was inclined to take hold again. Shippers and local dealers both buying. Whites were higher, both small and Lady Washingtons.

We quote from growers:
Limas 8.75@8.00
Large white 10.00@10.50
Small white 10.00@10.50
Pinks 7.25@7.50
Blackeyes 5.25@5.75
Tepary 5.75@6.25

HONEY.

The market is still quiet. Not much moving the past week, and what demand had was for small lots to piece out stocks with.

We quote from growers:
Water white, pound 7 1/2 c
White sage, lb. 7 1/2 c
Light amber sage, lb. 7 c
Light amber alfalfa, lb. 6 1/2 c
Fancy white comb, lb. 10 c
Light amber comb 9 c
Beeswax 22 c

Special Citrus Report

Los Angeles, January 16, 1917.

Shipments of citrus fruit from Southern California from November 1 to Jan. 14, 3,749 cars of oranges and 930 cars of lemons. Same time last year, 1,907 cars of oranges and 1,121 cars of lemons.

Shipments from Central California from November 1 to January 12, 3,773 cars oranges and 123 cars lemons. Same time last year 4,097 cars oranges and 97 cars lemons. There was little change in the markets East the past week. The receipts were not heavy

New Dried Peach Contract.

The California Fruit Canners' Association and the Griffin & Skelley Company, which last year had the marketing contract for the California Peach Growers' Association, have been merged, together with the J. K. Armsby Company, in the California Packing Corporation, which now ranks as one of the largest marketing organizations in the country. The peach contract has been placed with the new corporation, which will give the growers' association a great advantage in the distribution of the goods, as well as in the operating end, the Armsby plants, as well as those of the other companies, now being available.

and the market took what arrived at about unchanged prices. Lemons were in fair demand and steady to a little higher at times. Receipts were light, which helped the market.

Locally the market is much the same as a week ago. Local packers bought fairly of the larger sizes higher colored oranges, for which they were offering 1c per pound in the grove picked. Pale colored and small sizes were neglected and they were being bid for at lower prices. Grapefruit was in very good demand at 1@2c per pound in the grove picked. Lemons were very dull. Only the best were being bid for at 1@1½c per pound in the grove picked. Free offerings of cull oranges and lemons interfering much with

the regular market. Only desirable fruit showing any life.

AUCTION SALES.

New York, Jan. 15.—Twenty-three cars navel and three cars lemons sold. Oranges higher on good colored stock, weak and lower on pale stock. Lemons lower. Sales California navel averaged \$1.60@2.80. Lemons averaged \$2.55@2.90.

Boston, Jan. 15.—Sixteen cars sold. Market unchanged on oranges, higher on lemons. California navel averaged \$1.25@3.05.

Philadelphia, Jan. 15.—Six cars sold. Market unchanged on oranges, higher on lemons. California navel averaged \$1.45@2.35. Lemons averaged \$2.40.

Special Livestock Market Report.

Los Angeles, Jan. 16, 1917.

CATTLE: A firm market and fair demand was had the past week. The high markets East making feeders, who are supplied with plenty of feed inclined to hold, and good killing cattle are coming in less freely. Yet there were enough needy feeders in the country with cattle ready to come, to give a fair supply of very good steers and some fat cows. California and Arizona continue to furnish us most of the supply.

Quotations f. o. b. Los Angeles:
Beef steers, 1000 to 1100 lbs. \$8.25@8.50
Stockers and feeders 5.50@6.00
Prime cows and helpers 6.50@6.75
Good cows and helpers 6.25@6.50

HOGS: There is no change to note in this market from a week ago. A fair supply of very good hogs were had during the week and in sympathy with high markets East, prices were held steady and firm. Still the demand was limited as packers were taking only such hogs as needed for the fresh meat trade, few caring to buy hogs for curing purposes and compete with the big packers of the Central West who have well-matured corn hogs to kill whose meat cures much better than hogs fattened on other feed. California gave us most of the supply for the week, but few Idaho hogs coming in.

Per cwt. f. o. b. Los Angeles:
Heavy, averaging 250@300
lbs. 9.25@9.50
Mixed, 200@250 9.25@9.50
Light, 175 @ 200 9.25@9.50

Rough docked 20 pounds, piggy sows 40 pounds and stags 80 pounds.

SHEEP: The high prices are causing killers to slaughter less freely now that the weather is colder and there is a better call for what coming in. Utah and Arizona furnished most of the supply and what coming to market were in good condition. Yearlings and lambs made up most of the supply. Heavy sheep continue scarce and especially firm.

Per head f. o. b. Los Angeles:
Prime wethers \$7.00@7.25
Prime ewes 6.50@6.75
Yearlings 6.50@7.00
Lambs 6.50@7.00

CALVES: A steady market and fair demand was had the past week. Receipts rather light. What came in selling without trouble at \$8.50@9.50.

San Francisco, Cal., Jan. 17, 1917.

[Prices paid for stock, live weight, off cars, without feed or water, at Stock Yards, South S. F. Hog prices subject to seller standing one-half of all hogs condemned by government inspectors.]

BEEF supplies continue to be a source of worry to packers. Supplies are about cleaned up and buyers are even scouring the country for dairy steers. The market on dressed beef has been forced up to 12 cents, carcass weights, but with present prices of live cattle, killers feel they should secure a better price. Everything but No. 2 steers are marked up.

Steers, No. 1 8 @ 8½c
No. 2 7½ @ 7¾c
Cows and Helpers 6¾ @ 7¼c
No. 2 6¼ @ 6¾c
Bulls and Stags 5½ @ 6c
Calves, light 9 @ 9½c
Medium 8½ @ 9c
Heavy 7 @ 8c

SHEEP and Lamb market is still improving. It has developed that a corner in lambs has been put over by one local concern with the result that others are sustaining losses on this line. Another firm is said to have about all of the sheep bought so there are really two corners on the market. This makes a nice situation for the grower with stock to sell.

Prime Wethers 8½ @ 9½c
Ewes 7½ @ 8c
Lambs 11 @ 12c

HOGS: Receipts are still falling off but offerings are of a better quality than they have been. No Idaho hogs are being purchased here but report has it that they are not so good as in previous seasons. Prices are again marked up on heavy weights.

[Rough, docked 20 pounds, piggy sows, 40 pounds, stags 80 pounds.]
100 to 150 lbs. 8½c
150 to 300 lbs. 9¼ @ 10c
300 to 375 lbs. 9¼ @ 9½c

WOOL remains as last reported. All buyers are in the field but we are unable to change our quotations because of lack of trade. It is thought that the coming week will see more activity. A 20 per cent slump in London market is reported. England is allowing wool to come to U. S. from Australia and other colonial possessions. Red Bluff, year's 25@27c
Mountain, fall 16@20c

Potato Supplies Short.

The firmness of potatoes is due to an exceptional demand from points as far east as Chicago, and from the Southwest, which are absorbing all the Oregon and California stock they can get. Until very recently the car shortage and cold weather prevented these Eastern shipments on a very large scale, especially from Oregon, and the result was an easy market here; but with more cars the stock is rapidly moving off. Dealers say fall prices East made new records, owing to the short crop. The question now is, How much did the prices curtail consumption? Unless the consuming demand was materially reduced from its usual volume, supplies everywhere will be short before the new crop appears; and the present market is reflecting the anticipated shortage.

WEEKLY EGG AVERAGES.

Cents per dozen for Extras.				
Week Ending	San Francisco	1916	1917	Los Angeles
Jan. 9	31.41	37.91	32.00	38.16
" 16	33.33	41.83	30.75	40.83

Publisher's Department.

The third edition of our California Vegetable book has been exhausted. Prof. Wickson is at work revising its contents, and we hope to have the fourth edition ready for the trade by September, 1917.

Read our market reports. We are devoting a good deal of time and space to give detailed authentic reports of the greatest value to producers. Look up the particular lines you are interested in each week. It will pay you.

Many nurserymen report that special fruit tree stock has been all sold. As we have stated several times of late, it will pay intending planters to buy early, before the variety wanted has been all taken.

FOUR NEW BOOKS.

The Orange Judd Co., of 315 Fourth Avenue, New York, has recently issued four books of agricultural interest:

"Judging Farm Animals" by C. S. Plumb, Professor of Animal Industry, Ohio State University, is a well illustrated book of 600 pages. The author has divided the volume into five parts covering Farm and Function, The Horse, Judging Cattle, Judging Sheep, Judging Swine. The author makes it easy for the reader to follow the discussions through and get the real value from them. Price \$2.25, net.

"Poultry Breeding and Management," by James Dryden, Professor of Poultry Husbandry, Oregon Agricultural College. This book contains 416 pages, well illustrated. The author's long experience in poultry experimental work is used freely in every chapter of the book, making it of practical value to the poultry producer. Price \$1.60, net.

"Modern Fruit Marketing," by B. S. Brown, Professor of Horticulture, University of Maine, is another valuable book of 300 pages, price \$1.25, net. The author discusses fruit harvesting operations, preparing fruit for market, packages, packing, storage, transportation, selling organizations, etc.

"Semi-Centennial History of the Patrons of Husbandry," by Thomas Clark Atkeson, a book of 370 pages, will interest members of the Grange. Price, net, \$1.50.

WEEKLY BUTTER AVERAGES.

Cents per pound for Extras.				
Week Ending	San Francisco	1916	1917	Los Angeles
Jan. 9	26.65	34.91	28.16	36.90
" 16	27.83	35.83	28.10	37.00

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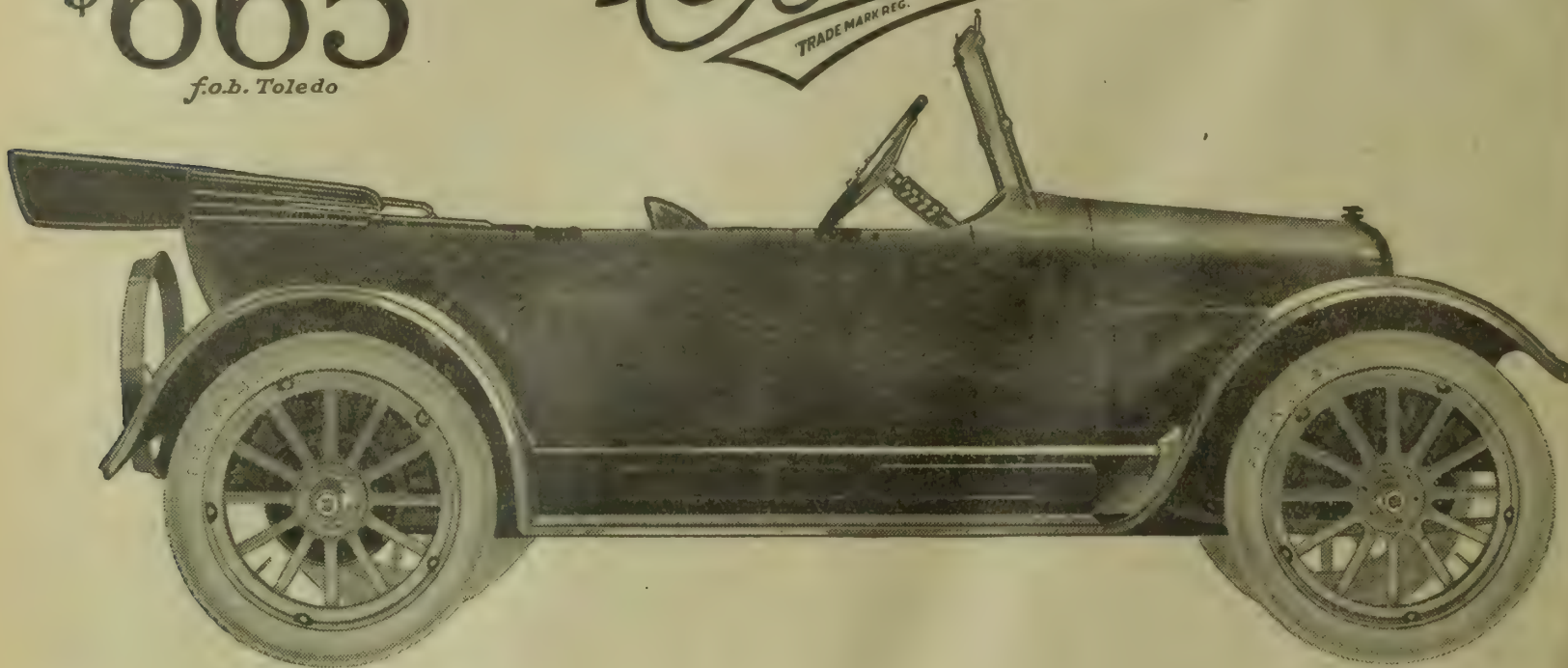
The 1916 bean crop is now practically all out of growers' hands, except for some of the limas and the small whites which were damaged and move slowly. Prices on practically all varieties have reached unheard-of levels, and scant provision has been made for market requirements between now and the new crop. The entire California crop is estimated by well-informed dealers at about 3,600,000 sacks, of which less than 1,500,000 sacks are now left in the State. The crop, though below that of 1915, was far ahead of all former years, but the demand has surpassed all records, both in the East and in export markets. The Michigan crop of whites was very light, and the damage to the local small whites tended to strengthen the market.

When the new crop came in, the market was bare and prices already unusually high, which encouraged many to sell at once; a few had made contracts at rather modest prices before the crop matured. Most growers, however, seem to have taken their time about selling, and received at least a share of the advance which has taken place since harvest time. While the extreme prices in some lines are evidently curtailing the demand, many inquiries are now being received; and in view of the scarcity some further advances are not unlikely. Whether the demand will continue next year is very uncertain; but under war conditions it would seem fairly probable that next year's crop will be favorably received, and the market entirely bare by fall.

Quite a large tonnage of Oriental beans is now arriving, but is mainly for export to other countries; most of the Japanese crop having been sold in advance for Europe. Perhaps 20 per cent of the imports will remain in the United States, and there will be practically no competition with California varieties.

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5 Passenger Touring
\$665
f.o.b. Toledo

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THE PACIFIC RURAL PRESS

SAN FRANCISCO

JANUARY 27, 1917.

LOS ANGELES

Using Vines' Reserve Food for Grapes.

[Written for Pacific Rural Press]

THE greatest draft on a grapevine's energy should be in elaborating sugary meat for the berries. To secure this condition of most economical and biggest production, requires attention to all phases of grape culture. But aside from setting a good crop, the principal cultural features are irrigation, cultivation and proper pruning to prevent dissipation of the energy into useless wood to be pruned off again. Vigorous grapevines store an abundance of starchy food in their arms, trunks, and roots, to be used in starting early spring growth. If they are allowed to waste this "reserve" in riotous early growth, or to use it later in spring or early summer when the leaves and roots should be supplying all substance necessary for growth of vine and grape, there will be none left at sugaring time. If this reserve be husbanded properly, the vine will use it at maturity of the grapes, making them solid, sweeter, and heavier, giving a bigger crop and of best quality.

Cultivation.—Cut off surface root feeders by plowing deeply in the centers; and less deeply close to the vines, at or immediately before blossoming. Let the ground lie awhile to dry out if wet, and to prevent riotous growth. Watch the ground and cultivate at the proper time to conserve enough moisture so the vines won't suffer until the first available irrigation after the berries are well set and mostly the size of shot or larger. F. H. Booth of Fresno county did it as follows, last season, with great satisfaction. He plowed in April and cultivated crosswise soon afterward, because his ground is not wet, being an ashy loam several feet deep. Then after the first irrigation, he cultivated with spring tooth, trying to get over the whole place every ten days. A weed cutter worked fine under the vines, and left a good mulch.

Irrigation.—The first irrigation came too soon, and resulted in some shot-berries. It was applied before blooming, because water was not to be available again for a month. Now he says he would rather have none at all, but conserve moisture by cultivation, till the next run. Water was just run over the ground lightly as possible, straight down the rows. At the second run of water about June 1, everything was saturated to the hardpan by starting a 4½-foot head of water onto the highest points and making high-leveed checks on contours. Water was held in them on one

side all one day, for the high places needed the most thorough soaking. Lower checks were not flooded so much on account of seepage to them. This irrigation took three days of 12 hours each. The third irrigation came shortly after July 4 with the same head and by the same system, but taking only 1½ days on the 12 acres. Later, certain spots showed need of more water, by browning leaves which would not have hung much longer, and a fourth irrigation was given to care for these as well as to sustain vines with very heavy crops which were to be held later than natural. No waterberries appeared in the crop, which when seen in mid-September, included a lot of good second crop bunches of big berries, solid and of fine color. Where vines were weak and grapes shriveled, they had "come back" after this irrigation.

Without adequate cultivation and irrigation, the vines would have called out their reserve food early in the summer, to support themselves, their roots, and crops. Having exhausted their reserves, it would have been proportionately harder for them to start well again when renewed attention was given; and impossible to finish heavy sugary crops or strong wood, if the neglect continued.

CHAIN-PRUNING MUSCATS.

A few acres of Muscat vines now belonging to A. T. Hawley of San Diego county made rank wood growth, but wouldn't bear on account of coulure. That was some 20 or 30 years ago when they belonged to

Geo. Hawley. Their neighbor, Mr. Asher, suggested chain-pruning. They did it, and the vines have borne ever since. The Hawleys frequently pick 60 pounds per vine when ordinary vines yield a tray.

The vines had been set 12 feet apart on strong silty-granite-clay soil 29 feet deep in El Cajon valley. Instead of cutting all of the spurs short as usual, one of the strongest was left in each of two directions five or six feet long. These were pegged into line along the ground and left to grow. Not enough pegs were used, for now these canes bend and twist along the row like snakes. If they had been held straighter in line, the cultivation would have been easier all these years.

Spurs were left around the crown as usual; and the following winter, the shoots from the long canes were cut for spurs. They have been

(Continued on page 103.)



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EDITORIALS.

WINTER'S BACK BROKEN.

IF OUR memory has any standing in weather prophecy, we should say that we have passed the crest of the winter way of 1916-17. We count it usual to reach the lowest temperatures within a month beginning on Christmas day; and though the thermometer has been groveling most unusually this year, elevation should now displace depression. There has been some loss to succulent things by an extreme of 18 to 20 degrees above zero, which has been reached at several valley points, and there has been much scurrying for fuel because the car-famine has delayed shipments. Diligent use of orchard-heating devices has, however, largely reduced injury, when value of exposed products justified this investment, and the chill of personal exposure to such low limits for a brief time will soon be forgotten. Now we want it warmer and wetter. Southern California has the advantage over the rest of the State this year in getting these twin joys, while the central and northern valleys were still cold and dry. Now it is to be expected that the rest of the State will get the warmth which goes with wetness, or vice versa, as you like it. We notice that some weather sharps have objected to our criticism of the Oregon weather prophet, who claimed last fall that this winter would be warm and dry. Our proposition to him was true when made, and is true still: that when it is warm in winter in California it is wet, and when it is cold in California it is dry. Therefore, if he was sure it would be warm we would take the chances in its being wet. Now, as it worked out, it has been dry and therefore cold—that is dry when it has been cold. We are ready still for his prophecy of warm weather to redeem itself and to bring more rain. The dry year part of the Oregon prophecy has already gone wrong, for at most points in California the rainfall is near the normal and at some points beyond it. If the season goes along as it has during its first half, there will be water enough and no cause to worry.

BACK-YARD VISIONS.

IT ALWAYS seems a thankless task to embroil the pangs of a joyful, self-deluding liar, and yet one must not always avoid it, because such falsification may, by constant exercise, mislead others—either by implication or direct approach. On the face of it, it might seem that a man could be allowed to see visions and dream dreams in his own back yard without interference, and so indeed he might, if his indulgence were not trumpeted in the public ear for the very wide propagation of error. It is to such an imputation that the current exhortation to vacant-lot and back-yard food production in our thinly-built towns are rendering themselves liable. We have recently been reading some of them, and though many are reasonable and their results attainable with wise and adequate effort, others are calculated to make Aladdin rub the plating off his wonderful lamp in emulation. This will do for a sample:

"A minister in a small community, who had a back-yard 38 by 60 feet in size, sold produce from this area to the value of more than \$325 while still pursuing his regular vocation."

We do not say this is not a fact, though we are quite at a loss to know how it could be done, and no information is given on that point. But, granting that this preacher's garden-report was just as true as his sermons, what are the results of repeating such a tale? One result will be disappointment to all who undertake back-yard gardening, which is a very pleasant recreation, if one has interest and liking for it, and a reasonably profitable one also. The income reported is probably at least six times as much as one could reasonably expect—even if he worked hard and intelligently and credit up all his produce at prices which he would have had to pay at retail for it. But the false ideas propagated by such a story are much wider-reaching than that. They affect a thousand who never try food-growing to one who does try, and is disappointed by not realizing such reward. From these false ideas come the impressions that farmers are overpaid for their work in food production; that the consumers are being robbed by the farmers; that it is easy to get hundreds of dollars from acre-fractions of land and all such falsehood and nonsense about farming, which our popular journals are setting forth in a sensational way. Such publications push into farming many who lack knowledge and other qualifications for it; they inflate land prices, raise taxes and wages, and make it continually harder for the farmer to get any reasonable profit from his business. Back-yard visions are really the worst enemy of fair-priced food production.

FRONT-YARD REFLECTIONS.

OF COURSE we believe in the joy and profit of back-yard vegetable growing, if it is not foisted on the public with such an outburst of consecrated imagination as is manifested in the ministerial proclamation noted in the preceding paragraph. The cottager's garden has such a place in poetry that we cannot doubt its title to figure also in domestic economics—which is becoming quite a poetic affair. Still, seriously, we do believe in city dooryard gardening, and we really enjoy the sight of one neighbor's front yard, which is run from year to year with an alternation of celery and cabbages forward to his front line on the street, vastly more than another neighbor's outfit which has colossal ash piles in the rear and a tangle of neglected and pest-ridden shrubs in front—a condition which he explains by the high cost of water and of Oriental labor. To us, a well-kept cabbage is handsomer than a forsaken chrysanthemum. It should be remembered that any kind of gardening is scant of beauty and nutritiveness unless one has a heart full of desire and an arm full of physical energy. This is the reason why we count most exhortations to door-yard food production vain, and also why we look upon exaggerated reports of profit therein as likely to lead only to disappointment and desperation. You cannot make a good gardener by economic exhortation any more than you can make a saint by statute. In both cases there must be emotion welling up under the top button of the waistcoat, and, in the case of the home gardener for crisp vegetables, there must also be a yearning under the lower buttons thereof. Unless you get this combination, joyful exhortations unlock no door-yard food-production problems.

A HINT AT GOAT-GARDENING.

IN VIEW of this requirement, which is often difficult to meet, we are wondering whether the exhortation to goat the dooryard is not, after all, more rational than the one to garden it. It is surely more unique. It was announced by the publicity expert of the University of California last week that "most families can use the product of a quarter of a cow"; and when you ask, "which quarter," you get the whole argument. It is like this:

"That a back yard and a front yard of an ordinary city lot will sustain that quarter of a cow in the guise of a goat and that milk bills

may thus be rendered negligible and assist to the extent of \$50 or \$60 a year in reducing the cost of living, is the opinion of Professor G. H. True, of the University Farm School at Davis. He says the grass from a front lawn, together with the refuse of a vegetable garden, will keep the goat well, while it would not be sufficient by 75 per cent to keep a cow."

The suggestion is surely a good one and it has no exaggeration, which is one reason why we like it. A goat will not only eat the refuse of the garden, but, if you get the right kind of a goat, it will eat the garden itself, including the morning paper, the contents of the clothes' line, the door mats, the kid's base-ball mit, and the paint from the backsteps. In other words, it will ensure absolute cleanliness of the whole place, which is a fundamental of good gardening.

CHOICE OF GARDEN GOATS.

BUT we presume that Prof. True does not refer to the circus-poster breed of goats which you see making sleeping porches of cabin-roofs in the outskirts of our towns, as your train speeds through. These goats are certainly a beneficence in their station and bring many comforts to their owners, but they are anathema in the exclusive residence districts. Offspring of imported Swiss and other foreign goats should be sought by those desiring this kind of garden ornament and service. They have less plebeian tastes and recreations, and devote themselves more diligently to milk production. Californians have imported and multiplied these goats, but their desirability in suburban home economics is not adequately appreciated. If our suburban garden makers would spend less money on a cast-iron meagerie and build pedestals on which pure-bred Toggenburgs or Saanens could disport themselves at milking times, with a fine back-ground tracery of shrubs and vines, each rising and setting sun would fill our souls with truer art and our bodies with purer pabulum.

WORK AND WAGES.

BUT let no one think that he can get any of these things without work. One fault of exhortations to home gardening is in omission of the secret of success, which is work. Home garden products are the translation of work into their form and substance. They are a distinct addition to your role of toil—whatever that may be. It may be a change of work, which some psychologists call recreation, but it is work nevertheless, and its reward is wages. If these delight you, you are fortunate and your success will be both an inspiration and a satisfaction. If these distress you, even success may leave you weary for the requirements of your vocation. They may reduce your efficiency in working hours and render your slumber less restful through the trampling of Alpine goats upon your exalted abdomen. Our observation is that the chief exhorters to the transformation of a home outfit into an earning-machine do not practice what they preach. They are prolific of prescriptions which they never have filled for themselves. On the other hand, the men who have the best home-grown vegetables have least to say about them except as a help and joy to those for whom they live to provide; and this is the reward that gives them joy. Unless you can awaken this in the life of a man, his adoption of exhortations to homestead production may lessen his force in his proper work, or, what may be worse, so unbalance his contentment as to turn his home place into a bear garden.

CALLING FOR MORE COLLEGE WORK.

THE most significant demonstration of the practical value of the work in research and instruction now being pursued by our College of Agriculture at Berkeley, is the wide popular call for more of it. It is this, in large part, which made the institution during the earlier years. It is the same attitude, now manifested more widely and clearly, which is underlying its present development. It has now a collective undertaking which requires fuller resources. It always has had

this and it will always have it. On its own part it naturally calls for the means to successfully carry on the undertakings now in hand. Such requirements are large in the aggregate, and it does not participate in the agitation for new undertakings and establishments, but its attitude is, as we understand it, one of obedience—the college will endeavor to carry out all work which is adequately provided for, if such work is reasonable and feasible and germane to its main aims and purposes. It strikes this writer, wholly apart from any connection he may have or have had with the institution, that the line of deciduous fruit research which the Santa Clara Valley is asking the Legislature to provide for is reasonable, and in fact necessary to the promotion of this line of the State's industry. If it is to prevail, however, it must be by the force of the industry, and in answer to its call. Therefore, it is a matter which deciduous fruit-growers in all parts of the State should interest themselves in and declare their desires upon.

The same thing is true of a smaller but still very urgent need of the fruit industries, as declared for by the Napa fruit-growers' convention, viz.: "To provide for experiment and research in the drying, canning and preservation of fruits and the handling, preparation, and manufacture of fruit products and by-products." A law proposed toward this end says that the Director of the Agricultural Experiment Station shall obtain and establish such assistants, equipment, appliances, apparatus, and other incidentals as may be necessary to the successful prosecution of the work within the appropriation specified of \$5,000 per year. Considering the number and variety of the problems in fruit-curing which need to be solved by exact experimentation, the money to be available seems very small, but it may do for a beginning. That, however, is what the fruit-growers' committee asks for, and it should certainly be provided, if the Director of the Experiment Station accepts the charge laid upon him.

By
the Editor

QUERIES AND REPLIES

Inquirer Must
Give Full Name
and Address

Hens and Prunes or Almonds.

To the Editor: On about three acres of my alfalfa the yield is unsatisfactory, due to the slope being too steep to get proper percolation of the irrigating water. I propose to use it for chicken runs. I need shade and am thinking of planting prunes, cultivating a narrow strip on each side of the tree rows and leaving the balance in alfalfa for the chickens. My soil is "Orland fine sandy loam," but it does not take water as readily as that description would imply, and being graded on the strip-check-system I have to irrigate once a week during the hot months. Would such frequent light irrigations be harmful to prunes? As the strip-checks are thirty feet wide it would be too wasteful of space to plant trees only on the levees and irrigate the trees separately by furrows when needed.

Is the equipment necessary to the drying and marketing of prunes too expensive to permit of such a small planting as I am proposing being profitable?

An alternative is to plant almonds, for which the thirty-foot spacing would do nicely and for which, in view of the very slow water percolation referred to, the perfect surface drainage of the levees would be desirable. My preference for the prunes is due to their reaching maturity quicker.

With plenty of alfalfa available will chickens consider themselves under moral obligation to strip the young trees, either almond or prune, of all buds and leaves?—Beginner, Orland.

Thirty feet apart is not a bad distance for prune trees when you use the middles as proposed. If you really wish to get in more trees, plant them 20 or 24 feet apart on the levees—leaving them 30 feet one way. If you wish to let the water down more slowly to get more penetration, put in a few low cross-levees inside the strip, so that they can fill up and spill over from one into the other, etc. If you are careful in use of water the trees will not get too much and ought to do well.

The outfit for curing prunes is not more costly than for other dried fruits. You should have a good machine dipper, but you can get a small size and to offset the cost of that you need no sulphuring outfit. All you will need is trays and a grading screen and common sense enough to make a good product. If you use plenty of that, a small product will be profitable.

Why do you think prunes will come in sooner? We should count prunes a year or two slower than almonds—growing conditions being equally good for both.

With plenty of other green stuff the fowls will not bite the tree foliage enough to hurt. Barring a certain amount of cussedness, a hen likes to have her grub below her nose, as well as a man does. Of course you must not graze too many fowls on the area: that will kill out everything—including the hens.

Slander on California Nursery Stock.

To the Editor: We are always buying new fruit trees for resetting, owing to sour sap on trees budded to peach, apricot, myrobalan, bitter almond root. We see no difference, as to which is best. The trees are always got from the near-

est nurseries to us, which I judge is the best plan, but one of our local agents for some outside nursery has been telling people that all trees grown on home-grown seed are not good, that they are infected with black-knot and other injurious pests, or diseases to which the foreign-grown seedlings are not subject. Some of the people believe so, and others cannot see where the home-grown stocks are inferior or subject to these things. Please tell us whether there is any such difference as claimed and which is best.—V. M., Santa Clara county.

The statement favoring foreign seedlings is false. They are just as subject to diseases as locally-grown seedlings are and will do no better under the rather hard conditions which you must have, if all the fruits you mention are sour-sapped. Besides there are probably no foreign seedlings of apricot, peach and almond in any American nursery. Formerly many myrobalan seedlings were imported, but we doubt if many are now brought in from France. If there are, they have no immunity from disease and they were never introduced with any such idea. The French used to grow them and grade them more cheaply than we, could in this country. Good California nursery stock is better than imported. Eastern nurserymen buy much of their fruit seeds or pits in this State. Your "local agent" belongs in the Ananias club.

Too Much Water and Alkali.

To the Editor: I have land that has very much sub-irrigation and a streak of it is mixed with alkali. I have tried to plant Thompson Seedless, but they died out in July on that streak, for the ground was very wet then—seepage from the ditches, I suppose. How would almonds do on this place, or plums? Is there a way of draining this particular place from subirrigation? I have a ditch that is three feet lower than the level of this land.—J. K., Dinuba.

There is no chance for almonds if grapes cannot stand it. Plums on myrobalan might have a chance—if the alkali is not too strong. Pears would be most likely to hold on, but alkali pears are not first-class. However, it is all guesswork until it can be determined whether the alkali or the water is the worse mischief-maker. More things will stand water than alkali. Are you sure your ditch is working and really drawing the water down to three feet? If the alkali is not too strong such a piece of land is likely to yield more value in beets for stock than in fruit.

Plant-Lice on Hawthorns.

To the Editor: Please advise me the proper treatment of two Hawthorn trees that I have had trouble with. I have sprayed them with nicotine and soap solution without any perceptible benefit. At this season of the year the trees are bare of leaves and show a black coating: that no doubt constitutes the cause of the trouble. What can be done?—P. R. S., Oakland.

The black stuff which you find is not the cause of the trouble—it is a by-product of it. It is a black fungus grown last summer and fall upon the honey-dew exuded by plant lice, which are the

cause of the trouble. You may also see in it shining black bodies, if you examine it with a magnifying glass. These are the eggs of the plant lice from which lice will hatch next spring to attack the new leaves. As these eggs have such resistant shells that it is impracticable to destroy them with a spray which will not also injure the bark, you will have to wait until they are hatching out. Then attack them with the tobacco spray and repeat it in about two weeks to catch later hatchings. Much depends upon spraying early after growth starts and spraying as often as necessary.

Cutworms and Katyids.

To the Editor: What can I do to my peach orchard to keep the cutworms from getting my fruit this year? What is on this twig which I have found on my trees? Is it harmful?—J. H. P., Kingsburg.

If it is really the climbing cutworm which is getting your peaches, the treatment is the bran-arsenic death for them. Take bran 10 lbs., white arsenic $\frac{1}{2}$ lb., molasses $\frac{1}{2}$ gallon, water 2 gallons. Mix arsenic and bran dry. Stir molasses and water together and then mix into bran, making a moist paste. For cutworms and grasshoppers, distribute a handful at base of each vine or tree, or it may be broadcasted. Insects will only eat it when moist. When distributed by handfuls it may be gathered up and moistened again. We wish cut-wormy readers would paste this in their hats and save us from printing it a dozen times a year. Of course you have to tie up the fowls and pet stock while you are putting it out.

The twig has the eggs of a katydid—seed-like bodies in two regular rows. They are negligible.

Split Pits and Smut Balls.

To the Editor: What causes smut in peaches? I have about an acre of my Muirs in a sandy swale and last year half of the fruits were split and had a smut ball in the split and some that were solid had smut. What will control it?—J. R. C., Fowler.

Last year was evidently a bad one for peach splitting. As recently stated in this column, the cause of splitting of the pit and fruit is not known, but it seems to be due to causes which produce abnormal growth, and some varieties are more susceptible to these causes than others. No treatment has yet been demonstrated to be effective. The smut growth is a fungus growing on the juices set free by splitting, and the way to escape that is to prevent the splitting—which no one now knows how to do. Smut in a peach which apparently has a solid exterior is due to entrance of germs through an opening of the stem attachment—which may be too small for anything but a fungus germ to see.

In a Half-stand of Alfalfa.

To the Editor: What can I sow in a half-stand of alfalfa? Will vetches or peas do? I do not like barley.—R. P., Modesto.

It is too late to get vetches or peas enough to pay the cost. They ought to have been started last fall. Besides, it is not easy to get much from these large seeds by simply scratching-in. They require good preparation of the land. Why do you wish to keep your half-stand of alfalfa? Why not go at it now and get the land ready for re-sowing next month, perhaps, in your section? If there is real reason to hold on to a half-stand we would get what more we could by sowing bur clover. It ought to have been done earlier, but we know nothing which would be more likely to catch-in now.

California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau at San Francisco, for the week ending at 5 p. m., January 23, 1917.

STATIONS	Past Week	Rainfall Data		Temperature Data	
		Seasonal To Date	Normal To Date	Max'm	Min'm
Eureka .....	.32	13.84	22.56	50	28
Red Bluff .....	.00	11.02	13.02	62	28
Sacramento .....	.00	6.52	9.73	58	28
San Francisco ..	.00	9.81	11.38	62	36
San Jose .....	.00	6.43	8.25	60	22
Fresno .....	.00	5.21	4.80	58	28
Independence ..	..	..	..	..	..
San Luis Obispo ..	.34	14.37	9.37	60	32
Los Angeles	1.82	9.89	7.14	58	38
San Diego	2.20	6.58	4.69	60	42

Some Experiences in Walnut Budding.

[Written for Pacific Rural Press by I. G. Grundel, Oakdale, Cal.]

[George Grundel, manager of the John Swett & Son's Nursery at Oakdale, has for the last six years been investigating the possibilities of budding walnut trees—both nursery trees and large trees. He has tried out buds of all shapes, sizes, and ripeness, and has worked out successful methods which give uniformly good results. In the article following he sets forth the right way and the right time to do this work.—Eds.]

Having experimented for years in walnut budding, and having budded every two weeks during the season, I have at last hit upon the right way and the right time of doing the work. A statement of my experiences may interest the readers of the Rural Press:

Spring Budding.—Cut budding wood, either two or one year old—the latter must be round wood only—during January. Keep in cold place until the latter part of March, then pack in moist sawdust and keep in a warm place. The early varieties will start sooner than the later kinds, and should be kept cool for a longer time. In this way, by shifting back and forth, you can regulate the temperature so that the bark will slip by the last week in April. Budding can then be done as long as the buds hold out. It matters not if the buds are swelling, as the secondary bud will grow. You may be able to get only a few buds at the time off one strip; return the rest to the sawdust for a week for future use. Take budding wood in the left hand, and with knife make a cross cut one-half inch above and one-half inch below the bud, and then a cut lengthwise from one-fourth to three-eighths of an inch on each side. Carefully peel bud with the blunt part of knife so as not to injure the cambium layer. Hold the bud over the spot without moving and cut across, above and below the bud, then remove same and cut through lengthwise, peel back and slip in the bud. Peel off the loose bark except enough to cover cut, and if the bark is too thick, as in two-year-old wood, level down so the string presses on all portions of the bud. Use two strands of cotton twine and wrap both ways as tight as you can. Insert bud on north or west side. After 15 days cut the string and part of top; after one week, if bud has taken, cut off entire top, leaving 4 to 12 inches to be cut later when bud is growing. This budding can be done in from one- to three-year-old wood 1½ inches thick, or less.

Following is the way I have budded old trees: First, I top the tree, leaving the best suckers to grow, and budding them in August. I have budded a hybrid, 10-year-old black walnut, and lost only one in 20 buds.

Budding in July and August.—July buds will make a growth from one to four feet, but August is the best month if you don't desire a growth that season. Prepare the buds on the tree that you want to use for furnishing buds, by cutting leaves; leaving part of leaf stem, which will drop off in a few weeks, which then can be used as bud, after the scar at the base of the leaf stem has healed. Then proceed as in spring budding.

Questions will be cheerfully answered.

California Peach Growers' Association.

[Written for Pacific Rural Press.]

Out of the 28,000-ton California dried-peach crop for 1916, only 9,000 tons were remaining on the Coast Jan 12, according to Sales Manager A. J. Sturtevant, Jr., of the Cal. Peach Growers Inc. Never within recent times have so few remained at this season. Practically all of these are in warehouses controlled by this Association. Since the holidays are past, business is picking up. The trade has shown appreciation of the Association grades, and the growers' loyalty has been "phenomenal." The Association now controls 85 per cent of the total peach acreage and expects to add at least 5 per cent more by efforts to be made this spring.

Payments for the 1916 crop under the contract were \$70 per ton cash on delivery and \$30 per ton in negotiable interest-bearing notes. The bankers have cashed these notes at their face value with no discount, being content with the simple interest, showing remarkable faith in the organization.

Final settlement for the 1916 crop is yet to come, and there will be a substantial payment to growers in addition to the advances mentioned above. There will also be a divi-

dend on the capital invested in stock of the Association.

Increasing Consumption.—No advertising has been carried on as the raisin and citrus growers have; but next season it is proposed to spend as much per ton for advertising as the Raisin Co. spends for its crop. This is to increase consumption.

Recipe leaflets were hurriedly put out in the rush of last season and have been very effective. A recent letter from a retailer in New York State said he had found two recipe books in a package but couldn't keep them, and wanted more to distribute among his customers. The Association is now preparing a more elaborate one.

Heretofore dried peaches have been sold in bulk, not always presenting clean, attractive appearance. Many are now being put out in family-sized cartons.

Peeled Dried Peaches.—Glass cans filled with cooked dried peeled peaches are on exhibit in the offices, looking as attractive and considerably more edible than the common canned peaches. The recipe books and cartons are designed to make dried peaches eatable. But to a far greater extent, peeled dried peaches

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Mammoth and Gigantic Plums

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are hoped to create insistent demand. They are already proving popular, being now sold to the trade at 11 cents per pound for fancy peeled, as against 8½¢ for fancy unpeeled. The small difference in price is due to the Association's cheap mechanical process of peeling and leaving the dried fruit exceedingly attractive. The common dried peaches are put through a solution which softens and swells the skin loose. The skin is then brushed off.

Growers are invited to send in a catchy slogan to go with all of the advertising of the Cal. Peach Growers Inc., Fresno.

WAIT BEFORE PRUNING FROSTED LEMONS.

[Written for Pacific Rural Press.]

Severely frosted lemon trees whose tops seem to be dead should not be cut back for at least a few months, according to J. D. Salvester of Poway Valley, San Diego county. Some of his trees seemed killed on various sides or all through the tops by a frost about the holidays. These have been left alone; and are already shooting new sprouts near the top, showing how far it is necessary to cut back. There is no harm by letting such trees wait a while before pruning; for if they are dead, they needn't be replanted before spring anyway, and they may be saved.

GOT RID OF BUD-EATING BIRDS.

To the Editor: To get rid of linnets that eat the apricot and peach buds, take ripe juicy oranges cut crossways and dose with powdered strychnine. Rub it into the juice. Stick the pieces on spurs of the trees with juicy side up where the birds can get at them. Last year I baited two dozen trees and picked up over nine hundred linnets. This year they are not so plentiful, but a flock came, so I baited the trees and in four days picked up 340 linnets. Very few of the harmless birds eat the bait.

S. Lynn.

Riverside.

SUMMER ORANGE BLOOM.

[Written for Pacific Rural Press.]

Navels from summer bloom are coarse, like the Australian strain, are light colored, usually green around the navel. They are a month or so later than others, and rather dry. They are unsalable under the Fruit Growers' advertised brands. R. Hefty of Pomona has observed that summer bloom is often the result of cultural conditions that might be avoided. This is especially true if the orchard is neglected too long, after which an irrigation may start the bloom.

PERENNIAL RASPBERRY.

To the Editor: Among my rare fruits is an evergreen golden raspberry, the Rubus ellipticus. This bush is four years old, 14 feet high with a spread of 28 feet. Larger canes are over 2 inches in diameter. It fruits at about four years old. The leaves do not drop nor the canes die back as with other raspberries and it is very ornamental. The bush from which mine was propagated has fruited very heavily for several years. It stands about the same degree of frost as the orange.

Watsonville. C. H. Hughes.

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Plant Ascolano Olive trees and grow large ripe pickling Olives, which ripen early; meet with ready sale and demand fancy prices;—yes, a "premium."

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The Ascolano (Queen Olive) often attains a size equaling a French Prune, to which it is similar in shape. The tree is a strong grower and a good bearer. Fruit ripens in October, thus escaping any probable early freeze.

I have a few thousand trees of this excellent variety, yet to offer this season. Am booking orders now for either immediate or later delivery, and you can not go amiss in placing your order at once, as present prices will no doubt be advanced later on in the planting season.

Write me NOW,—before you lay this Pacific Rural Press aside—stating number of trees wanted, and prices will be quoted you promptly.

Can also supply choice trees of MISSION and MANZANILLO varieties. These are propagated from the best producing strain of full-bearing trees in the country—are straight, clean and thrifty; grown in a loose, sandy loam soil, producing the finest root system obtainable; they will make a quick start and a vigorous growth, and come to bearing early. Prices quoted of any number desired. WRITE FOR SAME.

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Your order for Almond trees should be placed soon. The demand will evidently exhaust the available supply, early in the season. As yet, can supply choice trees of all standard varieties. Clean, thrifty, well-rooted stock—at right prices.

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Status of the Fig Industry in California.

[From an address by Prof. J. Elliot Condit, University of California, at the Fig Growers' Conference at Fresno last week.]

While only three or four varieties of figs are grown in this State for drying, a very large number of varieties are grown for table use. The many varieties differ in their characteristics according to the varying climatic conditions in different localities. When we consider that there are hundreds of varieties, many of them bearing several crops in a year, the figs of each crop being distinct from the other, and in some cases the color changing when the fig wasp is present, and to all this confusion add the thousands of seedlings which have been widely distributed by the U. S. Dept. of Agr., one can get some idea of the confusion which exists. Prof. Condit of the University of California proposes therefore to make a thorough study of the systematic pomology of fig varieties. At the Plant Introduction Gardens at Chico there is a collection of some 80 varieties, 44 of which are from the Chiswick list. J. Leroy Nickel on his estate at Menlo Park has probably the largest collection of varieties in the State. Many of the most tender are grown under

glass. His list includes all the varieties collected by John Rock and by Felix Gillette; all of the U. S. Dept. of Agr. introductions, all of those of the Royal Horticultural Society of London and lists from several of the large nurseries in France. Prof. Condit has already made accurate pomological descriptions together with careful photographic records of 131 kinds of figs from these collections.

Dried Figs.—There is very little really accurate or genuinely scientific information available. No one knows the precise relation between climate and dried figs. The interrelation between climatic conditions and the life history of the fig wasp is not well understood. The University has therefore undertaken a comprehensive study of the conditions under which dried figs are produced. This includes a study of the effects of low temperatures on the trees or winter killing; the effects of high temperatures on the fruit or sunburn; the effects of soil moisture and atmospheric humidity on the fruit or souring, and the causes which produce splitting. An investigation is also to be made of the present methods of harvesting, drying, dipping, sulphuring, packing, and the control of insects and mites in the stored product.

Capri Figs.—Since the successful establishment of the fig wasp in California the planting of Smyrna figs has been steadily increasing. Many foreign varieties of capri figs have been introduced into this country and a great many seedlings have originated here. The climatic conditions in California vary so widely that the capri figs act very differently. A variety which matures proficchi figs at Fresno in June may mature its fruit a month later somewhere else. A variety which harbors the fig insect throughout the year in one locality may lack continuity of cropping and thus allow the insects to die out in another locality. One variety is especially good for the mamme crop while another is especially prized on account of its proficchi crop. It is desirable therefore that sets or collections of varieties be worked out which will provide a continuous breeding ground for the insect. There is very little reliable printed information on this important subject available to the growers. Prof. Condit has undertaken therefore to make a careful study of the life history of the fig wasp on every variety of capri fig available and under different climatic conditions. The effect of caprifigation on Adriatic and other figs besides the Smyrna needs to be studied and measured more accurately than has been done heretofore. The number of insects harbored as well as the amount of pollen present in different varieties varies greatly.

It will probably be one or two years before the results of these investigations begin to appear as bulletins, but pending that time we are always glad to correspond with growers, giving them the latest information and results of our experiments. We wish our offices to become to a greater extent a clearing-

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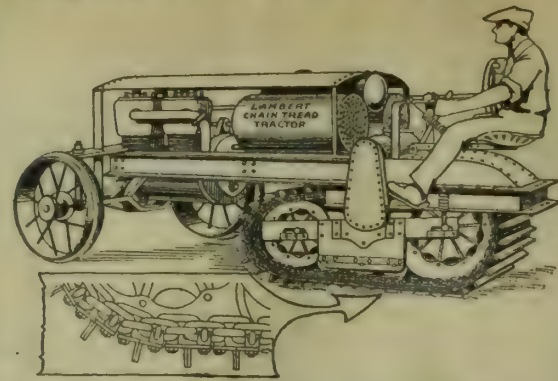
EARLY RIPENERS

THE EHMANN OLIVE CO.

Oroville, Cal., Nov. 17, 1916.
Mr. W. A. Hayne, Box 461, Marysville, Cal.
Dear Mr. Hayne: Answering your kind favor of the 15th, I am enclosing herewith photograph of some of this year's fruit on the Fogg grove, and you will note that they are above the average Mission. We also were able to harvest this entire crop before the frost, which shows that they are early ripeners.
We will be glad to keep in touch with you on this matter and if we can be of any further service, don't hesitate to let us know.
Yours very truly,

I propagated the Fogg orchard thirty years ago. The origin of the Fogg trees was directly from the old Mission at Santa Barbara. The trees I have now for sale are full brothers to the Fogg olive trees, and, like the Fogg trees, they are all propagated from the large size cuttings.
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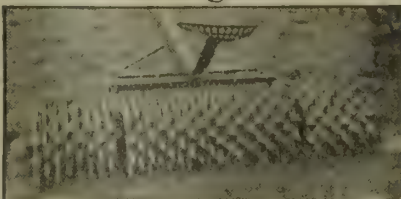
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house of reliable fig information.

Our Tussle with Turkey.—The general increased interest in fig culture began about 1912 before there was any idea of a European War. Rather extensive acreage had been planted when the war began. The entrance of Turkey into the war and the blockade of the port of Smyrna stopped all importations of Smyrna figs into this country and greatly reduced the amount of figs available

for American markets. Before the war the United States usually imported about 10,000 tons of dried figs valued at the port of export at about one million dollars. Three-fourths of these came from Smyrna and the other fourth from Spain, Portugal, Greece, and a few from Italy. The British blockade did not include Turkish ports or interfere with fig shipments until 1916, when they were cut off entirely. We have secured some extra figs this year from Portugal and a few from Greece, but the total importations from all sources amounted to only 3576 tons, coming mostly from Greece and Portugal. We are therefore largely limited to our own fig crop, the size of which we do not know accurately, but which probably amounts at present to between 6 and 7 thousand tons with prospects of large increases in the near future when recently planted areas come into bearing. It is pretty clear, therefore, that most of our Eastern friends will have to eat California figs this year or go without. There is therefore a positively unique opportunity presented to the California fig industry.

USING VINES' RESERVE FOOD FOR GRAPES.

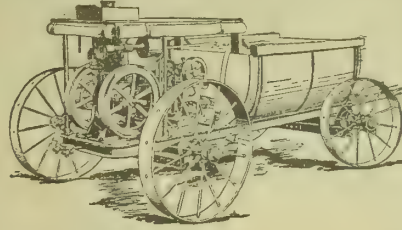
(Continued from First Page.) bearing ever since; and the original canes are some inches in diameter. At many of the nodes, they have rooted; and the annual pruning has made great warty heads along the vines.

The fruit is well spread out to sun and air. There is practically no mildew; though only one or two sulphurings are given. The grapes are not packed so close together that many berries must be shattered off in the picking. Wherever vines are too compact and foliage too thick, there coulure is worst. Though Mr. Hawley thinks that if he were planting a young vineyard, he would put the vines closer together, and prune in the ordinary way on account of the cultivation, his neighbor, Thos. Ballantyne, who has tried it, believes "there is no question as to the desirability of pruning this way on strong vines in strong soil." Nor did they gentlemen recommend it for weak vines in strong soil." Nor did the think it would work so well on old vines. Mr. Ballantyne pruned $\frac{3}{4}$ of an acre of Muscat grapes this way for three years and got over 2½ tons of raisins per year from the piece.

A move has been started by prominent farming interests in the Sacramento Valley to get the legislature to pass favorably on a weed bill which is being prepared. The bill calls for a yearly appropriation of \$5,000, a part of which will provide a yearly salary of \$2,400 for a deputy weed commissioner who will work under the direction of the State Horticultural Commissioner.

"Indian Corn and Its Culture" is the name of a bulletin being distributed free by the American Agricultural Chemical Co. of Boston, Mass. It was written by Dr. H. J. Wheeler, formerly director of the R. I. Expt. Sta. It goes at length into the requirements and the methods of cultivation practiced in the corn-growing States, and will be sent free.

Buying a Sprayer is like buying anything else. You might pay \$5.00 for a \$2.50 hat, but do you hope to ever buy a \$5.00 hat for \$2.50? When you buy a **HARDIE POWER SPRAYER** the price will be right, the sprayer will be right, and your satisfaction won't wear off with the years.



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The "Nitragin" Company

Waterloo, Iowa

Bees Help to Make Prunes.

The division of pomology of the University College of Agriculture made an interesting experiment in the Santa Clara valley during 1916 to determine the relation of bees at blooming time to the setting of prunes. Details of results are given by A. H. Hendrickson, instructor in pomology in University Bulletin 274 just issued by the Station at Berkeley. The following is an outline of the experiment and the conclusions:

Two pairs of adjoining French and Imperial prune trees, as nearly as possible of the same age and size, were covered with tents of white mosquito bar. They were approximately 40 feet long, 25 feet wide, and 16 feet high, and constructed as nearly insect-proof as possible. Both tents were completed before any of the blossoms opened. As soon as 25 per cent of the blossoms had opened, a hive of bees was placed under one tent and kept there throughout the blossoming period (about five days in the season of 1916). All insects were excluded from the second tent, and a careful watch maintained to see that none entered. The tents were taken down after the petals of the blossoms had fallen and there was no danger of pollen being brought from outside sources to the trees in the experiment.

As soon as it was possible to tell how much fruit had set, it was evident that the French prune tree under the tent with the bees had set a much heavier crop than that of the best tree exposed to normal conditions. The French prune tree under the tent from which bees and all other insects were excluded, had set a very light crop. For some unaccountable reason, the Imperial tree under the tent with the bees set only a light crop of fruit. The Imperial tree under the tent from which all insects were excluded set but a few scattering fruits.

All trees were carefully watched throughout the season. At an early date it became necessary to prop the French prune tree which had been under the tent with the bees, to prevent serious damage to the tree by breaking the limbs. The difference in the amount of fruit set by the French prune which had been under the tent with the bees and the amount borne on the adjoining trees, all in the same state of thrift and having been given the same care, was easily apparent to even the casual ob-

server. Indeed, it was quite marked.

Approximately one thousand blossoms were counted and tagged on each tree. The record of the fruit resulting from these blossoms was kept, and from these results the percentage of fruit to set and mature was calculated. The following table gives the percentages of fruit that actually matured:

	No. of blossoms	No. of fruits in count April 1, 1916.....	Per cent. that matured Aug. 1, 1916.
French, with bees..	1069	193	18.05
French, no bees....	1058	11	1.04
French, outside set.	9891	359	3.59
Imperial, with bees	1080	18	1.69
Imperial, no bees..	1050	0	0
Imperial, outside set	2180	157	7.20

A glance at the table shows plainly that the amount of fruit set per one hundred blossoms on the French prune was much greater on the tree under the tent with the bees than on the trees under normal conditions. Only a very small percentage of fruit matured on the tree which had been covered by the tent from which all insects were excluded. In the case of the Imperial prunes, the tree under the tent with the bees set only a light percentage of fruit for reasons which are not as yet understood. The tree which was enclosed in the tent from which all insects were excluded set no fruit.

Since the results of the experiment have become known, considerable discussion has arisen as to the best method of testing out the work of bees in the various sections. Some growers are preparing to purchase a number of swarms of bees to have them permanently in their orchards; others expect to try to keep the bees in the foothill sections for most of the year, bringing them into the orchards during the blossoming period only; while others expect to try the plan adopted in parts of Southern California, where bee-men having large numbers of swarms are hired to place their bees for a certain length of time in the orange groves. It seems to be the prevailing opinion that the best work would result if the bees were brought in from some outside district and scattered about the orchards, about one hive to the acre, during the blossoming period, and then removed. Some of the growers are at present giving the latter plan serious consideration.

Intercrops Among Young Orchard.

[Written for Pacific Rural Press.]

For the first two years of a deciduous orchard's life in Imperial county, H. S. Reed, one of the most successful growers there, thinks cantaloupes are one of the very best summer intercrops. They shade the ground, and the frequent irrigation they require is good also for the trees. In his own orchard, he took off 228 crates of cantaloupes per acre when the trees were one and two years old, and followed them with a winter crop of Bermuda onions. Of these he got 240 crates per acre which sold at \$1.40 to \$1.55 per crate f. o. b. El Centro. The winter crop would be feasible many

years, but summer crops might suffer from too much shade later on.

Exhaustion of fertility is really out of Imperial Valley calculations, for each irrigation brings new silty soil onto the land; so whatever crops can be grown are not likely to injure the trees while water is available.

E. Steiner of the same county planted apricots on alfalfa land and grew 12 tons of watermelons per acre among them the first year among 600 trees. He picked about the same crop from them the second year; and in the third season, he got 50 sacks of spring potatoes per acre.

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Thompsons Grafted on Zinfandels.

[Written for Pacific Rural Press.]

Of the 624 Zinfandel grapevines grafted to Thompson Seedless last spring by H. L. Wood of Stanislaus county, only four failed to grow; and all but about a dozen made fine growth through the season. We saw canes 14 feet long and picked a bunch of withered grapes from the grafts. They bore an average of a medium-sized bunch of grapes per vine in their first season of growth, according to Mr. Wood, who expects half a crop next year. There are 12 or 13 acres of Zinfandels yet, of which 4 or 5 will be grafted this coming spring and the rest later.

The scions were selected in January, mostly from some of Mr. Wood's own vines. Canes the size of a lead pencil made the best growth. They were cut half way between nodes, 8 to 12 inches long, making no distinction as to distance from the base, as the whole thing was an experiment anyway. Perhaps some of our readers have kept track of scions or cuttings from different distances from the base and have noted difference in growth or fruitage. We will be glad to hear from such.

When and How.—Sap was flowing and shoots had started a little when the grafting was done Mar. 26 or 27. The vines were five years old and two to four inches in diameter. It took Mr. Wood and another man 1½ days to do the entire job. They shoveled the dirt away so they could cut off each stump with a pruning saw, six inches underground. Each stump was split across with a wood chisel just enough so that the chisel could be used to pry the two halves of the stump slightly apart to receive the scions. After whittling two flat sides not quite parallel, near the end of each scion, one was put into each end of the cleft, with the thicker side crossing its cambium layer with that of the stock. Then the chisel was taken out, and in most cases the stump cleft closed tight onto the scions. In one case where the vine died, we found that one of the scions had barely started to make a union. One-half of the stump was so nearly split loose that it could easily be spread with the fingers. Except for this weakening, the splitting of the stub does not have the same dangers that accompany splitting the stub of a tree above ground where it often dries out. The clefts were not even trimmed.

No wax was used, but a paper was wrapped around each stub and folded over the top of it to exclude dirt from the cleft, but leaving the scion free.

As seen this winter, the scions had made good unions, their lower buds had sent out strong root systems; and the second buds had sent out one or two canes, many of which are of surprising length and diameter. In a large proportion of cases, both grafts took. Several inches of the top of each graft simply died and remains to show how much bigger this year's canes are.

The vine growth is on the ground now, but tall stakes have been set, and the vines will be put up on wires this winter. The weaker grafts, and the weaker canes on the

grafts that are left, will be cut out in the pruning.

SAVED SMYRNA BREBAS.

[Written for Pacific Rural Press.]

"I have had a very good crop of Smyrna figs this year, and my trees are only four years old," writes E. H. Erickson of Imperial county. He saved his breba crop last spring because when the figs were receptive

in the last part of April, his capri-figs were swarming with the insects necessary to pollinize them. The pseudocaria capris were ripe at that time and other varieties followed, bearing figs through the whole year so there are five to seven generations of the insects per year, according to Mr. Erickson. The Smyrna brebas ripened in May.

SULTANA TRELLIS.

To the Editor: What is the proper height to trellis Sultana grapes to get best results in fruit?—J. C. G., Wildomar.

The same as Thompson Seedless, two wires about three and five feet above the ground, the top wire being on top of the stakes to support the weight of fruit. See our Thompson article in issue Dec. 16, 1916.

C. W. Ward of the Cottage Garden Nurseries, Eureka, has been stopping in San Francisco for some weeks while getting shipping arrangements made. He anticipates a very heavy output of bulbs and ornamental stock this season and has opened a branch plant near San Jose.



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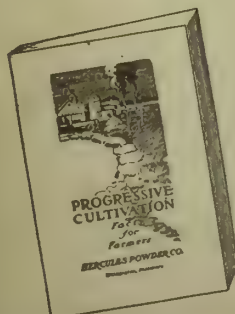
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Farm Adviser Work in Solano County.

[From annual report of J. W. Mills, Farm Adviser, Suisun.]

There are at the present time in Solano county practically no orchards being fertilized excepting a small area on which home-made stable manure is being used. This office has now under way demonstrations in seven different orchards, including Suisun and Vaca Valley. These include old orchards and those just coming into bearing. As it takes two or three years to make a practical demonstration and much time and patient record-keeping to get accurate data, the grower fails to get anywhere in the work. With the completion of this work, the growers will have definite knowledge as to how and what to do to increase the productiveness of their orchards.

Liming experiments on the grain lands near Rio Vista and Vallejo have been started, it having been discovered by this office that some of the fields even on the tops of the hills in the vicinity of Benicia and Vallejo have an acid soil which accounts in part at least for the light yield of grain and hay in those particular fields. Fertilizer experiments on the adobe lands near Rio Vista are being carried on to determine if the yields of wheat can be profitably increased by this method. New forage crops for the marsh lands are being introduced and tried. Fertilizers and lime demonstrations on the marsh lands are under way to determine if certain deficiencies in grain production can be corrected.

The rice demonstration at Miller's Station showed that rice culture in that section is as precarious as growing other grains, though a low yield of rice is reported from all sections of California.

It has been determined that the artichoke thistle can be exterminated by the application of distillate. Salt will do the work also if properly applied, but it has been found impracticable to get labor to persistently do it properly.

A Farm Land Loan Association has been established with duly elected officers, serving the north and east section of the county and covering loans to the amount of \$95,000. Two other associations are about completed, serving the western portion of the county and the marsh lands and covering loans to about the same amount.

The office has secured the services of thirteen government men for field investigations, has called the attention of the Federal Government to the existence of Hessian fly and stalk borer in the wheat-fields of Rio Vista and Vallejo with the result that a Federal expert is now located at Martinez to make a thorough investigation for the control of these insects.

One of the most important undertakings of the office is the organization of a swine breeders' association for the county with the object of securing a more uniform grade of stock and a co-operative marketing agency.

Through the educational work of specialists secured by the office, follow-up work and co-operation with the local veterinarians, hog cholera has been practically wiped out of the county, there having been but one

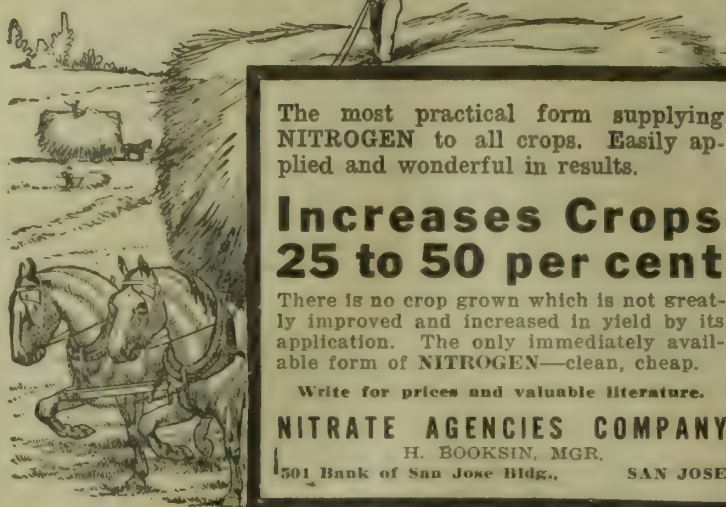
individual case of this disease located during the year.

Improved strains of wheat and barley have been placed on eight different farms in the county. There are two varieties of wheat and two of barley which have proved superior to all others at the State Farm at Davis. One is a selection of California-bred barley that yielded much heavier than any other variety and gives promise of making an excellent brewing barley, weighing 125 to 129 pounds per sack.

Some of the organizations formed last year in California by the aid of State Market Director Colonel Harris Weinstock, are: Peach Growers' Association, Poultry Producers of Central California, Poultry Producers of Southern California, Pacific Rice Growers' Association, California Associated Olive Growers, Delta Potato Growers, Northern California Fish Exchange, Western California Fish

Exchange, California Hop Growers' Association, State Distribution Bureau for Citrus Fruits, California Beekeepers.

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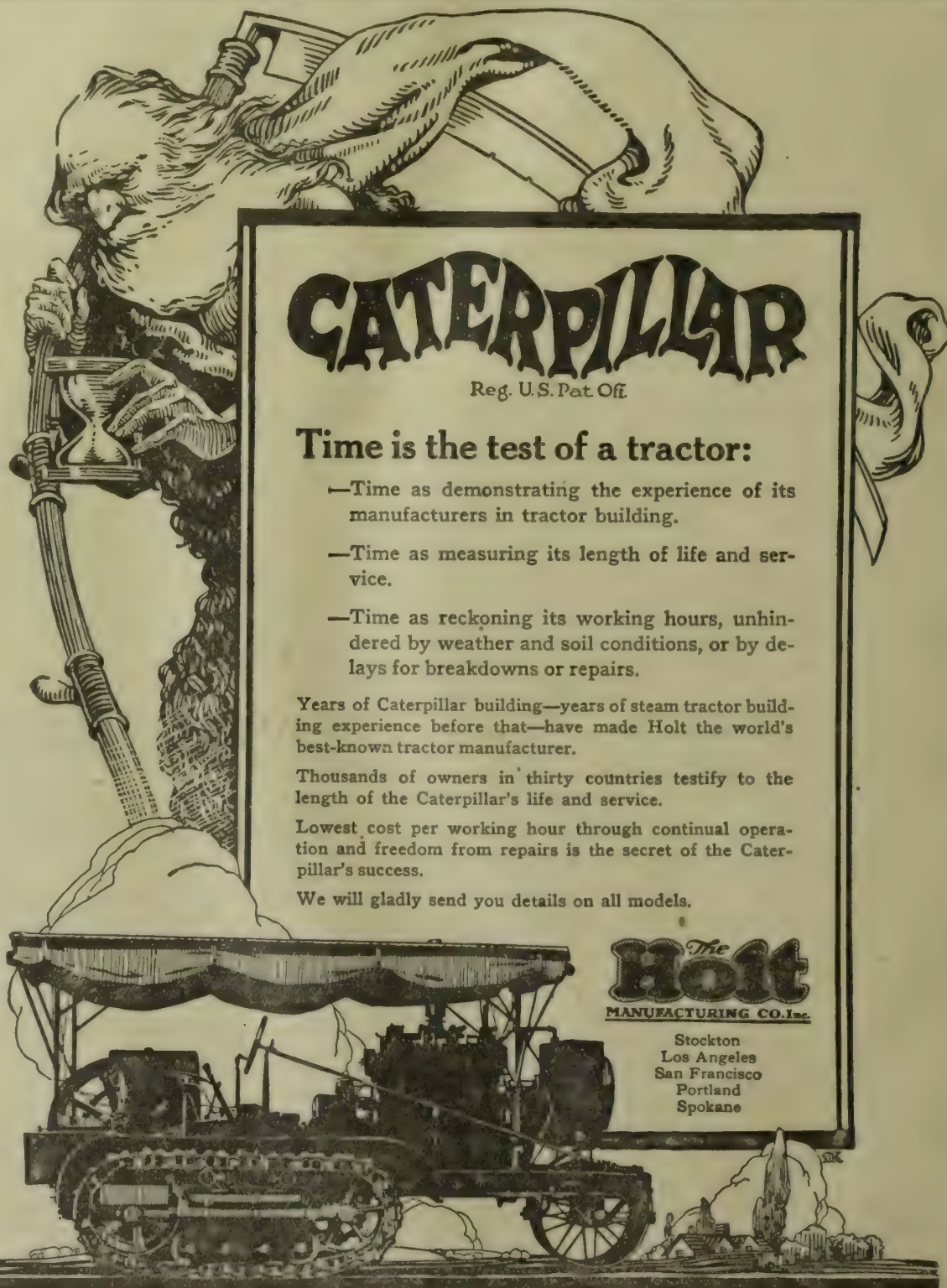
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BERRIES, small fruit and
Cactus. Write to
J.B. WAGNER
Rhubarb-Berry & Cactus Specialist
PASADENA, CALIFORNIA

REDWOODS

REDWOODS
(Sequoia sempervirens)
Chapultepec Cypress
(Taxodium)
The above are first cousins and
make the finest trees in
California.
SPECIAL OFFER:
2 ft. 40c 3 ft. 65c
4 ft. 1.00 5 ft. 1.50
Write for Prices
On Other Ornamentals
PIONEER NURSERY
DEPT. 3, MONROVIA, CAL.

**CHUBBUCK'S IDEAL
GOPHER TRAP**
Larger than runway;
jaws pull rodent in;
catches large or small gopher and holds it.
Farmers say it's worth dozen other makes.
Big sales. Price 50c. If not at your dealer's will send
it to you postpaid; 2 for 95c; 6 for \$2.70; 12 for \$5.10.
Money back if you are not satisfied. Free circulars.
E. J. Chubbuck Co., Dept. B, San Francisco, Cal.

SWEET POTATO ORCHARD INTERCROP.

[Written for Pacific Rural Press.]

A good income has been made for
the past three years since orange
trees were planted on the O. Hil-
bers ranch in Orange county, from
sweet potatoes planted each spring
between the rows on about 2½ acres
and other vegetables, etc., in other
parts of the orchard. The sweet po-
tatoes yielded about 1500 pounds
per row across the 20-acre piece.

Irrigation of the sweet potatoes
did not interfere with that of the
trees, for there were only four rows
in the 24-foot spaces between tree
rows. Water was run between sweet
potato rows and in three furrows be-
tween them and the trees on each
side. The soil is sandy with a hard
bottom six feet down.

Tubers were planted in a hotbed
some two months before they were
planted in April or May after frost
danger was over. If the plants get
too large, cutting them back does not
hurt them.

Ridges were made 30 inches apart
and the plants set on these about 16
inches apart. They were irrigated
and cultivated about six times. The
September irrigation for trees was
run through the outside furrow, but
not among the potatoes, for digging
proceeds from September until late
October whenever prices are good.
The vines continue green until frost
in November if not dug before; but
if frosted, should be cut off from the
sweet potatoes at once.

Ordinary potatoes will be grown
this year because they can be dug
earlier. Alfalfa has been grown for
two years in three centers to feed
the cow. It is kept several feet from
the trees and checked so it can be
irrigated independently. Furrows
outside the alfalfa supply water for
the trees.

EDUCATIONAL RICE CAM- PAIGN NEEDED.

[Written for Pacific Rural Press.]

The average consumption of rice
in the United States per inhabitant
during the year 1915 was 7 lbs.,
during the year 1916 it was but 5½
lbs. This reduction in consumption
is remarkable in view of the greatly
increased cost of other cereals and
reduced price of rice, all of which
demonstrates that if the California
rice growers are to obtain better
prices for their product they must
undertake an educational campaign
covering this State and adjacent ter-
ritory, which is the logical market.
Special attention should be given to
teaching our own people and those
of neighboring states how to prop-
erly and attractively serve California
rice, which is somewhat different
from that produced in the Southern
States and the Orient. The rice
growers of the Southern States have
raised a fund of \$100,000 to be used
to finance a campaign to encourage
the use of rice as a food. There are
at present about 10,000,000 sacks of
rice on hand in the United States.

A committee of the Placer County
Farm Bureau has been appointed to
look into the practicability of farm-
ers there leasing a lime deposit near
Clipper Gap. If this could be se-
cured it would solve the problem of
high-priced lime in that county.

Bigger Crops at Less Cost from Better Disking

All easily possible with
the right tool. Bigger
crops always follow bet-
ter diskling; and thorough
cultivation with one trip
over, instead of two, is a
worth-while saving in
cost. Are you using the
machine for better disk-
ing—that is the CUTAWAY
(CLARK) Double Action

Disk Harrow—the original double action
harrow? It's the farmer's greatest time
and labor-saver in his most important work.

Disk Before Plowing

as well as after, with a CUTAWAY (CLARK) Double
Action Disk Harrow; makes plowing easier, gives
better results. Every particle of soil is thoroughly stirred
because the rigid frame—a patented feature—forces the
rear disks to cut just between the furrows of the fore disks.

Cutaway Double Action (CLARK) Disk Harrows

penetrate deep because of the cutlery steel disks forged sharp.
The dust-proof, oil-soaked, hardwood bearings and perfect
balance make it noted as a light draft implement. If your
dealer hasn't the genuine CUTAWAY, write us direct. Send
today for copy of new free book, "The Soil and Its Tillage."

The Cutaway Harrow Company

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Maker of the original Clark
Disk Harrows and Plows



1917 Seed Catalog

NOW READY

IT IS FREE—mailed on request. It tells
how and when to plant garden, flower and
field seeds.

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We now have a fine
stock of Oregon-grown
AMERICAN WONDER and EARLY ROSE. WRITE FOR
PRICES.

ALFALFA SEED

We always lead in this item.
Send for samples and prices of GRIMM,
HAIRY PERUVIAN, TURKESTAN and
COMMON CHILIAN ALFALFA SEED.

LONG RED
MANGEL—
for
stock feeding
Lb. 50c
10 lbs. \$4.50

We Pay the Freight
To All Points

Valley Seed Co.

506-510 Jay St.

Sacramento, Cal.

Corn and Oats, Two Crops a Year.

[Written for Pacific Rural Press.]

Corn and oats keep ten acres busy summer and winter for John Edwards of Stanislaus county. The corn last fall filled a 120-ton silo heaping full and about three tons were left over. In December, 1915, he plowed a five-year alfalfa field, ran a smoothing harrow over it once, sowed vetch and oats at the rate of about 12 pounds to 90 respectively, and disked it in. Some of the vetch came up, but it got discouraged. Mr. Edwards thinks the ground was too soft and light for it.

About 3½ tons of oat hay per acre were cut late in May or early in June. It was taken off slowly, so that by the time the ground was irrigated and plowed, it was about June 20. Deep trenches were made where the corn rows were to be, using a shovel somewhat like a lister. A lister would be the right thing, but the investment then was not desirable. The corn was drilled into the bottoms of the furrows. When it was

knee high, it was irrigated thoroughly; and a cultivator turned dirt into the furrows, thus putting the roots deep underground, where they would have most moisture. Another irrigation came when the corn was beginning to silk and tassel. It was then too tall to cultivate and was laid by till cut for silage last October. There are spots here, as quite generally in California, where hardpan prevents the rise of underground moisture, and on these spots some of the corn leaves had dried up. In general, it was green when cut.

After the corn was off this fall about 100 pounds per acre of beardless barley was sowed late in November. Mr. Edwards hopes this will make hay two weeks earlier than the oats, and allow him to get the corn in earlier next year. In the year following, something else will be put onto this land, as he wants to rotate crops to prevent wearing out the soil.

Winter Truck Crop Estimates.

Frosts have seriously injured all tender vegetables in several districts of Florida, according to the Bureau of Crop Estimates of the U. S. Dept. of Agr. Much of the early lettuce in these sections is reported to be going to seed, but the largest part of the crop has been already shipped. Cabbage shipments are already under way from most districts, also celery.

One district in Virginia reports only about 65 per cent of a crop of cabbage and spinach, due to frosts. Strawberry acreage is reported short and outlook is for a short planting of potatoes.

Texas reports say 60 per cent of the cabbage crop was killed by December freeze and that lettuce will be somewhat later than usual. Ber-

muda onion plantings are not as early as usual because of weather conditions.

On Jan. 1 the cabbage crop of the large producing States was estimated at 81 per cent of normal, California's crop being set at 89 per cent. Celery was estimated to be 90 per cent of a full crop, the California crop being placed at 82 per cent. Lettuce was considered 75 per cent of a full crop, California's crop being estimated at 84 per cent. Onions indicate 87 per cent of a full crop, California having a 92 per cent crop. The report estimates the tomato crop of the various States at 87 per cent, that of California at 92 per cent, while strawberries average 88 per cent of crop for all the States as against 98 per cent for California.

Broadcasting vs. Drilling Grain.

[Written for Pacific Rural Press by E. W. Crow, Patterson.]

Several years ago I noticed that grain sown with a drill gave not always as good a stand as grain sown broadcast at the same time. The best reason for this I know is that most of the grain here is sown on summer fallow from Oct. 15 to Dec. 15, and several inches of the ground is generally dry near the top. Of course on good summer fallow there is considerable moisture down from 3 to 6 inches. Now, when the grain is sown with a drill it is covered up all the way from 1 to 2½ inches, and when the little showers of rain come the ground often wets down just deep enough to rot the seed drilled in, whereas the grain sown broadcast is not covered up so deep, and the shower wets it one day and the next day the sun and wind often dry the top enough so that the broadcasted grain does not sprout or rot. Now, two farmers I know who are both successful and practical have farmed here 30 or 40 years, and have made farming pay on a large scale. I notice they sow broadcast, whereas they used to sow with drills altogether.

You ask how much longer grain will be sown in this locality. That

depends altogether on circumstances. The majority of the grain is sown before Dec. 15, but I have seen good wheat grown here that was sown as late as Mar. 21. It all depends on the spring weather.

BLACKEYES FOLLOW OATS.

[Written for Pacific Rural Press.]

On the 7½-acre place in Stanislaus county belonging to J. W. Buchanan are 1800 two-year Thompson vines planted 8 by 9 feet apart, and open land enough to make about five solid acres of beans including two rows planted in the centers between grapevines. The bean check last season was \$319.19. The oat hay grown on the open part before beans were planted, sold for \$90. The oats had been planted Feb. 9 and were cut in May. The ground was flooded and about 100 pounds of beans planted. The beans were cultivated once this year. They were planted three rows per grape row last year, not cultivated at all, and yielded less than this season.

G. Katsura is installing a Layne & Bowler turbine centrifugal pump in his well near Parlier.

PURE ANIMAL MATTER
AMMONIATES



FOR CALIFORNIA SOILS

An ounce of Fertilizer Prevention is worth a pound of cure. It is easier, better and cheaper to keep your soil fertile and productive than to attempt to restore it after it has been exhausted by continuous cropping. Don't wait till your crops begin to fail. Use **Gold Bear Fertilizer---NOW!**

GOLD BEAR FERTILIZERS are made from animal products that contain the elements necessary to meet California soil conditions and crop necessities.

LET US HELP YOU SOLVE THE PROBLEM OF BIGGER and BETTER CROPS

Address Fertilizer Dept.

WESTERN MEAT COMPANY

San Francisco,
CALIFORNIA

**MORSE'S
NEVER
FAILING SEEDS**

For

Farm and Field

We are Specialists on Highest Quality

**Alfalfa, Vetch, Clovers
Peas, Grasses, Corn and all
Farm, Field and
Vegetable Seeds**

It always pays to get Morse's.

On sale by all leading dealers or
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Seedsmen

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QUOTATIONS PROMPTLY FURNISHED

SEEDS Planting Time is Here.

Send for Our *Free Catalog*
With "HINTS on GARDENING" and be Prepared.

Morris & Snow Seed Co.

439 S. Main St.

Los Angeles, Cal.

EUCALYPTUS TREES, SEWERS, AND SIDEWALKS.

To the Editor: Many eucalyptus trees in San Mateo county are being destroyed as being harmful to sidewalks, pavements, and sewers. Yet we see many sidewalks three years old, beside eucalyptus trees, and unharmed. Back in the East I have known of pavements under which all tree roots died. We would like to save our eucalypts.—L. A. B., Lomita Park.

[Answered by Supt. John McLaren of Golden Gate Park.]

Any large tree with strong, spreading roots will have a tendency to crack sidewalks. Unless the roots are pruned they will spread under the concrete.

Regarding the claim that, wherever eucalyptus roots are covered with a pavement five or more feet wide, they do not put out feeders, I am sure this is a mistake; but, where the stems of the eucalyptus trees are buried to a depth of four or five feet, it is sure death to the tree.

If there are any eucalyptus roots in the sewers, it is on account of defective sewer pipe, either in the laying or cementing the joints. The only way that I know of to keep roots out of sewers is to build good sewers.

FIGHT WIREWORMS BEFORE PLANTING.

To the Editor: Can you tell me of a remedy for keeping the little wireworms from eating potatoes while they are growing? Can you advise me where I can get American Wonder potato seed?—J. H. B., Modesto.

[Answered by W. V. Shear, Potato Specialist, Stockton.]

[The best time to fight wireworms is before the potatoes are planted, that is, get rid of the worms before putting the field into potatoes. The wireworms are most plentiful on old sod and the land should be plowed deeply and turned up to the air and kill all vegetation to drive the worms to other pastures. It is very difficult to entirely eradicate these animals the first season where land is seriously infested with them, in fact they are one of the difficult pests to handle, it being possible to protect potatoes from almost every other trouble. Thorough fitting of the land by plowing and disking several times, keeping it thoroughly dried out during the summer, seems to be the most satisfactory way of dealing with the wireworm, and this treatment is likely to be profitable also in obtaining better crops—that is, larger yields.

Nearly all dealers in potatoes handle the American Wonder.]

One of the largest land development propositions for 1917 will be that just commenced by the Layne & Bowler Corporation for the Sacramento Valley Colony Company of a large tract of land in Glenn and Tehama counties. This property is rapidly being subdivided and an individual pumping plant is being placed on each subdivision. It is expected that by the end of 1917 one hundred pumps will be delivering water for as many ranch owners on this tract.

Fresno county proposes to get rid of their ground squirrels. The county supervisors have passed an ordinance condemning all ground squirrels to death and will appoint a squirrel inspector to enforce the law.

JOHN DEERE IMPLEMENTS

BETTER FARM IMPLEMENTS AND HOW TO USE THEM

BOOK FREE 156 page reference book—tells all about a complete line of farm implements and how to adjust and use many of them. A practical encyclopedia of farm implements. Worth dollars.

Describes and illustrates Plows for Tractors; Walking and Riding Plows; Disc Plows; Cultivators; Spring Tooth and Spike Tooth Harrows; Disc Harrows; Alfalfa and Beet Tools; Farm and Mountain

Wagons; Manure Spreaders; Inside Cup and Portable Grain Elevators; Corn Shellers; Hay Loaders; Stackers; Rakes; Mowers and Side Delivery Rakes; Hay Presses; Kaffir Headers; Grain Drills; Seeders; Grain and Corn Binders.

This book will be sent free to everyone stating what implements he is interested in and asking for Package No. X-152.

JOHN DEERE, MOLINE, ILL.

Van Brunt Grain Drills



Van Brunt Drills plant any small seed.

Amount sown per acre easily regulated.

Direct, double, gear drive from the continuous axle.

High-grade discs with bearings guaranteed to last lifetime of drill. Scrapers keep discs clean.

Pressure springs individually adjustable to make uniform depth furrows.

Either single or double discs.

Grass seeder attachment which will drill or sow broadcast can be furnished.

Van Brunt Drills are particularly noted for their adjustable gate force feed. Each feed cup plants exactly the same amount. The seed is compelled to leave the seed box in even, continuous streams without bunching or choking up. All the ground is seeded.

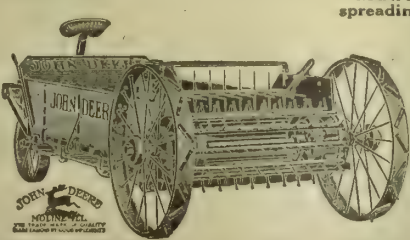
The Van Brunt Single Disc is the first successful single disc grain drill with closed delivery. The seed is protected by metal seed tubes, disc openers and the disc boots until it reaches the bottom of the furrow.



John Deere Spreader

The Spreader with the Beater on the Axle

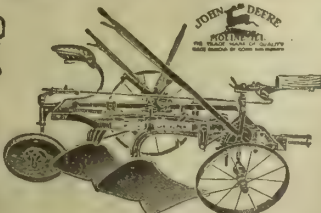
Mounting the beater on the axle simplified the construction, eliminated troublesome parts and made possible a successful low-down spreader with big drive wheels. There are no shafts to get out of line, no chains to cause trouble, and no clutches to adjust. The only spreader with beater and beater drive mounted on axle.



Low down, with big drive wheels out of the way. Easy to load. Revolving rake, driven by manure moving toward the beater—no bunching of manure. Ball bearing eccentric apron drive—a new and exclusive driving device. Makes uniform spreading certain.

Wide spread attachment for spreading seven feet wide can be furnished for the John Deere Spreader. No chains or gears. Quickly removed.

New Deere Light Draft Gang Plow



The New Deere Gang is the most widely used plow of its type.

It is light draft, durable and is equipped with John Deere bottoms, known all over the world for superior work, easy scouring and light pulling qualities. It cuts and turns full width of furrow.

A simple, practical foot lift and auxiliary hand lift lever—easy to raise bottoms out of the ground.

John Deere Quick Detachable Shares—great labor and time savers. Share can be taken off easily, only one nut to remove.

For twenty years the New Deere Gang has had the good opinion of enough farmers to make it the one best seller—

And, today, it is the same plow it was twenty years ago, with the usual minor refinements added.

Correct in design, always representing the highest development of the plow-maker's art, the New Deere Gang is a leader, and has been every single year for twenty years.

Go to your John Deere dealer's and look this plow over—you will readily see why it is such a popular plow.



John Deere Plows for Light Tractors

So far as quality of John Deere Plows for Light Tractors is concerned, they are built for the farmer who realizes that it is business judgment to buy a high grade tractor plow. Don't forget that a tractor plow is not an everyday purchase.

John Deere Plows for Light Tractors are noted for their high grade work in the field—the real test of tractor plow value.

Before you make your purchase, be sure to see John Deere Plows for Light Tractors. A careful purchase means a permanent saving.



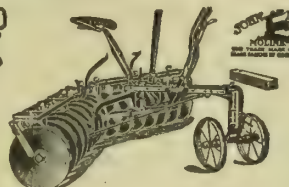
The John Deere Light Tractor Disc Plow works with any standard tractor—the hitch is adjustable.

Three or four discs. Discs have a double setting. Taking care of all conditions where a disc plow can be expected to operate.

Adjustable scrapers keep discs clean and lighten the draft.

No choking in trashy ground—frame is high, beams are dropped, which gives good clearance under the frame, and there is plenty of room between the discs for trash to pass through.

John Deere Model "B" Disc Harrow



Using a disc harrow before plowing pulverizes surface lumps, works trash into the seed bed and prevents

the escape of moisture. Then when the furrow slice is turned, the trash decays rapidly and no large air spaces are left between bottom of furrow and the turned furrow slice. Water in the subsoil can make its way into the seed bed and plant roots can penetrate to deeper soils.

Discing after plowing removes the weeds, and makes the seed bed compact, but not hard. The discs break up lumps of soil.

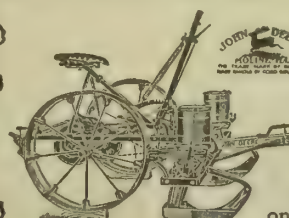
Discing after plowing removes the weeds, and makes the seed bed compact, but not hard. The discs break up lumps of soil.

Flexible—only that part of the Model "B" harrow passing over an obstruction is lifted out of the ground.

Rear section can be furnished to make a double action harrow.



John Deere Corn Planters



Accuracy in a corn planter means uniform drop—number of kernels the same in each and every hill.

If the planter misses only six kernels in every 100 hills, the loss in yield is nearly two bushels per acre.

Accuracy in planting has been the main object in designing John Deere planters. One of the many advantages of using a John Deere planter is that with proper handling it will plant practically 2, 3 or 4 kernels in every hill, as desired.

Merely move foot lever to change number of kernels per hill.

Drilling distances varied, and change hilling to drilling or back to hilling made easily.



JOHN DEERE, MOLINE, ILLINOIS

General Agricultural Review.

FIELD CROPS.

Sugar beet factories in Tulare county report that they have 20,000 acres signed up for the coming season, 4000 of which have already been planted.

An institute of gardeners and truck farmers was held at Riverside January 19 and 20 in an effort to aid in the diversification of agriculture in that county.

Farmers in Imperial county are being asked to plant broom corn by a Utah concern who promise to furnish the seed, advise as to best cultural methods and pay \$100 a ton for the crop.

The first car of lettuce for Eastern shipment from the Imperial Valley left Brawley January 18, a month earlier than usual. Last year 25 carloads of lettuce were shipped from Imperial county East.

According to figures recently compiled there were 60,000 acres of rice planted in California in 1916 as compared to 7,500 acres in 1913. Growers are being urged to plant in April, rather than delay as they did last season.

Five carloads of potatoes were shipped from Sebastopol lately at an average price of \$2 a cwt. A good many potatoes were grown in the Occidental, Freestone, Bodega, Valley Ford and Two Rock districts of Sonoma county last year.

A movement is on foot at Riverbank to have a sugar cane mill erected there during the coming year in time for this year's crop. Sugar cane has been grown there successfully, but to date no effort has been made to secure a custom mill.

Ralph D. Robertson, newly appointed Farm Adviser of San Joaquin county, has secured a new variety of cow peas which he believes will replace the blackeye. The lat-

ter named bean is objectionable because of the small black spot, in market circles.

A report from Chico states that the Dodge Rice Co. have been able to increase their yield of rice 50 per cent the past season because of better seed and methods employed by them. The report states that they have found a rice that will mature at least a month earlier than other varieties.

A contract was made last week between a Japanese hog grower of Sacramento and a New York firm whereby the Japanese grower agrees to deliver 100,000 pounds of first-class hops during 1917 for 10½ cents a pound. As the average cost of growing hops in the district is 10 cents the margin of profit is considered very low.

The Imperial Valley is going into the early strawberry business. It is announced from El Centro that the first raisers of strawberries last year made \$1,000 per acre. Hence ranchers are now going more extensively into the strawberry business. Berries raised in the valley come into market before the crop of the coast sections and command a good price. It is said that 190,105 strawberry plants were imported into the valley during December.

The Lima Bean Growers' Association has been forced to issue a circular announcing that it can deliver only 60 per cent of the amounts agreed upon because so many members shipped independently the major portion of their crops to brokers whose bids for the beans tempted them. The officers announce that "it is useless for us to state that in future years our contract with the growers will be such that they will absolutely be compelled to fulfill their part thereof."

DECIDUOUS FRUITS.

A large acreage of early and mid-season peaches is coming into bearing next season in San Diego county, according to Farm Adviser H. A. Weinland.

Buyers are offering nine and a half cents a pound for the 1917 crop of dried Calimyrna figs in the Reedley district, according to a report of one of our field men.

The Pioneer Fruit Co. have leased a site for a packing house at Livingston where they will operate in the green fruit buying business during the coming season.

Reports from Oroville state that about 700 acres will be planted to fruit in that section this season. Prunes will lead all other fruits, exceeding even the acreage of olives.

The California Prune and Apricot Growers Inc. have succeeded in securing subscriptions amounting to a half million dollars and ballots are being prepared for the election of directors as this is written.

As a result of a contract made with the California Packing Corporation, Wylie M. Giffen of Fresno will plant 320 acres of peaches in Merced county this spring. The contract price of \$20 and \$25 a ton for green fruit will remain in force 15 years.

Among other large holdings which are to be planted to figs in the San Joaquin valley during the coming planting season is a tract of 1,000 acres of the Bullard lands near Fresno. Nurseries are said to be finding the demand for fig trees heavier than they can fill.

An experiment conducted by Chas. J. Boin of Watsonville with apples stored in pasteboard boxes is said to offer conclusive proof that cold storage methods are unnecessary in preserving this fruit. Of the 1,000 apples stored only two dozen were rotted, after being held for four months.

It is said that peach pits have

saved Van Nuys from a fuel famine. The Vanomaar Producers' big cannery sacked and stored all from the big pack of peaches and apricots. Several tons of these pits were sold to an agent, who later informed the management that they were going to Germany for a chemical use.

Peach growers who are members of the California Peach Growers' Co. have been advised that arrangements have been made whereby they can sell their fruit to certain firms as green fruit without obtaining special permission from the company. These firms have agreed to turn any dried fruit they may have over to the association.

1916 BARLEY CROP SOLD.

Practically all of last year's crop of shipping barley has been bought and either used or shipped East. The large order filled by the E. C. Horst Co. during the past week took all of the small lots left in the State. The price this week at San Francisco has been around \$2.32 per hundred for shipping barley.

The hay crop in parts of the State has been all consumed, and owing to scarcity of pasture, feeders are running short. In the Sacramento valley baled hay is bringing \$15 per ton.

SAN DIEGO RURAL CREDITS ORGANIZATION.

Twelve rural credits associations in San Diego county consisting of 302 members who desire to borrow \$850,000, have adopted articles of association and their local loan committees are making appraisements. That these appraisements are conservative seems indicated by the kicks which come to Farm Adviser Weinland from would-be borrowers. One lady who valued her property at \$10,000 will be able to borrow on a valuation of only \$2,000. Preliminary application blanks give basis for an estimate that half to two-thirds of the loans are to clear mortgages bearing higher interest. One man's mortgage matured last November and he was obliged to renew it for three years at 10 per cent. He tried to have it payable

"on or before," but the mortgage holder insists on three more years of 10 per cent interest.

PLACE CITRUS CROP AT 50,000 CARS.

In its annual estimate of citrus fruit production the Riverside Press estimates the crop in Southern California to be 37,000 cars of oranges and 7,815 cars of lemons for the season of 1916-17. This is an approximate increase of 20 per cent on the orange crop and 15 per cent on the lemon crop over last season. The crop in the Northern California districts is estimated at 6150 cars of oranges and 185 cars of lemons, making a grand total of 50,000 cars of citrus fruit for the State. The detailed estimates and reports are as follows:

	Cars Oranges.	Cars Lemons.
Pomona district ...	4,700	300
Redlands district ..	4,150	...
Riverside district ..	3,400	500
Ontario district	3,250	750
Azusa-Glendora dis.	3,200	300
Orange district	2,650	600
Covina	2,100	...
Highland	1,800	275
San Dimas district.	1,350	650
Whittier district ..	1,250	900
Placentia	1,250	50
Rialto	1,200	60
Alhambra	1,000	...
Ventura county ...	875	1,250
Anaheim	850	...
Corona	800	780
Fullerton	800	...
Duarte-Monrovia ..	750	...
Colton	600	15
San Fernando	275	250
Bloomington	250	50
San Diego county ..	175	600
Moreno	125	...
Hemet	125	...
Santa Barbara Co. .	...	450
Other localities	75	35
Total for So. Cal.	37,000	7,815
Tulare county	5,200	185
Kern county	50	...
Northern Calif.	900	...
Total north of Tehachapi	6,150	185
Grand total for State	43,150	8,000

FOR SALE

A few thousand Lisbon Lemon trees, 2 years old. Selected buds from heavy-bearing trees, absolutely untouched by frost.

CHAS. STORY.

Rivera,

Calif.

Tree Protectors



That Really Protect

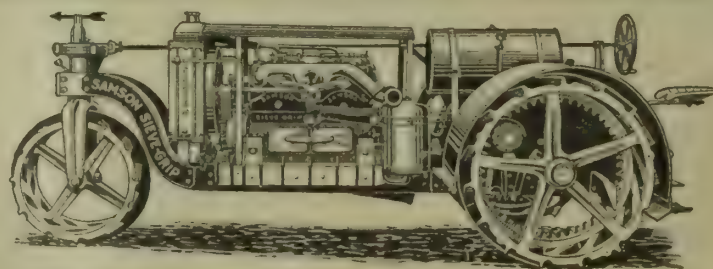
Quickly and easily put on. Will stay.

Fitted with galvanized wire ties.

If you want better protectors for less money write us for description and prices.

Angelo & Son

Bay and Mission St.,
SAN FRANCISCO.



Do Your Spring Plowing
WITH A

SAMSON

SIEVE-GRIP TRACTOR

It will cost you less per acre.
The plowing will be better done.
Better plowing means bigger crops.
Samson Sieve-Grips do not tire.
You can plow at night if you want to.

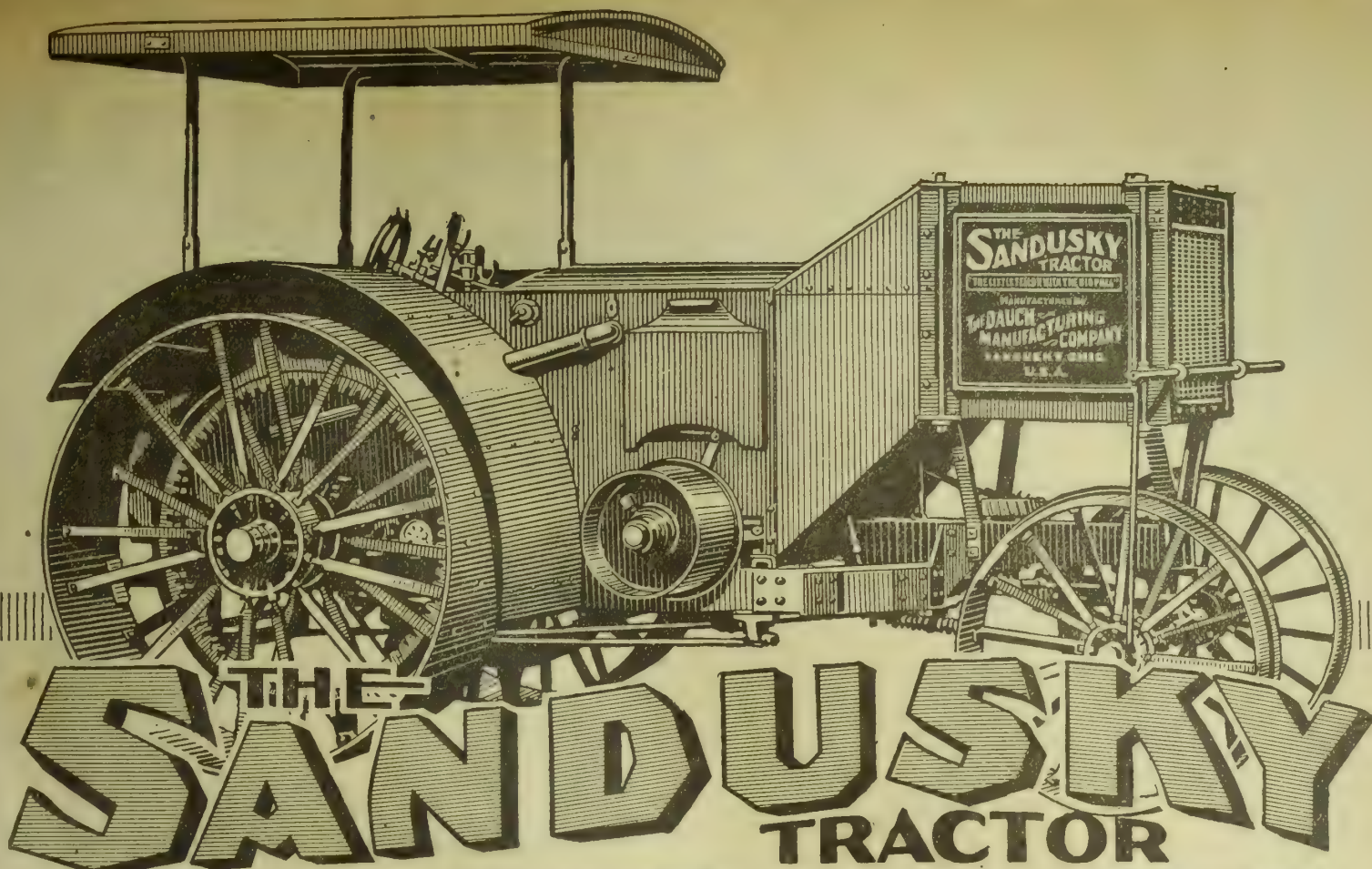
Built in two sizes, 10-25 at \$1350, 6-12 at \$775.
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Samson Sieve-Grip Tractor Co., Inc.
STOCKTON, CALIFORNIA.



ALFALFA

250 lbs. of Mococo Superphosphate per acre will increase the yield of alfalfa enormously. "In some cases the alfalfa growth has been tripled," writes Mr. F. F. Lyons, San Joaquin Co. Farm Adviser. Write for particulars.
THE MOUNTAIN COPPER CO. 332 Pine Street, San Francisco.



"THE LITTLE FELLOW WITH THE BIG PULL"

15-35 Model E---Burns Kerosene

THE recognized standard of excellence in tractor construction is found in our Model E. This fact is endorsed by hundreds of users, and admitted by all engineers who are familiar with its construction.

Tractors can give only the service that is built into them. They are called upon to endure strains no other machine is expected to stand; to do their work under conditions that rack and tear any machine with a weak spot.

It is essential, therefore, that they be built of the best possible materials, by the most skilled workmen, after designs originated by the highest engineering ability, and then proved most rigidly in actual field service.

Real performance cannot be assured in untried, hasty designs or cheap construction with which the market is flooded. The Sandusky Tractor is built for service, durability and economy, and represents the greatest attainment in tractor building yet accom-

plished. You buy tractor certainty when you purchase the Sandusky.

It is sold on a guaranteed basis, after an actual demonstration on your own farm has shown that it is adapted to your needs and capable of doing your work, whether that be plowing, harrowing, discing, harvesting, hauling, threshing, filling the silo, shredding fodder, sawing wood, making roads or operating any belt machinery.

Brief Specifications

Our own four-cylinder, four-cycle 5 x 6½ heavy duty, slow speed, vertical motor; positive self-contained combination force feed and splash oiling system; Bennett air cleaner; three speed selective transmission, 2 to 5½ miles per hour with direct drive on low; ideal three-point spring suspension; all steel construction; small over-all dimensions and short turning brakes; easily handled; surplus cooling capacity.

A NEW PLAN—FREE SERVICE

We announce an entirely new departure in tractor selling. A coupon book for 200 hours of service goes with every Model E. This means expert service and help without charge when you want it. See catalog for details.

Our Binding Guarantee

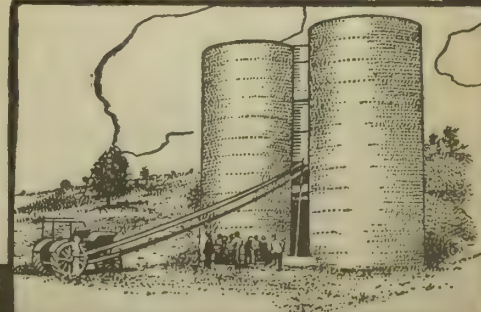
We guarantee The Sandusky Tractor full 15 horsepower at the drawbar and 35 on the belt pulley; capable of handling at least four 14-inch moldboard plows eight inches deep where a big team can pull a 12-inch plow six inches deep; to run belt machinery up to a 32-inch separator; to have one-third reserve over its drawbar rating, and for one year against defective workmanship and material.

BOOK E-132FREE—A 40 page book which fully describes and illustrates the distinctive design, high grade construction and exceptional ability of the Sandusky Tractor. A copy will be mailed you upon request.

If the Model E is too large for your requirements, let us send you information covering our 10-20 Model J. Ask for booklet J 132

THE DAUCH MFG. COMPANY SANDUSKY, OHIO

The Sandusky Tractors—both Models—are ready for inspection at and delivery from our principal Factory Branches and Service Stations at: Indianapolis, Ind.; Bloomington, Ill.; Milwaukee, Wis.; Lewistown, Mont.; Minot, N. Dak.; Fargo, N. Dak.; Sioux City, Iowa; Lincoln, Nebr.; Wichita, Kans.; Dallas, Texas; Leesburg, Fla.; Los Angeles, Cal.; Sacramento, Cal.



Mechanical Power on the Farm.

Users of tractors, engines, pumping plants, motor trucks, automobiles, electric motors and other mechanical farm power are invited to make this department an exchange of your experiences and troubles.

ELECTRICITY AND GAS ENGINES.

[Written for Pacific Rural Press by C. C. Cowin, from Data Furnished by F. S. Myrtle of the Pacific Gas and Electric Co.]

The individual Californian on the average uses electricity more generally than the people of our other States. Two natural advantages, our waterfalls and our oil fields, make this possible.

The evidence of this condition is confirmed by the large sale of electric lights, electric appliances, electric ranges, and machinery which are used about the farm and home. That a very large percentage of California homes are using electrical appliances is evidenced by the following tabulation of approximate annual sale:

Electric Irons 17000 yearly
Electric toasters ... 2700 "
Electric percolators,
tea pots, etc. 6700 "
Portable electric vacuum
cleaners 5500 "
Electric washing machines
..... 5000 "
Electric ranges—probably
..... 1500 next year

Little motors are purchased for driving sewing machines, etc. The women on the farms seem to appreciate electricity even more than those in the city. To date there are 2000 electric ranges in use in California homes.

In our rural communities we have a condition equalled nowhere else in the world. A recent census developed the fact that in December, 1915, 12,000 motors were in use on California farms.

The U. S. census for California in 1909 shows that only 143,000 electrical horsepower was used in our State for all purposes; and our farmers hardly knew what an electric motor was.

This, in a measure, is solving the hired man problem for the farmers, for electricity is dependable and ready to work twenty-four hours a day at any time during the year. It is a conservative estimate to say that the electrical manufacturers, jobbers, and dealers have distributed to the California farmers during the past few years some fifteen or twenty million dollars of electrical appliances, lamps, and machinery.

In the December, 1915, census, fourteen large power companies reported that 190,441 electrical horsepower was used on the farm. The number of farms using electricity was given by all but five of the companies, and was 7509; approximately the total number of installations for all fourteen companies was 8850.

Many say that this is a condition peculiar to California due to the fact that the interior of our State is semi-arid, and is not possible elsewhere. About 170,000 h.p. is for irrigation and reclamation; it must not be overlooked that the remaining 20,000 h.p. which is used for miscellaneous purposes on the farm is no small figure.

Gas Engines.—Have you ever made a survey in your rural communities to ascertain just how many gas engines there are per square mile?

Some surprising figures are liable to be acquired, because right here in California, where "electricity on the farm" is a great reality, one of the central stations, which has been particularly active in the development of rural business, recently made a survey of this character to determine how many gas engines were within one mile of each side of their lines. To their great surprise they found that there were some 14,000 h.p. in engines.

It has been said by some that the farmers are not responsive to modern labor-saving devices and conveniences. But experience in California has taught us that the farmers buy more readily electrical appliances and current consuming devices than do the city people; and the farmers already have a desire for electricity.

GROWING USE OF WATER POWER.

Twenty new water-power projects which utilize National Forest land began operation in the fiscal year 1916, says Henry S. Graves, Chief of the Forest Service, in his annual report. This was an increase of 18½ per cent in the total number. In the fiscal year 1915 the number of new projects which began operation was twelve. Forty-two per cent of the developed water-power projects of the United States utilize National Forest land, the Forest Service figures show.

Development of relatively small projects is particularly in evidence, according to Graves, in the Rocky Mountain States.

California leads in the amount of power under permit and in operation. The number of transmissions-line permits in effect was increased by thirteen during the year. The forty applications for power-project permits received in 1916 included eight from Alaska—a notable evidence, according to the report, of increased local interest in power development on National Forest lands there.

Concerning the report prepared by the Forest Service in response to a resolution of the Senate calling upon the Secretary of Agriculture for information regarding the ownership and control of water-power sites and any facts bearing on the question as to the existence of a monopoly in the ownership and control of hydroelectric power in the United States, Graves says:

"This report presented, in far greater detail than has ever been attempted before, an exhaustive analysis of the general situation. It showed a marked concentration of definite and complete control of a large percentage of developed water power by a very few companies. Data presented regarding interrelationships through common directors indicated a marked tendency toward association or community of interests, particularly between the principal holding companies. The movement toward concentration in commercial central stations of all the

LAYNE & BOWLER PUMPS

Preferred By Up-to-Date Irrigators

Because of the perfect service Layne and Bowler Pumps are capable of rendering even when operating under the most trying circumstances, the leading irrigators in the West have selected them in preference to all other makes. Years of successful experience in pump manufacture are embodied in Layne and Bowler Pumps. They are as perfect as human ingenuity can make them. Remarkably simple in construction—nothing to get out of order. Easily operated.

Our free Pump Catalog should be in the hands of every rancher. Write for Your copy. Ask for Booklet No. 25.

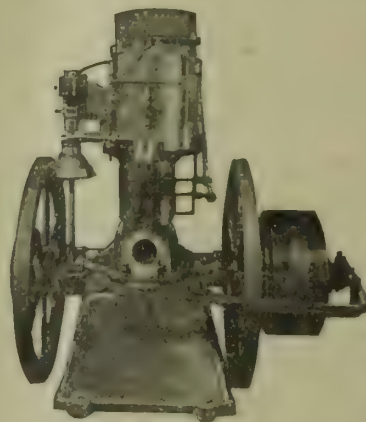
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900 Santa Fe Ave., Los Angeles.



With Gasoline at 4c per Gallon, an ordinary gas engine could not

produce power as cheaply as does the

Victory Oil Motor



This engine is made in California to operate on California asphaltum base oils. It has no valves, cams, batteries, or small working parts. No heating of fuel, no hot balls, and no torch required for starting.

Ask for our Rigid Guarantee.

Victory Motor Co.

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Sacrifice Sale ARMSTRONG Standard Gas or Distillate Engines Direct to Consumer AT COST

We must close out our present stock of engines at once to make warehouse room for stock now in transit and offer these engines at never-before-heard-of prices.

	Regular Price	Special
1½ H. P.	\$ 60.00	\$ 37.50
2½ H. P.	85.00	47.50
4½ H. P.	160.00	98.50
6 H. P.	235.00	135.00
8 H. P.	330.00	175.00
10 H. P.	400.00	210.00

All Prices F. O. B.
Los Angeles.

We have only a few engines of each size to furnish at these low prices so don't delay if you want an engine at cost. Write us today.

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Armstrong
1½ to 20 H. P.
Engines

An Engine
Built
for Hard
Service

Guaranteed
for
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Repair Parts Carried in Los Angeles.
Every engine has built-in Magneto, and equipped with all late improvements.

1842 The Seventy-Fifth Anniversary of 1917

P&O

LIGHT DRAFT PLOWS

Built for the Field Test.

Three-Quarters of a Century of "Knowing How" Hammered Into Every One of Them.

The product of the Parlin & Orendorff Co. has always been noted for simplicity of construction, great strength and ease of operation. It was upon such a basis that the founders of this business made their implements, established their reputation, and built their factory. It is upon the same foundation that the business has been carried on to this day, and in 1917 we celebrate our Diamond Jubilee; 75 years of practical experience gained through constantly striving to provide for the exacting requirements of three generations of American farmers.

For an even three-quarters of a century we have met the demand, and today we operate the largest and oldest permanently established plow factory in the whole world. "It's the way we build them."



Light Draft Plows, Harrows, Planters and Cultivators are made in all types and sizes, to meet the conditions in all sections, and are Backed by an Unqualified Guarantee.

We also make the most complete line of Tractor Engine Plows produced, and we have a special catalog devoted to these famous plows.

The P&O Little Genius Engine Gang Plow

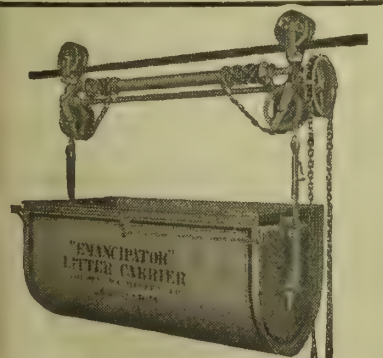
was the most popular plow shown at all points on the 1916 National Tractor Demonstration.

We will send P&O Catalogs to any address. While P&O Implements are sold only through established implement dealers, we welcome correspondence from farmers in all sections.

Ask Your Dealer or Write Us.

Parlin & Orendorff Company
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Kansas City Dallas Minneapolis
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Sioux Falls Spokane Denver Oklahoma City
Utah Implement-Vehicle Co., Salt Lake City
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BUY AN ENGINE ON YOUR OWN TERMS.



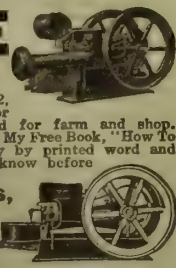
ED. H. WITTE 30 Years of success in making and selling my high grade engines enables me now to sell direct to the user on practically his own terms. Any worthy, creditable man anywhere in the U.S. can accept my offer, and be sure of a reliable engine at direct from factory prices.

WITTE ENGINES

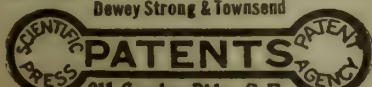
are made in sizes 2, 3, 4, 6, 8, 12, 16 and 22 H.P.—Kerosene or Gasoline. Particularly adapted for farm and shop. Hundreds in use in every state. My Free Book, "How To Judge Engines," explains fully by printed word and illustration, what you should know before buying.—ED. H. WITTE, PRES.

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Kansas City, - Missouri.
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Dewey Strong & Townsend



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Circular containing 100 mechanical
movements mailed free.

primary power employed in the electrical industries and in manufactures was found in all sections of the United States, the rate of concentration during the period 1902-1912 being highest in the South Atlantic States and the extent of concentration greatest in the Western States.

Waterpower Increase.—"The rate of increase in waterpower development for public service use from 1902-1912 was approximately three times as great as in steam power. The development per capita of the Western States in 1912 was two and a half times as great as in other parts of the country. The report showed a considerable overdevelopment in nearly all the power centers of the Western States—California, Oregon, and Washington in particular showing installations far in excess of maximum demands."

TRACTOR ON GRAIN RANCH.

[Written for Pacific Rural Press.]

It used to take Baird Bros. of Yolo county 30 to 35 days to harvest their 1100 acres of grain with mule stock, but they got disgusted trying to hire competent men even at the higher wages. "They wanted big pay, but would not attend to the stock right, even then," says Mr. Baird.

In 1911 they bought a 60 h.p. tractor and have used it ever since, with very little repairs. The first year they harvested the 1100 acres in 35 days, aiming to quit at sundown and begin when dry enough in the morning. Gas consumption averaged 33 gallons per day. Every summer since then they have run the tractor for their own and a very little outside work, and have lost only one-half day in the busy times.

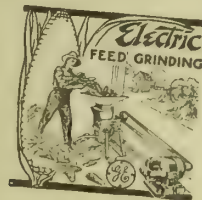
They plow and harrow their grain land, and harvest the grain besides four or five days' stationary alfalfa threshing per season. They had 25 acres of their own for seed last season and threshed some for neighbors; and sawed wood, too. On stationary work, gas consumption is figured in proportion to work done, as the engine is never worked up to capacity, and no power is lost in moving the tractor itself. A house mover got stuck in a swale last spring and the Baird Bros.' tractor pulled the house onto firm footing.

Some dry plowing is done; but with the big tractor, they can wait until the foul weeds are well started by early rains; then they plow and harrow day and night. Some 600 acres are fall-plowed and winter-sown, mostly with barley, but some with wheat.

Their land is in two ranches, one with lighter soil than the other. On the former, the tractor pulled 16 ten-inch plows six inches deep. On the latter, only a 10-foot strip is plowed at once. At the first harrowing, the spot-light is focussed on the edge of the harrowed ground; but the cross harrowing has to be done by daylight. Occasionally they summer fallow some land as they did last year.

Soil Packing does not worry Baird Bros. for they hitch a little cultivator to the bar behind each track, which digs it up after the tractor has run over the soil. But even so, the track marks show in the grain; for there is the best grain. "The tractor will go over any ground that is fit to work," says Mr. Baird.

The Dependable Hired Man

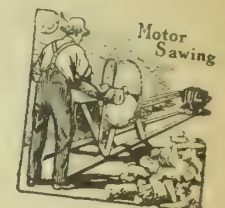


If you had a hired man available at any hour of the day or night—ready for all kinds of work, in the house, in the barn or out in the field—your greatest trouble would be over.

G-E Motors

can do all this and more

Practically every farming operation can be performed *cheaper, quicker and better* by the use of G-E electric motors.



Ask your local power company what G-E Motors will do for you—or write our nearest sales office or G-E Motor Agency for detailed information.

General Electric Company

Los Angeles Office:
Corporation Bldg.

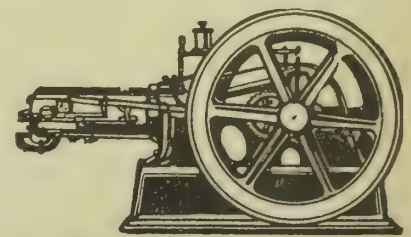


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When you buy a Commercial Engine you are not helping along an experiment—you get the perfect result of ripe experience.

Commercial records show what Commercial Engines can do and will continue to do because the Commercial standard will never be lowered.



An ironclad written guarantee protects the purchaser of every Commercial Engine. Write for our handsome new catalog and post yourself on all the superior features of Commercial Engine construction.

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2424 Porter Street
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WANTED-TRAINED AUTO MECHANICS



Thousands of NATIONAL graduates are making BIG MONEY everywhere as Chauffeurs, Auto and Tractor Repairmen, Machine Salesmen, Battery and Ignition Specialists, Garage Owners, Technical, practical instruction. Up-to-date equipment. 12 years' success. We help students earn living. Write for illustrated catalog and free \$40.00 Special Ignition Course TODAY.

NATIONAL SCHOOL OF ENGINEERING—Los Angeles, Cal.

State Dairy Cow Competition, December.

[Written for Pacific Rural Press.]

With one of the cows which was entered in the California State Dairy Cow Competition during December breaking the State record for the monthly production of butterfat, and 63 per cent of all cows entered averaging over 60 pounds of fat each, the real work of the contest may be said to have just started.

Numerically there were more Holsteins entered during December than of any other breed, the totals of those producing over 40 pounds of fat being as follows: 19 Holsteins, 16 grades, 13 Jerseys, 7 Guernseys and 2 Ayrshires. As many of the cows which are to be entered have not as yet freshened, these numbers are expected to be greatly enlarged in future months.

Not only did Holsteins lead in numbers but in production also, the 19 head averaging 1985.2 pounds of milk containing 75.39 pounds fat as compared to 1494.6 pounds milk and 60.34 pounds fat average for two Ayrshires; 1214.5 pounds milk 59.20 pounds fat average for 7 Guernseys; 1412.8 pounds milk 55.8

pounds fat average for 16 grades and 879.9 pounds milk 47.50 pounds fat average for 13 Jerseys.

A noticeable point in the above figures is the relatively high average production of grade cows, which indicates that owners of grade herds who are competing have used good judgment in selecting high-producing animals from their herds for this contest. Another point of interest in the figures on grade cows is their average test of 4.04 per cent, indicating that there has been an intelligent infusion of blood as a rule among these herds with the aim of securing a good average test rather than an extremely high or low test.

The average butterfat test of the various breeds was as follows: Holsteins 3.89 per cent, Ayrshires 4.38 per cent, Guernseys 4.92 per cent and Jerseys 5.64 per cent. Without exception these averages are higher than claimed by the various record associations.

The production of the 57 highest producing cows as well as their owners' names follow:

HOLSTEINS.			
Cow and Owner.	Milk	Fat	Test
Aaggie Acme of Riverside II (A. W. Morris & Sons)	2794.1	115.676	4.14
Boweda (Stanford Univ.)	2339.6	99.667	4.26
Arallia De Kol 3rd (A. W. Morris & Sons)	2339.5	93.580	4.00
Athalva II (Palo Alto Stock Farm)	2157.1	92.971	4.31
Hartog Creamelle De Kol (A. W. Morris & Sons)	2327.8	92.186	3.26
Abbit De Kol o E. B. II (H. E. Cornwell)	2488.0	87.578	3.52
Korndyke Duchess K. (McAlister & Sons)	2852.1	87.559	3.07
Champion Figgis	1373.6	82.553	6.01
Doremoon (Stanford University)	2134.1	79.602	3.73
Arallia De K. Pontiac M. (A. W. Morris & Sons)	1638.8	75.057	4.58
May Wawa D. K. Burke III (Palo Alto Stock Farm)	2098.5	74.707	3.56
Mousie D. K. Lady II (Palo Alto Stock Farm)	2053.7	65.308	3.18
Allevail Betty W. (McAlister & Sons)	2051.4	63.388	3.09
Agness Colantha (Univ. of California)	1360.9	61.920	4.55
Queen Pontiac Butter B. (McAlister & Sons)	1836.4	61.152	3.33
Pauline of Bloom (Homer Hewins, Jr.)	1488.9	56.727	3.81
Arallia Mead P. De K. (A. W. Morris & Sons)	1679.4	53.405	3.18
Korndyke Senorita (Univ. of Cal.)	1167.9	51.270	4.39
Cal. Juliana De Kol (Univ. of Cal.)	1037.3	41.388	3.98
AYRSHIRES.			
Willowmoor Vesta IV (E. B. McFarland)	1870.2	81.354	4.35
Willowmoor Cherry (Univ. of Cal.)	1119.0	49.348	4.41
GUERNEYS.			
Butternut Queen (Elliot-Brant Rancho)	1416.9	85.439	6.03
Imp. Brittleware Mistletoe (Hollow Hill Farm)	1473.8	67.205	4.56
Imp. Cherry of Effords III (Hollow Hill Farm)	1403.0	62.434	4.43
Imp. Hayes Sweet Marj. V (Elliot-Brant Rancho)	887.5	55.469	6.25
Capelli's Jessie (Hollow Hill Farm)	1042.7	55.263	5.30
Rancho Morning Rose	1011.6	47.080	4.52
Kitchener's Clementine of B. V. (J. W. Henderson)	1236.1	41.680	3.38
JERSEYS			
Pearl of Venadera (Guy H. Miller)	963.1	56.24	5.84
Goldie of Venadera (Guy H. Miller)	1188.9	55.76	4.69
Petalida (J. M. Bomberger)	1115.2	55.76	5.00
Marion of Butter Valley (N. G. Gross)	1111.8	52.943	4.69
Wanda of Venadera (Guy H. Miller)	777.1	51.366	6.61
Hope of Green Gold (J. M. Bomberger)	996.7	48.838	4.9
Loretta of Green Gold (J. Ms Bomberger)	692.2	44.300	6.4
Pet of G. G. (J. M. Bomberger)	790.4	44.262	5.6
Lorena of Venadera (Guy H. Miller)	975.8	45.082	4.62
Fairy Lad's Mabel II (N. G. Gross)	605.8	41.981	6.93
Aldine of Venadera (Guy H. Miller)	762.3	41.850	5.49
Jennie of Willowood (C. G. McFarland)	873.0	40.333	4.62
Gertie's Heifer (N. G. Gross)	587.2	40.211	6.85
GRADES.			
Spot (F. O. & K. U. Bohnett)	1580.2	77.578	4.91
No. 15 (Napa State Hospital)	2012.2	68.414	3.35
Edith (J. M. Bomberger)	1355.7	65.074	4.80
Cherry (Univ. of Cal.)	1405.1	62.789	4.33
No. 29 (Napa State Hospital)	1753.1	58.904	3.36
No. 68 (Napa State Hospital)	2007.9	58.028	2.89
No. 485 (Hollow Hill Farm)	1122.1	57.564	5.13
Beauty (S. A. Mealey)	1614.0	54.880	3.40
No. 30 (Napa State Hospital)	1481.7	54.378	3.67
No. 28 (Napa State Hospital)	1248.4	54.056	4.33
Dorris (F. O. & K. U. Bohnett)	1198.5	50.816	4.24
No. 67 (Napa State Hospital)	1376.9	49.981	3.63
Daisy (F. O. & K. U. Bohnett)	1039.3	48.733	4.73
No. 17 (Napa State Hospital)	1240.3	45.271	3.65
Marion 1st De Kol (J. M. Christen)	1096.4	44.843	4.09
Fayne (F. O. & K. U. Bohnett)	997.8	41.010	4.11

Proposal to Pay for Reacting Cows.

With the increasing importance which is being given to tuberculin testing in California, largely through the dairy laws which went into effect last October, it is of interest to know that steps are being taken by the U. S. Government to provide compensation to owners of reacting cows.

In outlining the government's policy in this regard, D. F. Huston, Secretary of Agriculture, writes as follows: "It is not thought that much permanent headway will be made in securing the co-operation of cattle owners unless some reim-

bursement is made for cattle destroyed. Under the plan followed in the District of Columbia cattle which react are first appraised and then slaughtered. If no lesions of tuberculosis are found, the owner receives the full appraised value. If lesions are found but the carcass is not affected to such an extent as to destroy the value of the meat for food purposes, the owner receives 80 per cent of the appraised value less the salvage. In case the carcass is so badly affected as to require destruction, the owner receives 40 per cent less the salvage. This has been

California State Butter Record Broken

by a daughter of

KING MEAD of RIVERSIDE

Butter 7 days 35.36—Butter 30 days 142.39—Average % 4.5.

This is the record just made by Anggie Acme of Riverside 2nd.

If you want a bull that will transmit—

HEAVY PRODUCTION—HIGH TEST—GOOD TYPE,

your best opportunity is in a son of **KING MEAD OF RIVERSIDE.** Our claims for high per cent of fat are not based upon abnormal seven-day tests, but on the average test of his daughters for the year.

His first five two-year-olds tested for the year average 14,325 pounds milk, 721 pounds butter and 4% butter fat. Two of these made over 21 pounds in seven days, and with second calves have made from 26.17 to 28.46.

We can now offer a beautiful son of King Mead of Riverside from a three-quarter sister to Arallia De Kol, 28,000 pounds milk and 1142 pounds butter. His dam made 810 pounds butter from 19,352 pounds milk in a year.

The calf is an 87½% brother to Arallia De Kol Mead, that holds the highest two-year-old butter record in California, 870.61 pounds butter from 16,669 pounds milk, average test 4.18. Born May 28, 1916. An outstanding individual.

Price and pedigree by request. We are sold out of serviceable bulls and you had better buy now if you need a bull for spring service.

A. W. Morris & Sons
WOODLAND, CALIFORNIA

Breed for Butterfat



Beryl Clothilde Hengerveld,
Champion in Butter-fat Contest,
Sacramento, 5-day record, 21.11
pounds, test 4.7 per cent.

The quickest and surest way to make your Holstein herd more profitable in spite of high cost of feed is to introduce blood from high-testing ancestry.

My herd has a larger percentage of high-testing cows than any other herd in the State.

My young herd bull, **DUTCHLAND SIR PIETERTJE CREAMELLE**, has high-test breeding, and is transmitting this breeding to his sons and daughters. Five tested daughters have records averaging 21 pounds, all testing better than 4%. One of these, **Clothilde Pontiac Creamelle**, is California Champion 2-year-old, with a record of 22.52 pounds at 2 years 1 month; test 4.72%.

Have a few fine young bulls that will soon be ready for service.

WRITE OR CALL AND SEE THEM.

F. STENZEL

Breeder of High-Test Holsteins.

SAN LORENZO,

CALIFORNIA

GRANDSONS OF TILLY ALCARTRA

We now offer two young bulls for sale that are old enough for service. No. 1—Born Sept. 13, 1915.



Prince Alcartra Korndyke.
Best bred son of Tilly Alcartra.

Write for prices, or better come and see them.

J. S. GIBSON CO., Box 97 Williams, Cal.

"THE NAME GIBSON INSURES QUALITY."

CREAM WANTED

Write Us, and We Will Send You Regular Weekly Quotations

Ship to a House of Known Financial Responsibility.

Western Meat Co.
Creamery Dept., San Francisco.

Ask Your Dealer For

El Dorado Coconut Oil Cake

for Milk Cows and Chickens and Young Pigs and Hogs. Cheapest food in the market today. If your dealer doesn't carry it, address

EL DORADO OIL WORKS,

483 California Street,

San Francisco.

found generally acceptable to the cattle owners. The cattle are appraised at their beef or dairy value. Considerable co-operation is received from breeders of purebred cattle in eradicating the disease from their herds. So far no compensation has been given for cattle which reacted to the test. Usually

IS HE CRAZY?



3½ lbs., \$1.00; 3 lbs., \$1.00

WILSON'S OFFER.
Wilson will parcel post any of the above grades, all charges paid. You use 1 lb. If it is unsatisfactory, return the rest, and Wilson will send you postage.

MIND YOU, NO CHARGE FOR THE POUND USED.
If you are pleased and keep the coffee, you agree to send the \$1.00 with 10 days.

IS THAT FAIR?

When ordering, kindly state how you want coffee ground—fine, medium, pulverized, or in the whole bean.

WILSON'S

968-970 Market St., San Francisco

these cattle are slaughtered at the owner's expense, but in some instances where the animals are of great value they have been segregated and used for breeding purposes only. If co-operation with the States is undertaken, it should be on the half-and-half plan and the work should be confined to certain definite sections, such as one or two counties at a time, with extension to other counties as the work progresses. The magnitude of the task should be fully understood before the work is begun. There are approximately 22 million dairy cattle in the United States. It would be necessary to re-test herds at intervals of six months until all disease was eradicated. All new cattle added to tested herds would require testing unless from herds known to be clean."

As Wm. T. Creasy, Secretary of the National Dairy Union, points out, whether we agree or not on the tuberculin test, all agree that slaughtered animals should be paid for, and the State Legislature should take the matter up and make the necessary appropriations to start the work so that by another year the government's half-and-half proposition can be accepted.

This might be a good thought for some of the legislators from dairy districts who try so hard to make a hit with their constituents by introducing bills affecting the dairy business. The passage of a tuberculosis compensation bill would surely be a vote-getter for these able gentlemen next election, at least among the dairymen.

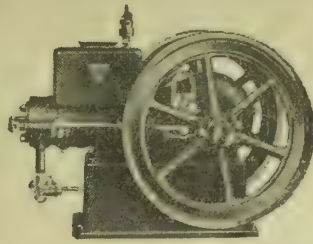
COWS LOSE MINERALS FROM THEIR BODIES.

Dairy cows ordinarily cannot digest from rations of the usual character sufficient mineral matter to meet the demands made by heavy milk production. This conclusion has been reached by nutrition experts at the Ohio Experiment Station after two years' investigations with cows yielding large quantities of milk. These specialists also say that even when the common practical rations are supplemented with large amounts of calcium carbonate and bone flour, the cows still give off more lime than they can digest from their rations. To meet this demand for heavy milk production the cows must draw upon the mineral substance of their skeletons. Further attempt is being made, by the use of more readily soluble lime salts, to learn whether a cow can absorb as much lime as she gives off during heavy milk production. The results obtained thus far emphasize the value of leguminous roughages in milk production. Without liberal allowance of such feeds the loss of minerals from the bones becomes excessive, and predisposes to disorders of nutrition.

THAT STATE DAIRY LAW AGAIN.

To the Editor: Under the State law is it necessary to have cows tuberculin tested in order to sell cream to creameries? If they are so tested is it necessary to pasteurize the milk if you wish to sell it fresh? Is the State Veterinarian supposed to do the testing and about what does it cost?—L. W. R., Winters.

We certainly thought we had made this law plain enough to sub-



Life Time Engines

When you invest in an Alpha Engine you buy dependable power service. Because these high-grade engines are built with care and accuracy parallel to watch-making, they will give you power service you can absolutely rely upon at all times—not for a few weeks or months, but for many years.

They're Life-Time Engines.

Stationary
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ALPHA ENGINES

The World's
Standard

Gasolene—Kerosene—or Distillate.

½ H. P. to 100 H. P.

Have more drop forged and case-hardened parts than others. Built-in, gear-driven, rotary magneto does away with the need of batteries. Semi-steel cylinders and pistons—unbreakable steel gears—bearings of extra quality and ample proportions. Every individual engine balanced to insure perfect action.

WRITE FOR CATALOG and name of nearest dealer, who will be glad to give you a demonstration of the Alpha without any obligation on your part. If not at your dealers, write us direct.

VIKING PUMPS.

JAMES BARN EQUIPMENT.

EVERYTHING FOR THE DAIRY.
DE LAVAL DAIRY SUPPLY CO.
SAN FRANCISCO.

ORMONDALE SHORTHORNS



Golden Goods, Jr., Herd Sire.

Our 1916-17 offering of yearling bulls is small but select. They are all heavy boned, solid red in color and of Scotch and Scotch-topped breeding. Suited for either the range grower or breeder.

DUROCS.

Our Durocs are of the big type, with big bone, well-arched backs and carrying good hams.

We have a few head of service boars, now ready for service, solid red in color and out of prize-winning animals.

Every Animal Positively Guaranteed

Whether you buy or not, visit our ranch, 7 miles from Palo Alto on Woodside Road. We welcome inspection. Prices and pedigrees on application.

Shorthorn Cattle
Duroc-Jersey Swine

ORMONDALE CO.

R. D. No. 1
Redwood City,
California.



NOW in the East to Buy Shorthorns - Herefords

I will be in the East until February 10, selecting breeding cattle for prominent cattle growers and breeders of California. If you will write or wire your wants to me at once I will be able to fill your order on this trip.

ALL ORDERS EXECUTED ON A STRICTLY COMMISSION BASIS.

ADDRESS TILL FEBRUARY 10,

Hotel Castle, **R. M. DUNLAP** Omaha, Nebraska.

MILLBRAE DAIRY HOLSTEINS

Herd established 25 years. Every cow a proven profit-maker. Every sire a proven getter of profitable dairy cows.

Bulls from high record dams for sale at all times. Here's a good one:

KING PONTIAC NETHERLAND BARRILOS.

Born March 18, 1915. Sire: KING PONTIAC MUSA NETHERLAND 89775. Dam: SLEEPY BARRILOS OF MILLBRAE 161752. Official records 678.4 pounds milk and 30.88 pounds butter in 7 days, 2923.2 pounds milk and 122.56 pounds butter in 30 days. A wonderful producing cow who has a 31.86-pound 4-year-old daughter and a 24.95-pound 3-year-old daughter. Bull is a good individual.

Prices and Pedigrees on Application.

MILLBRAE DAIRY,

**MILLBRAE,
SAN MATEO CO.**

P I P E
For Every Purpose NEW Second Hand and NEW
Threads & Couplings Hot Asphaltum Dipped
Fittings and Screw Casings Valves Guaranteed for Pressure

Pacific Pipe Co.

Main and Howard Streets,

San Francisco, Calif.

The Giant Of The Dairy

Grade up with a Jersey Bull!
He is half the herd, and the breed determines half the profits. Breed him to your grade cows and bring the herd average near the Jersey average—489 pounds of butter fat per year. Your calves will be beauties. They'll mature quickly into gentle, hardy, vigorous and persistent milkers, long-lived and adapted to any climate. Let us tell you more about them. Send for our book, "The Story of The Jersey." It's free and it's a dandy.

Write for it now.

The American Jersey Cattle Club
West 23rd Street • New York City

scribers in past issues. No, you don't have to have your cows tested or the milk pasteurized in order to sell cream to creameries. Neither do you have to pasteurize your milk when sold fresh, if your herd has been tested and passed by the State Veterinarian or his deputies. The testing is done free of charge by Dr.

Keane, or his assistants, whose address is State Veterinarian, Sacramento.—Eds.

If any of the ewes are not in good condition, separate them from the rest of the flocks and give them extra care until they are in form to return.

Swine Breeders Urge Better Markets.

[Written for Pacific Rural Press by Cuthbert Powell, Los Angeles.]

With a highly representative delegation from all parts of California and several out-of-State visitors the annual meeting of the California Swine Breeders' Ass'n held at Los Angeles January 18-19 was the best attended meeting ever held by that association.

In calling the meeting to order President C. B. Cunningham reviewed the history of the association as well as of the swine industry in California since the association was founded. From a membership of 30 he stated that the association had increased its membership to about 300. He said it was a healthy sign to see such a general interest taken in breeding up the hogs of the State as it meant greater success and more money to the hog raisers. He hoped the good work thus begun would be pushed along until all the scrub hogs had been replaced by better blood and the scrub and razor-back eliminated altogether.

James Hill of Hamilton advocated purebred hogs of a type adapted to one's location, undivided care and attention, and feed that will produce the greatest number of pounds of meat for the feed consumed. He believes that by holding hogs raised in this manner till they are "ripe" for the market their returns will be entirely satisfactory.

In speaking on "Feeding, Growing and Marketing Hogs" L. L. Lamson of Holtville said that you must first feed your hogs so that they will put on the most flesh for the amount of feed given them and that after you have them ready for the market you must find a buyer that appreciates your type of hog.

Are California Prices Lower?—In a paper prepared for the meeting by F. L. Washburn, manager of the Western Meat Co. of San Francisco, who was unable to attend, he was positive in the assertion that the price of swine in California is no

lower, on the average, than in either Oregon or in the Middle Western States. He also took exception to the inference that there is something radically wrong with the conditions under which our hogs are marketed, that the packer may have much to apologize for, and possibly a profit out of proportion to those of the grower.

By reference to the year book of Swift and Co. recently issued, Mr. Washburn pointed out that their actual payments per cwt. at all plants for hogs during the year 1916 was \$8.49, while the average paying price of the Western Meat Co. for the same period was \$8.43, a difference of only six cents per cwt., or between 10 and 12 cents. He also stated that the average price paid at all of the Swift plants for live hogs during 1915 was \$7.09, the identical cost of the entire purchases of his company for the same year.

Analyzing the price situation still further, Mr. Washburn quoted from a recent bulletin of the U. S. Dept. of Agr. which gave the average market price for hogs throughout the United States as \$7.40 for the year 1916 and \$6.10 for the year 1915. This, he stated, shows that the average paying price of his concern has been more than a cent higher than the average market price throughout the country, notwithstanding that his company's figures include the cost of all lightweights and other undesirable stock.

Progress Shown.—It has only been during the past two years that any progress has been made in California pork raising, according to Mr. Washburn, the records of his company showing average weekly receipts for 1915-16 of slightly more than double the average weekly receipts of the previous eight years. But even then, no Pacific Coast packer is doing a business large enough to be placed in the same class with the smaller plants of the Middle West.

During 1915 the weight of hogs received by his company averaged 179 pounds, and in 1916 but 176 pounds, fully 20 pounds under the desirable weight for packing purposes. Also because of the great number of light unfinished hogs that are being marketed the average yield for 1916 was only 75.1 per cent as

compared to 76 per cent for 1915.

Not Pork Eaters.—Because Californians are comparatively small eaters of pork, unless it be bacon or ham which is but 25 per cent of the hog, coast packers have a very poor market for pork loins, trimmings, tongues, spareribs, neck and back, bones, kidneys, tails, leaf lard, boneless ham butts and shoulders. Because of this the Western Meat Co. have been compelled to ship considerable quantities of frozen pork East, with a freight and icing charge of \$2.35 per cwt. on the net weight shipped.

Light Weights.—Another disturbing factor to packers is the comparatively large business done by retail butchers in the so-called "block hog," whose dressed weight is from 90 to 125 pounds, too small a hog to make a satisfactory packing carcass.

This type of hogs usually sells at one to one and a half cents, live weight, under the price of heavier hogs, and is a further handicap to the packer, as the retailer, who might otherwise be using fresh pork cuts, is able to buy these cheap dressed hogs and work off the small cuts fresh to his trade. Such a large percentage of the fresh pork consumed in the past has come from these hogs, which weigh 130 to 140 pounds live weight, that the producer has sold his hogs at comparatively small expense.

The packer cannot afford to handle extremely light hogs because the cuts, when cured and smoked, are not merchantable as No. 1 stock because of their undesirable shriveled appearance, also the dressing percentage decreases in accordance with the weight of the animal.

Condemnation.—Cholera losses have not been important lately at the Western Meat Company's plant, indicating that it is under good control, but loss from tuberculosis is such a serious menace that for the past year this company has been charging one-half of the condemnation to the shipper, the company assuming the other half, after allowing full credits for salvage. During 1916 the reports of the Government inspection service showed a total of 25,751 head retained as suspects, or three and two-tenths per cent of all hogs slaughtered. Of this number two and two-tenths were condemned for grease and one per cent for sterilization, this company being unable to use this sterilization privilege advantageously.

Distributing Troubles.—Because of freight rates California packers do no business in pork products outside the State except in a comparatively small section of Nevada and Arizona, while the Middle Western packers have two-thirds of the country's population to draw on. Besides this the heavy demand for pork products from the war zone, especially from Belgium, which has existed for the past two years, and the remarkable demand from manufacturing centers in particular and the whole country in general, has given Middle Western packers an additional advantage over Western concerns inasmuch as none of these factors have benefited the latter concerns on account of freight handicaps.

Needed Education.—Consumers in California still favor Eastern smoked meats because of old standing preju-

Public Sale of Berkshire Hogs

40 Head Selected from
Prominent Western Herds.

Thursday Feb. 15

DAVIS, CALIFORNIA
On University Farm,
under the auspices of

**The
Western Berkshire
Congress**

Consignments of the choicest
animals from such herds as:

Dean Beeman, Woodland, Cal.
D. C. Bunn, Prosser, Wash.
Butte City Ranch, Butte City, Cal.
Clark Bros., Prosser, Wash.
F. L. and L. S. Hall, Ferris, Cal.
A. B. Humphrey, Mayhew, Cal.
James Mills Orchards Corp., Hamilton City, Cal.
H. L. & E. H. Murphy, Perkins, Cal.
Oak Grove Dairy Farm, Woodland, Cal.
Arlington M. Smith, Visalia, Cal.
Chas. M. Talmadge, Newport, Wash.
University of California, Davis, Cal.
Whitehall Estates, Tracy, Cal.
Winona Ranch, Grants Pass, Ore.
Geo. M. York & Sons, Modesto, Cal.

This sale will be preceded by a two days' meeting. Every man interested in Berkshires, or in pure-bred and "better" hogs, is cordially invited to attend the meeting and sale. Both meeting and sale held on the University Farm at Davis, Cal.

For further particulars, Catalogue, etc., address either

W. S. GUILFORD, Pres.,
Butte City, Calif.

or
F. R. STEEL, Sec'y.,
Grants Pass, Ore.

**The
Western Berkshire
Congress**

TAMWORTHS
(The Bacon Hog)

Largest Herd in the State

DUROC - JERSEYS

Mature Stock and Weanlings of both
sexes. Sure to please.
SWINELAND FARM.
W. O. Pearson, Prop. Woodland, Cal.

CALIFORNIA

HOG BOOK

BY W. S. GUILFORD.

A Practical Treatise on Hog
Raising in California.
Price, \$2.00 Per Copy, Postpaid.
Pacific Rural Press, S. F., Cal.

Hog Cholera Serum

I represent one of the greatest Government
Inspected Hog Cholera Serum Plants in the
whole country.

NO BETTER SERUM MADE.
An ounce of prevention is worth a pound
of cure. Find out about this serum today.
Price Right

For particulars address.

CARRUTHERS FARMS,
MAYFIELD, CALIF.

BASSETT'S POLAND CHINAS



For many years, at
widely separated
show rings, under
many different judges
of varying type ideals,
my Poland Chinas
have been consistent
prize-winners. My
herd is large, and I
cull closely. The
animals sent out as
breeders are the very
tops of a large number.
I KNOW that
my kind of Poland
China is a profitable
farmer's hog, for I
send carloads of them
to the packer every
year—uniform in
size, high in quality,
quickly and economi-
cally matured and
finished.
Young stock, \$30 Up.
M. BASSETT,
Bx. 1, Hanford, Cal.

GRAND CHAMPION SHOW.
P. P. I. E. 1915; Sacramento 1916.

Digester Tankage

Send for Sensible folder on feeding hogs

Western Meat Company

Animal Food Dept. 704 Townsend St., San Francisco

dices which are no longer sound, as with but few exceptions California hogs are not fed on tule roots, acorns, etc., as they were a few years ago.

Constructive Needs.—The pork department of his concern has never been uniformly profitable, Mr. Washburn said, and he believes the same situation exists with other coast packers. But he has always considered this branch would react to constructive up-building and the first results of this are just apparent. He believes that this can be carried further by more direct contact of producer and packer and stated that he was willing to work along any legitimate line that can be suggested for the ultimate benefit of the industry.

The Future.—As long as the present export demand continues, Mr. Washburn said, we may expect high prices, but he believes producers will realize more money for their work when feed prices again become normal, even though the hog market be relatively lower.

Summarizing Handicaps.—In spite of the fact that coast packers are paying, on the average, as good prices as they are in the East, Mr. Washburn summarized the following disadvantages which must be overcome: Excessive condemnations, lower yields, poor demand for fresh pork cuts and sausages, prejudices against California cured meats and lard, excessive percentage of light, unfinished hogs marketed.

Buy for Money.—On the subject of "Marketing" (again from the packer's viewpoint) Frank M. Hauser of Los Angeles impressed the audience with the fact that there is a good deal of difference in different loads of hogs. Packers, he said, bought hogs to make money out of them and they paid most for those hogs that cut to the best advantage. They might want one type of hog today and another type tomorrow. Generally his firm likes to see the hogs before buying. Hogs had been brought to their packing house, he said, which they did not want at any price.

Poor Hogs.—As an example of what the packers do not want Mr. Hauser referred to the acorn hog, which shrinks badly and whose meat is flabby; also to the alfalfa-fed hog, having had no grain, which is nearly as bad. In regard to size Mr. Hauser stated that too many hog raisers market their hogs too young, thinking that they are saving feed by such practice. His advice is to hold them till they are mature, as the increased gain in flesh will more than pay the extra cost of feed.

FOR SALE

At the

Pioneer Ranch, Sierraville, Cal.

50 HEAD OF THOROUGHbred DURHAM and HEREFORD BULLS

Calved last April and May, 1916; foundation stock from the Sparks herd of Reno, Nev., and best Eastern sires we brought out last Spring from the East. Three head of my fine thoroughbred Hereford bulls cost us \$2,500 there.

THE A. S. NICHOLS CO.,
SIERRA COUNTY, CAL.

Stockyards.—Col. Harris Weinstock in his address advocated a co-operative marketing association, along the lines outlined in his annual report as reported, in these columns in the issue of January 13. He thought that a stockyards under the control of the State Market Bureau at some central point in the State, such as Sacramento, would be effective in remedying present marketing troubles.

On the same subject D. O. Lively stated that there is more criticism against union stockyards than for them. Theoretically they should do good, as when a packer buys in the country he expects to get hogs cheap enough to pay the expense of the buyer. But where there are stockyards, neighborhood shipments can be made and the man with the small bunch can get as much for his hogs as if he had a carload. He said that when the question of stockyards was taken up with the railroads in San Francisco they opposed them on the grounds that if they assisted the stockyard idea it would necessitate their assisting other interests. Packers there are also divided as to the advisability of stockyards.

Squeals Wasted.—Producers, stated Wm. Bernstein of Hanford, have a just kick against California packers on the count that they do not utilize all of the hog in slaughtering as they do in the East. He classed himself among the advocates of purebred hogs, believing that it is the poor hog that brings prices down. After a man gets purebreds he not only raises better hogs but feeds and cares for them better.

Mr. Bernstein said that one pound a day gain on a hog is not what we should strive for; a gain of two pounds is small enough.

Joe Biddle, also of Hanford, thought that Indian corn should be more generally used as a hog feed in the State. He also advised precaution against disease, as government inspectors take nobody's word.

To Adjust Buying.—At the suggestion of J. L. Thatcher of Riverside a resolution was passed asking the president to appoint a committee of three growers and a like committee of packers to work out a plan whereby hogs will be graded and paid for according to grade. President Cunningham appointed J. L. Thatcher, R. P. Peters and Wm. Bernstein as the growers' committee, and Frank M. Hauser, J. C. Good, R. Scott and F. L. Washburn as a packers' committee. It was agreed among the packers that they would try to figure out a percentage basis and buy hogs on the percentage of yield. This percentage will be decided upon later.

Livestock Shows.—Annual livestock shows at Los Angeles and San Francisco were endorsed in a resolution presented by J. W. Jennings of Tehachapi, to fit in with the Portland and Denver livestock shows.

The first day's meeting was followed by a theatre party and the second was given over to a sight-seeing trip of Los Angeles packing houses. At the Cudahy plant the visitors were shown the "killing" room and a cutting demonstration was given at Wilson and Company's plant, after which the Hauser Packing Company's plant was inspected and a sumptuous luncheon served, which completed the program.

Paicines Ranch Co.



San Francisco,

Offers for sale fifty (50) head of eighteen months and two-year-old registered Shorthorn bulls; also a select lot of weanling registered bulls, sired by such bulls as Fond Lavender, College Count 3rd, Besie's Council and Whitehall of Orange. For prices and particulars apply to

DAVID J. STOLLERY

320 Sharon Bldg.,

California.

Hillcrest Stock Farm Shorthorn Cattle, Shropshire and Merino Sheep



King Lancaster, sired by King Edward, grand champion bull State Fairs, 1909-10-11.

Shorthorn Bulls for Sale, sired by such noted bulls as King Lancaster, Knights Perfection, Greenwood Knight and Greenwood King. Nearly all offsprings of the famous King Edward.

These Bulls are conceded to be the best offering ever made from the Hillcrest Stock Farm.

For Particulars Apply—

T. S. GLIDE
Proprietor.

Davis, California

Carruthers Farms First Annual Sale of SHORTHORN CATTLE

will be held at the farms near

MAYFIELD, May 2nd, 1917

The Bulls:

20 Bull calves of rare Scotch breeding will be sold in the sale, two of them sired by Count Avon, the sire of our herd bull, Count Glory; there will also be six sons of Mayflower Sultan—everyone a good one; the balance are young bulls from sires of a national name.

The Females:

35 head will be sold, among them some of the greatest cows of the breed, rich in Crookshank blood; some of the tops will be in calf to Count Glory, California State Fair Grand Champion 1916; there will be two heifers sired by Count Avon, the sire of Count Glory; several heifers sired by Mayflower Sultan; eight cows in calf to Count Glory—all of them being of the rarest breeding. In this sale will be sold more Crookshank cattle than has ever been sold in a sale in the West. Make arrangements to attend the sale, and look over this great lot of Shorthorn cattle.

CARRUTHERS FARMS

Mayfield, Cal.

SHORTHORNS

35 Choice Service Bulls 15 SCOTCH AND SCOTCH-TOPPED COWS AND HEIFERS.

All registered and tuberculin tested.

A Few Choice Berkshires of Either Sex for Sale.

H. L. & E. H. MURPHY, Perkins, Sacramento Co., Calif.

HOPLAND STOCK FARM REGISTERED SHORTHORN BULLS

A fine lot of individuals. Ready for service on the range. Registered Berkshires, Holstein Bulls from high-testing cows.

San Francisco Office,

1210 Flood Bldg.

CATTLE FEED FOR SALE

I have both wild feed and hay to be sold together, and fed out by owner. Write me at once for prices, etc.

JAS. McCORD,

Hanford, Cal.

California Hog Book

Price, \$2.00 per Copy, Postpaid.
PACIFIC RURAL PRESS, S. F.

Live Stock and Dairy Notes.

[Livestock breeders all over the State are invited to send on postal cards, notes regarding their sales, State and County Fair intentions, new stock, etc.]

DAIRYING AND DAIRYMEN.

A. Wharton of Tulare received a carload of registered Holsteins from New York last week.

M. M. Holdridge of Stanislaus county has recently sold a registered Holstein bull to Theo. Heurlin of Escalon.

The monthly reports of eight creameries operating in Kings county show that there were \$2,000,500 paid to dairies in that county during 1916 for butterfat.

A report from Stanislaus county states that a shipment of three Dutch Belted cows has just been made from the Strader herd to parties in New York.

Over 100 head of purebred Holsteins have just been imported by Geo. A. Smith of Corcoran from Liverpool, New York, according to a dispatch from that place.

The registered Jersey two-year-old Interested Jap's Santa, owned by the Univ. of Cal., has recently completed a year's test with 9,052.5 pounds milk and 588 pounds fat.

The Jersey Farm Dairy at Fresno is remodeling its city distributing plant. A new system of pasteurization will be installed as well as the interior of the building remodeled.

The 59 grade cows and three registered Holstein bulls sold at auction by the Gottshall Land and Cattle Co. at Ripon recently averaged \$111.29. The top price for cows was \$175.

Deputies of the State Veterinarian who have been testing the dairy herds in the San Jose district report that 20 per cent of all animals tested have been found to be reactors. A total of 975 were tested.

The Orland Cheese and Butter Co. report an increase in their business during December, 1916, of 50 per cent over that of the same month in 1915. During December, 1916, they purchased 48,005 pounds of fat.

Meetings of dairymen at Chico, Gridley and Nord will be held during February by the campaign committee of the Northern California Milk Producers' Ass'n. The work of soliciting memberships will start at an early date.

The high record in the Stanislaus County Cow Testing Ass'n for the past month was made by the registered Holstein cow Abbie, owned by H. E. Cornwell. She produced 2635 pounds of milk containing 100.01 pounds of fat.

Meetings will be held at the following places in Yolo county by organizers of the Northern California Milk Producers' Ass'n: Yolo, Jan. 26; Woodland, Jan. 27; Clarksburg, Jan. 30; Esparto, Feb. 3 and Willow Oak Park Feb. 8.

At the annual meeting of the stockholders of the Exeter Creamery association the report was given out that the creamery now has 175 patrons and 107 stockholders, also that 200 per cent more cream had been handled in 1916 than in 1915.

An agreement has been entered into by the Danish Creamery at Fresno, the Riverdale Co-operative Creamery at Riverdale, and the Dairyman's Co-operative Creamery at Tulare whereby all of the business transacted by those firms in Los Angeles will be under the firm name of Challenge Cream and Butter Ass'n.

A letter has been received from R. M. Hobbs, director of the Cream Pooling Ass'n of Madera county, in which he says that the tardiness of the creamery who was the successful bidder for the association's cream caused a delay of 15 days in the commencing of operations. He says that because the Chowchilla creamery did not put in the highest bid, many dairymen from that district have dropped out. As the successful bidder has put up a bond of

\$5,000 and as there are many new dairymen joining the association, he does not believe there is much danger of the association disbanding.

Ernest Otto McClure, writing from Santa Ana, where he recently moved to from Modesto, reports the following sales of registered Holstein bulls: a son of King Pontiac Netherland Segis to H. Beatty, Santa Ana, also his dam Hartog Spofford to the same party; a bull calf to the Tuolumne Lumber Co., Modesto; one to Mrs. K. McClure, Modesto; one to Mrs. A. A. Wallis and one to Mrs. Geo. Maze; also three to Mr. S. Youngall of Modesto.

At the annual meeting of the Ferndale Cow Testing Ass'n held at Ferndale it was reported that there are 700 cows on the waiting list and that farmers at Arcata with 500 cows are anxious to join the Ferndale association. It is probable that three testers will be employed the coming year. J. W. Coppini offered a registered Jersey bull calf to the highest testing herd entered in the Cal. Cow Testing Competition that was also a member of the Ferndale association.

SWINE AND SWINEMEN.

The members of the Kings County Poland China Breeders' Ass'n have decided to hold their next consignment sale of Poland Chinas at Hanford, March 7.

C. M. Slocum of Glenn county has left for the Middle Western States where he will purchase about 80 head of registered Duroc hogs for California breeders.

Blackleg and hog cholera have both made an appearance in Kings county during the past month according to the monthly report of county livestock inspector Dr. Frank Griffith.

J. W. Sefton, who is reported to have the largest herd of Tamworth hogs in the State at his San Diego county farm, contemplates increasing the size of his present herd on his ranch in Imperial county.

Arlington M. Smith, president of the Tulare County Swine Raisers' Ass'n and prominent Berkshire breeder, has issued an open letter to all swine growers in that district urging them to co-operate in the restriction of hog cholera, some evidence of which has been found in the county.

The Berkshire dispersal sale held by Geo. P. York and Son at Modesto recently was well attended and the average received for the offering was satisfactory. Arlington Smith of Visalia was a buyer of three good ones. George Kounias of Modesto purchased the son of Grand Leader 2nd which was offered. The top price for sows was \$77.50 and the average for gilts and young boars was \$23.

BEEF CATTLE.

Los Angeles buyers have been purchasers of beef cattle in the Fallon district of Nevada recently. One shipment of five carloads is reported.

Announcement is made that the government has issued an order permitting the pasturing of 550 additional cattle in the Santa Barbara National Forest.

Inyo county reports the shipment last year of 3000 cattle to market, and consumed 1500 at home. Thirty thousand lambs were shipped and \$50,000 worth of wool was sold.

The Federal Bureau of Animal Industry has obtained an experimental ranch of its own on which to carry on range investigations. This ranch was set apart from the public domain in Idaho, and is to be occupied next summer.

The Farm Bureau of San Joaquin county have approved a county ordi-

nance which demands the placing of a stamp on all meat, showing the name of the butcher. The ordinance would also require an inspection of all slaughter houses every three months.

At the annual meeting of the American Shorthorn Breeders' Ass'n the appropriation for prize money at the Pacific International Livestock Show, to be held December 19-24, 1917, at Portland, was set at \$3750, an increase over last year's appropriation of \$1250.

An association to be known as the Tehama County Livestock Association has been organized at Red Bluff. Among other things which the new association will investigate is the cost of production of livestock under range conditions in order that the recent increase in grazing fees by the government may be more intelligently opposed.

Promoters of the livestock packing house at Fresno are complaining that they do not meet with co-operation from livestock raisers of the valley. They ask that a site for the plant be donated by the business and farming interests of Fresno and vicinity, but say that stockmen are not doing their share of contributing toward the financing of the project.

An agreement was entered into by the large packers at the annual meeting of the National Livestock Association held at Cheyenne, Wyoming, last week whereby all opposition to a government investigation of meat marketing methods is to be withdrawn. This is a result of the campaign for federal investigation fathered by that association during the past year.

SHEEP.

A report from Wheatland states that practically all of the spring clip in that district has been contracted for at 31 cents a pound.

The Ed Fraser flock of sheep near Wheatland has been sold to William Tharp of Marysville at a reported price of better than \$10 a head.

Sheepmen in the vicinity of Winnemucca, Nevada, are experimenting with cottonseed as a feed for their flocks during the present cold weather. Ewes are reported to be valued at \$14 a head there at this time.

The National Wool Growers' Ass'n at their recent convention at Salt Lake City indorsed the idea of seeking a standardization of wool and petitioned the Department of Agri-

culture to fix a definite standard by which wool should be sold on American markets.

MISCELLANEOUS.

The Fresno county committee of the Central Stockmen's Ass'n has launched a campaign for more members in that district, feeling that all stockmen are benefited by the work of the association and should lend moral and financial support.

D. O. Lively reports recent sales through his office of Poland China hogs to South American points; two Holstein bulls to Nicaragua; two jennets, thirteen polled Rambouillet sheep, one Shorthorn bull and a grade milk cow to Hawaii. Local transactions have embraced the sale of three cars of stock hogs to go on the rice fields and the sale of a number of bred gilts to a banker for boys who are engaging in the swine industry. An additional transaction was the sale of one hundred and six head of Shorthorn cows to W. J. Hammon of Chico.

The Imperial Valley is rapidly growing in importance as a cattle country. It is becoming the recognized feeding ground for cattle from Arizona, New Mexico and old Mexico. It is said about 2,000 cattle per month are being driven into the Valley to be fattened for market, and they find a ready sale when fat to Los Angeles packers. Cattle are said to fatten rapidly on the alfalfa and grain grown in the Valley. The dairy business in the Valley is also a growing one. About 8,000,000 pounds of butter is produced annually in Imperial county. Of the 115,000 cattle in the Valley, it is estimated that 32,000 are milk cows. Butterfat was sold to the extent of \$150,000. Hogs were sold to the extent of \$125,000 and its honey crop reached 15,000 cases.

BERKSHIRE SALE AT DAVIS.

The catalog for the Western American Berkshire Congress sale which is to be held at Davis Feb. 15 has just been received, as well as a program of the meetings which are to be held Feb. 13 and 14.

There are 38 animals consigned all of which are to be bred sows of the most popular breeding and from the leasing herds of California and the Northwest. Among those who will be present from the East will be A. J. Lovejoy, one of the foremost authorities on Berkshires in particular and hog management in general.

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Herbert F. Dugan
1170 Sutter St. San Francisco

RATION FOR A JERSEY HEIFER.

To the Editor: I have a grade Jersey heifer fresh two weeks ago, and now giving about two gallons of milk daily. She has all the alfalfa hay that she will clean up quickly twice a day, and I wish to know if you will kindly tell me of an economical, balanced ration to feed her in addition, using beet pulp with molasses, copra bran, or any combination that is easily procurable in Los Angeles.—A. B. H., Covina.

At present prices mix up a ration of three parts beet pulp to one part rolled barley, or one part coconut meal. Mix the feeds dry first and then moisten with water so that after standing a few hours the mixture is moist but not sloppy. As your cow is a Jersey, and probably producing a high-testing milk, also a heifer, one pound of this ration to each four pounds of milk produced should be about right. If you have any volunteer grass or other green feed let her have access to that also.—Eds.

Word comes from Hollister that steps are being taken for the holding of a county fair there this year.

LIVESTOCK DIRECTORY.

Rates in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

SWINE.

Poland Chinas.

SMITH'S POLAND-CHINAS—Sows and gilts bred to Joker, First Prize Boar at the Wisconsin State Fair, 1915. These sows and gilts, sired by Iowa Wonder, who is a son of A Wonder, the most celebrated Poland-China boar, living or dead. Litters from this mating are the best I have ever seen anywhere. Prices low quality considered. Will sell one or a carload. As a special inducement each purchaser will be given a year's subscription to the American Swineherd, the best swine paper published, and a copy of the Handbook on the Sow; also a copy of the Pig Feeders' Manual. Geo. A. Smith, Corcoran, Cal.

MAKE BIG MONEY with our Big-type Poland-Chinas. Smooth, easy feeders that make greatest weight in shortest time at lowest cost, topping the market at 225 lbs. in 6 months. 300 head, both sexes, all ages, reasonable prices. Best Eastern blood lines. Satisfaction guaranteed. Ranch in Tulare county, but address owner, R. H. Whitten, 610-A Security Building, Los Angeles.

GRAND CHAMPION SUPERBA POLANDS—A few choice spring Superba polands ready for service. Sows bred to Superba for fall litters. Prices reasonably low. Rough's Greenfields, Arlington Station, Riverside, Cal.

REGISTERED POLAND-CHINA BOARS of serviceable age. A Wonder and Chief Picture breeding. Every animal guaranteed. Price \$25. Bar N. Ranch, E. A. Noyes & Son, Props., Sutter, Cal.

POLAND-CHINAS—Bred gilts, \$15; young boars, \$10 and \$15; bred sows, \$25. Weanlings, either sex, \$8. Registered and crated, purchaser to return crates. E. A. Hall, Watsonville, Cal.

REGISTERED POLAND CHINAS—Young boars ready for service. Weanling pigs, both sexes. Prices attractive for quick sales. J. H. Cook, Paradise, Cal.

REGISTERED POLAND-CHINAS—Prolific, pabulous profitable porkers. Choice boars now ready for service, \$25 each. Weanlings, \$15. Dr. J. A. Crawshaw, Hanford, Cal.

LAKEVIEW STOCK FARM POLAND CHINAS are money-makers. Satisfaction or money refunded. Geo. V. Beckman & Sons, Lodi, Cal.

POLAND CHINAS—Big type. Shoats, either sex, or in unrelated pairs. O. L. Linn, Linview, Route A, Modesto, Cal.

POLAND-CHINAS—Big type combined with quality. Choice bred sows, gilts, boars. W. D. Treshitt, Box 82A, Hanford, Cal.

REGISTERED POLAND CHINA SWINE—Prize-winners. Finest stock in the State \$20 up. M. Rasmussen, Hanford, Cal.

POLAND-CHINAS—Stock for sale at all times. We please you or refund your money. W. A. Young, Lodi, Cal.

BIG-TYPE POLAND CHINAS—Stock from the best herds of the Middle West. N. Hauck, Alton, Humboldt Co., Cal.

REGISTERED POLAND-CHINAS and Duroc Jerseys. Cholera immune for life. T. H. Beckman, Lodi, Cal.

POLAND-CHINAS—Large type. The Browning Stock Farm. W. H. Browning, Woodland, Cal.

DEACON RANCH POLAND CHINAS—Prize winners. Young stock reasonable. Box 27A, Davis, Cal.

KNOB HILL STOCK FARM—Registered Poland-China Swine. A. M. Henry, Farmington, Cal.

AMAWAGE FARMS—Poland-China hogs and Holstein cattle. G. H. Loughery, Visalia, Cal.

POLAND-CHINAS—Prize-winners. Money-makers. W. Bernstein, Hanford, Cal.

REAGANS RANCH herd of registered Poland Chinas. W. J. Hanna, Gilroy.

REGISTERED POLAND-CHINA HOGS—J. A. Clark, R. 4, Lodi, Cal.

Berkshires.

GRAPEWILD FARM BERKSHIRES—World's Fair Grand Champion Grand Leader 2nd heads our herd, not only himself a champion, but the sire of Champions. At the 1916 California State Fair his daughters won first in all of the senior sow classes, including the Grand Champion Sow. At the 1916 Oregon State Fair a Grand Leader sow was Junior Champion. We are offering a number of choice boars of exceptional breeding and are also booking orders for Fall pigs. A. B. Humphrey, Escalon, San Joaquin Co., Cal.

WINONA BERKSHIRES—Several fine Spring, Summer and Fall daughters and sons of Winona Champion 5th out of daughters of Rogueland's Longfellow. Quality, breeding, size. Reasonable price. Write us, Winona Ranch, Rt. 1, A-Box 10, Grant's Pass, Oregon. F. R. Steel.

50 BRED SOWS AND GILTS—50 of true Berkshire type and quality, bred to Grand Champion boars, are included in our private sale list now ready for mailing. Write for it today. Silver Birch Farms, Box R. P., Newport, Wash.

REGISTERED BERKSHIRES—Progeny of Improver B. Young stock now ready for sale. Start your herd with breed and strain of established reputation for California conditions. Geo. G. Meckfessel, Berlin, Cal.

BERKSHIRES—I have one of the best herds on the Pacific Coast, including Grand Champion Sow, Reserve Grand Champion Boar under one year, Third Aged Boar, etc. Frank A. Brush, Santa Rosa, Cal.

FOR SALE—Registered Berkshire Boar Suisun Rival Duke 2nd, 203376. Farrowed May 18, 1914. Apply Geo. McNally, Middletown, Lake County, or 278 Russ Building, San Francisco.

CHOICE REGISTERED BERKSHIRES—Extra fancy and growthy August boars and sows, \$25 each. Bred sows, service boars and gilts at reasonable prices. W. H. Waugh, Riverside, Cal.

IMMUNIZED NORMANDY BERKSHIRES.—Good type. Breeding stock, any age, for sale at all times. Cash in guarantee. Arlington Smith, Visalia, Cal.

BERKSHIRES—Bred sows and weanling pigs. Write for prices and pedigrees before buying. Butte City Ranch, Box P, Butte City, Glenn Co., Cal.

REGISTERED BERKSHIRES—Special offering. Three service boars at prices to move them quick. Write us. Imperial Stock Farm, Morgan Hill, Cal.

SPECIAL—Six good service boars and a few sows in pig to Premier Leader due to farrow in October. Geo. M. York & Son, Berkshire breeders, Modesto, Cal.

ROSE CREST BERKSHIRES—Rivals Champion Best blood. Own and bred gilts. Service boars. F. L. Hall, Ferris, Cal.

CARRUTHERS FARMS BERKSHIRES.—Cholera immune. Second annual sale August 2, 1917. Mayfield, Cal.

30 REGISTERED BERKSHIRES—Boars and gilts for sale. J. H. Benedict, Lemoore, Kings county.

HOPLAND STOCK FARM—Registered Berkshires. Prices on application. Hopland, Cal.

REGISTERED BERKSHIRES—Young stock for sale. F. W. White, Elk Grove, Cal.

Duroc-Jerseys.

DUROC JERSEYS—My hogs won highest honors at State Fair, taking first prize herd, first prize sow, second prize boar. Were the largest of their age exhibited. Stock all ages for sale. Prices reasonable. Breeding and satisfaction guaranteed. Haden Smith, Route 1, Box 84D, Woodland.

DUROC JERSEYS FOR SALE—Third Prize Senior Yearling at 1916 State Fair. One choice 8-month-old boar. Weanling boar pigs. Enterprise Stock Farm. H. P. Eakle, Jr., Woodland, Cal., R. D. 3.

TWO FINE GILTS—Farrowed June 17. Sire, "California Keen 5th" (Royal Muncie). Dam, "Fair Lula," prize winner wherever shown (Crimson Wonder). Only \$25 each. W. P. Andrews, Modesto, Rte. A.

REGISTERED DUROC-JERSEYS—Service boars from prize-winning stock are money-makers. They grow faster. New England California Corporation, Ripon, Cal.

CROLEY'S BALANCED HOG FEED—The cheapest feed to fatten hogs. Write Geo. H. Croley Co., Inc., Live Stock Supplies, 631-637 Brannan St., San Francisco.

DUROC JERSEYS—Herd boars. E. N.'s Colonel and Tulare Boy. Sweepstakes winner at Fresno, 1915. Choice breeding stock. J. P. Walker, Visalia.

RANCHO RUBIUS DUROCS—All sold except a few July and September gilts. Extra good. Write for prices. Elmer Lamb, Ceres, Cal.

REGISTERED DUROCS of guaranteed breeding. All ages. Weaned pigs, \$10. H. E. Boudier & Son, Napa.

HEAVY BONED DUROCS—A few service boars for sale. Ormondale Co., Route 1, Redwood City, Cal.

REGISTERED DUROCS—Crimson Wonder stock. Young stock, both sexes. L. D. Collins, Denair, Cal.

REGISTERED DUROC-JERSEY SWINE—Both sexes. Big-boned type. B. F. Kendall Hardwick.

WINTON DUROC-JERSEY FARM, Winton, Cal.—High-class pure-bred hogs both sexes any age.

RIVER BEND FARM—Registered Durocs are superior. Big Type. St. Helena, Cal.

DOS HERMANOS REGISTERED DUROCS—Duveneck & Pickersgill, Ukiah, Cal.

CURTIS DUROCS of either sex at all times. E. C. Curtis, Napa, Cal.

REGISTERED DUROC-JERSEY SWINE—Frederick M. Johnson, Napa, Cal.

DUROCS—Big type, both sexes for sale. Ed. E. Johnson, Turlock, Cal.

REGISTERED DUROC-JERSEYS—S. S. Southworth, Napa.

Yorkshires.

LARGE YORKSHIRES—Choice spring boars, gilts, and weaned pigs from Champion sow P. P. I. E., or from breeding of champion boar and sow, Sacramento, 1916. If you see them grow you will like them. Riverina Farms, Paradise Road, Modesto, Cal.

LARGE YORKSHIRES—The ideal hog for the progressive farmer. Young stock for sale. A. L. Tubbs Co., Calistoga, Cal.

Chester Whites.

BILLIKEN HERD OF CHESTERS—The big prize-winners at the 1916 California State Fair. A real utility breed that makes money for its owners. A few young service boars left; twenty young, open gilts that will be bred as may be desired by buyer. Write for the booklet Chester Whites. C. B. Cunningham, Mills, Cal.

REGISTERED IMPROVED CHESTER Whites—Grizzly Bear Ranch, East Auburn, Cal.

Essex.

LITTLE BLACK ESSEX—Service boars and weanlings. Only herd in the State. Limited supply. Yolo Essex Herd, L. W. Millsap, Yolo, Cal.

Hampshires.

BELLA VISTA HAMPSHIRE SWINE—from prize-winning stock. J. W. Henderson, First National Berkeley.

DAIRY CATTLE.

Holsteins.

FOR SALE—From 1 to 100 extra fine, straight, well-marked, light colored, highly bred, registered Holstein heifers from 6 to 18 months old. They are rich in the blood of King of the Pontiacs, Pontiac Korndyke, Hengerveld De Kol, Rag Apple Korndyke 8th, King Segis and other most celebrated sires of the breed. Prices very reasonable. Write Geo. A. Smith, Corcoran, California.

25 HIGH-GRADE HOLSTEIN HEIFERS, sired by Creamcup Sir Walhalla Pontiac 96169, coming with second calf by a high-class bull. All tuberculin tested. Also 35 yearling heifers, sired by same bull. Terms and prices, apply to W. H. Nichols, 2552 Haste St., Berkeley, Cal.

FOR SALE—A bull from a 28½-lb. dam who has three A. R. O.'s up to 27 lbs. Is one year old; fine individual; ¾ white. Sire a good son of King of the Pontiacs. Will sell at a bargain. Also other bulls from \$75 up from A. R. O. cows. Ernest Otto McClure, Rt. 6, Box 5B, Santa Ana, Cal.

REGISTERED HOLSTEINS—Herd sire King Korndyke Hengerveld Ormsby 7th, 86623. His full sister as Junior 3-year-old made 32.04 lbs. butter in 7 days. The record of his dam and his sire's dam averaged 30.98. George Kounias, Modesto, Cal.

REGISTERED HOLSTEINS—Grandsons of King Segis and of world's record cow Creamelle Vale. Will build up the production and value of your herd. Write or call and see them. F. H. Stenzel, San Lorenzo, Cal.

40 HEAD of high-class heifers—26 Holstein, 9 Jersey, 4 Durham, 1 Brindle, ranging in ages from six months to thirty. Out of high-class dairy stock and in fine condition. Almondale Farm, Modesto, Cal.

FOR SALE—Thoroughbred Holstein Bull, Sir Clifden Korndyke No. 106585, H. F. H. B., four years old, at a bargain. Inquire F. G. Anthony, Good Templar's Home for Orphans, Vallejo, Cal.

REGISTERED BULLS by King Korndyke Pontiac and out of A. R. O. cows. A splendid selection old enough for service. Write or call. J. H. Harlan, Woodland, Cal.

TULARE GUERNSEY AND HOLSTEIN FARM is offering young bulls of both breeds. Excellent breeding. Prices reasonable. W. J. Higdon, Tulare, Cal.

A NICE YOUNG SON from El Prado Wayne Colantha and from a 24.26 lb. dam. J. W. Benoit, Breeder of Registered Holsteins, Route C, Modesto, Cal.

THE MCLOUD RIVER LUMBER CO., McCloud, Cal.—High-class thoroughbred Holstein bulls for sale. Write for prices and pedigrees.

THE HENDERSON CO.—Breeders and importers. Registered Holsteins. Sacramento Bank Bldg., Sacramento.

BREEDERS OF REGISTERED HOLSTEIN cattle and Berkshire pigs. Whittier State School, Whittier, Cal.

REGISTERED HOLSTEINS—A. W. Morris & Sons, Corp., Importers and Breeders. Woodland, Cal.

CREAMCUP HERD—Registered Holsteins Pontiac bull calves. M. Holdridge, Modesto, Cal.

SUNNYSIDE HERD—Registered Holstein cattle. R. F. Guerin, R. 3, Box 58, Visalia, Cal.

REGISTERED HOLSTEIN CATTLE—E. E. Freeman, Route B, Modesto, Cal.

REGISTERED HOLSTEIN BULLS for sale. Sunnyside Ranch, Willits, Cal.

REGISTERED HOUSTON BULLS for sale. C. L. Morse, Route B, Modesto, Cal.

BREEDERS OF REGISTERED HOLSTEIN CATTLE—McAlister & Sons, Chico, Cal.

REGISTERED HOLSTEIN BULLS, \$50 to \$150. Glorietta Stock Farm, Woodland, Cal.

REGISTERED HOLSTEIN BULLS from A. R. O. dams. B. F. Anderson, Modesto, Cal.

CHOICE HOLSTEIN bulls for sale. No females. McIlbrae Dairy, Millbrae, Cal.

REGISTERED HOLSTEIN-FRIESIAN CATTLE—J. M. Campbell, Escalon, Cal.

BREEDER OF HOLSTEIN-FRIESIAN CATTLE—Dr. Ben Stetson, Napa, Cal.

A. R. O. HERD OF HOLSTEINS—Alex. Whaley, Tulare, Calif.

Jerseys.

HARDY, NORTHERN GROWN, unregistered Jersey cattle. Twenty years of careful breeding and selection has given us butter cattle, with good udders and teats. We are breeding all the time and will sell our surplus at prices which enable them to pay for themselves in a short time. Inspection invited. Correspondence solicited. Lake View Farm, Loleta, Humboldt Co., Cal.

JERSEY BULLS AND BULL CALVES—Sons and grandsons of 2 and 3-lb. cows. None better. Cheap for quality. N. H. Locke, Lockeford, Cal.

VENADERA HERD OF JERSEYS offers calves from Register of Merit Cows with official yearly records. Write for list of bulls. Guy H. Miller, Route 1 Modesto, Cal.

REGISTERED JERSEYS—Herd established 1868. Young bulls from best cows. Rancho Dos Rios, R. 2, Modesto.

BREEDER OF REGISTERED JERSEY Cattle—Duroc Swine. Young stock for sale. W. J. Hackett, Ceres, Cal.

JERSEY BULLS AND HEIFERS from Register of Merit Cows for sale. C. G. McFarland, R. 2, Tulare.

YOUNG REGISTERED JERSEY BULL Calves at reasonable prices. O. J. Ames, Oakdale.

JERSEY BULLS—Sons of Gertie's Lad and Gertie's Son's Victor. A. A. Jenkins, Tulare, Cal.

REGISTERED JERSEYS—Young bulls and bull calves. T. B. Purvine, Petaluma, Cal.

JERSEY BULLS from Register of Merit cows. C. D. Hayworth, Modesto, Cal.

Guernseys.

PACIFIC GUERNSEY HERD—Cattle selected from best imported and Advanced Register Stock. Now offering choice bulls. C. S. Rasmussen, Loleta, Cal.

EDGEWOOD FARM GUERNSEYS—First in the show ring and in official records. Few animals of either sex for sale. Edgewood Farm, Santee, Cal.

BELLA VISTA GUERNSEYS—Males from A. R. dams, \$100 up. J. W. Henderson, 1st National, Berkeley.

Ayrshires.

AYRSHIRES—Registered; all ages. E. B. McFarland, 412 Claus Spreckels Bldg., San Francisco.

AYRSHIRES—Registered—75 head. All ages. Young stock for sale. Le Baron Estate Co., Valley Ford, Cal.

BEEF CATTLE.

SHORTHORNS—Herd headed by grandson Whitehall Sultan. Calves sired by \$10,000 Prince Imperial for sale. One or a carload for sale. Get our prices before buying. Butte City Ranch, Box P, Butte City, Glenn Co., Cal.

SCOTCH AND SCOTCH-TOPPED SHORTHORNS—We have the largest herd of straight Scotch cows in California. Foundation stock of both sexes for sale; also a choice lot of range bulls. Barco Ranch, Hollister, Cal.

1500 HEAD HIGH GRADE HEREFORD cows. Some calves by their side. 300 head fine yearling steers. 200 mixed weaned calves. Sixty head exceptionally well-bred grade Hereford bulls. Ten head of very choice registered Hereford bulls ready for service. G. R. Patton, Porterville.

D. O. LIVELY, 215 Hobart Bldg., San Francisco, offers for sale a registered Hereford bull twenty-two months old and a registered Shorthorn bull coming three years old. Correspondence solicited.

REGISTERED YEARLING SHORTHORN Bulls—Heavy-boned, thick-meated Scotch and Scotch-topped breeding. Ormondale Co., Route 1, Redwood City, Cal.

BREEDERS OF REGISTERED SHORTHORNS—Milk strain. Choice young stock for sale. John Lynch Ranch, Box 321, Petaluma, Cal.

REGISTERED AND UNREGISTERED Shorthorn bulls for sale. Paicines Ranch Co., 320 Sharon Bldg., San Francisco.

INNISFAIR DAIRY SHORTHORNS—Registered young bulls for sale. Alexander & Kellogg, Suisun, Cal.

HOPLAND STOCK FARM—Registered Shorthorns. Prices on application. Hopland, Cal.

REGISTERED HEREFORDS—H. H. Gable, Diamond G Ranch, Esparto, Cal.

SIMON NEWMAN CO., Breeders of Registered Herefords, Newman, Cal.

GEORGE WATTERSON—Breeder registered Herefords. Bishop, Cal.

SHORTHORNS—Carruthers Farms, Mayfield, Cal.

SHORTHORNS—Fair Oaks Ranch, Willits, Cal.

SHEEP AND GOATS.

F. A. MECHAM ESTATE, Petaluma, Cal.—Breeders and Importers of Shropshire, Rambouillet and American Merinos, both sexes. Also Red Polled cattle. Take electric car at Petaluma or Santa Rosa for Live Oak Ranch.

SHROPSHIRE—Ewes and Ewe lambs for sale. International winner heads flock. Butte City Ranch, Box P, Butte City, Cal.

KAUPKE BROS., WOODLAND, CAL.—Breeders and Importers of Hampshire sheep.

DORSETS AND ROMNEYS—Dorset ram lambs for sale. John E. Marble, Los Angeles.

BISHOP BROS., SAN RAMON, CAL.—Breeders and Importers Shropshires.

CHAS. KIMBLE—Breeder and Importer of Rambouillets. Hanford, Cal.

HORSES AND MULES.

REGISTERED SHIRES—Black Hawk Stock Farm. Importers and Breeders, Easton & Ward, Proprietors, Burlingame, Cal.

MISCELLANEOUS.

SAN FRANCISCO LIVESTOCK EXPORT Co., Eugene B. Croley, Manager, solicits foreign orders for purebred registered and merit breeding animals and fowls. California has great diversity of climatic and other conditions that enable us to select animals that have been raised under conditions similar to those of the location for which they are intended. We should be informed regarding these conditions and be allowed ample time to make selections. Nearly all disappointments in buying afar are the result of insufficient information as to conditions or to lack of time for proper selection. Our plan and terms for "raising animals to order" to fit into peculiar foreign conditions is worth investigating. References: Dun or Bradstreets, or San Francisco banks. Office, 319 Underwood Building, 525 Market St., San Francisco.

LIVE STOCK INSURANCE—Registered live stock and farm work horses should be insured. The Hartford Company, strongest in the world, writing live stock. No trouble to answer questions. D. O. Lively, special representative, 215 Hobart Bldg., San Francisco.

CROLEY'S BALANCED DAIRY FEED—the cheap milk producer; and Croley's Calf Meal—the best California calf raiser. Geo. H. Croley Co., Inc., 631-637 Brannan St., San Francisco.

Farmers Should Breed Draft Horses.

[By Waynes Dinsmore, Secretary Percheron Society of America.]

The danger of overproduction of horses is remote. It costs more to produce them than any other class of livestock. For that reason many farmers sit back and proclaim that it doesn't pay to raise horses; that there never was a time when the horse market was so dull as now; that the motor truck and tractor have killed the horse business and the horse is a thing of the past. Some people believe all of this, even though the truth of the matter is the opposite. Those who have allowed such thoughts to direct their operations for the past five to ten years, will soon see the error of their ways. It takes time to make much headway in the horse business. Five years are needed to grow a horse. At best one should not expect more than two colts from three mares as an average per year. Moreover, not more than 16 per cent of our farmers are raising colts. Not long hence the American farmer will wake up only to learn that a great opportunity has passed. The next ten years is bound to see the greatest demand for horseflesh the world has ever known. It can't be met on short notice.

The man who is breeding every mare old enough to the best stallion available and is taking proper care of the offspring is the man who is sure to be rewarded. There are plenty of men who have bought and paid for farms within the past ten years by their purebred draft mares. In the same community there are farmers who are no better off financially than they were a decade ago because they failed to foresee the profits from using the right kind of horses in their farm work. The men who have made money and who are going to reap the fruits of their efforts in the future are those who early saw the undeniable need for heavy draft horses for farm work; who bred that kind and who will continue to do so without a halt.

Why is there a general tendency among farmers to buy their horses rather than to raise them? Farmers say, "I don't want to be bothered with a colt. When I get ready to plant corn or cut wheat I want horses ready to work; I don't want to have to pay \$25.00 for a little scrub colt and then have all the bother to raise it, besides." Men with such ideas have to buy a horse or two nearly every spring at a cost of \$150.00 to \$250.00 a head. Instead of having a horse or two to buy, better have some to sell. There is no unusual training necessary. Any farmer can raise good horses if he will only use common sense. He can even succeed with purebred drafters if he will select good parent stock, take reasonably good care of them and develop the offspring rightly. Therein lies the secret of success.

Million Head Exported.—Careful consideration of the situation cannot fail to convince us that there is no danger of an over-production of heavy-draft horses for our farm and city uses. Almost a million horses and mules have been exported from this country in the last 27 months for use in war. These figures show almost one horse or mule taken for

every twenty-five left. Even after the war is over, exports will not cease, for thousands of horses will be needed to start European agriculture anew.

It follows, as a necessary consequence, that the demand for purebred draft horses for breeding purposes will continue to be good. Importations have been, to all practical purposes, cut off. We are producing only twelve or thirteen thousand purebred draft horses eligible to registry. This means, in substance, that we are producing only five or six thousand stallions fit for service per year, when we need at least seven or eight thousand. An excess of demand over supply always makes good prices.

The farmer who uses heavy draft mares does better farm work, and raises bigger crops, than he who relies on small horses. Furthermore, he has horses to sell each spring, at a profit.

SILO CAPACITY.

To the Editor: How much Indian corn tramped by two men will a round silo hold if it is 12 feet in diameter and 24 feet high? What bulletin treats of silos?—E. J. F., Visalia.

Ask the California College of Agriculture at Berkeley for Circular 138 on "Silos in California." It contains a table from which we figure that your silo holds 55 tons of well-matured, well-tramped silage is filled to the top.

Decide on the type that is best suited to your purpose and stick to it through thick and thin.

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There has never been the shortage throughout the country there is today. There is no possibility of replacing the exportation of horses and mules within the next ten years to come. Few, if any legitimate businesses, can possibly show the profits to be secured from the raising of horses and mules within the next ten years.

I have at my barn in Stockton the best lot of jacks I have ever imported from Missouri and Kentucky to California. Also, **PERCHERON STALLIONS**, up to 2300 pounds in weight. Also, the **Best Saddle Horses**, which can be procured throughout Missouri and Kentucky.

And now is the time to buy. One year from today sires of both horses and mules will advance 33 1/3 per cent, and they will continue to advance until they have practically doubled themselves in price. Also, money to be made raising jacks. Dill Brothers, of Clements, California, four years ago bought of me \$12,600 worth of jennets. This year, their first year's offspring of jack colts have reached a salable age of three years, for which I paid them \$10,000 cash, or \$2,000 per head. They will have for sale next year fourteen head of jack colts, worth easily \$20,000, and should equal this the following years to come, which shows a profit of over 150 per cent per year. Can you beat it?

Why not do likewise? Why not follow their lead? As the above only lists their jack colts, they still have their jennet colts for sale in addition to the above as additional profits. Call and see my stock at the Race Track, while in Stockton. Prices reasonable, and terms payments, if desired.

Talk it over with your neighbors, organize a little company among yourselves, and come in and buy.

H. B. THORNBERRY, FAIR GROUNDS, STOCKTON, CALIFORNIA

VETERINARY QUERIES.

[Answered by Dr. H. B. Wintringham, Petaluma, Cal.]

[Subscribers wishing an immediate reply should send money order for \$1.00. No charge for questions answered through this department. Name and address of subscriber must accompany each query.]

DEHORNING TROUBLES.

To the Editor: In dehorning cows, both yearlings and mature animals, I have used a meat saw, cutting close enough to the head to include a small ring of hair. I used cotton with pine tar to close the holes when hollow. Some of the horns heal up but continue to grow. Two of the older cows gave trouble for several months and finally a white pus, resembling the white of an egg, with bad odor, began to run from the horns. I treated one cow an entire year. What can I do for quicker relief?—L. Y., Grass Valley.

If the horn-forming structure in the skin at the base of the horn is removed the horn will not grow again. Never plug the opening but use pine tar the day following the operation as a dressing for the wound.

BULLS' SHEATHS SWOLLEN.

To the Editor: I have had three bulls become unable to serve a cow. The sheath is swollen and they are able to get the penis out only 3 or 4 inches. They do not seem distressed while urinating. Will serving aborting cows cause this? Is it gonorrhoea? I notice in last issue of Pacific Rural Press you advise vaccinating for infectious abortion. Where can I get a reliable vaccine for this and can I do the vaccinating myself? Should cows with calf be vaccinated?—B. A., Visalia.

Wash out the penis with a hot saturated solution boric acid four times a day. The trouble may be caused by aborting cows. There is no such disease as gonorrhoea in animals other than the human. Abortion vaccine does not cure abortion, but seems to aid cows in carrying calves to full time. The act of abortion is simply one of the symptoms of the disease. A reliable vaccine can be bought through the writer at a cost of \$1.00 per cow, though we do not recommend its use on cows after breeding.

HORSE RATION LACKS MINERAL.

To the Editor: Two of the horses in my pasture have been gnawing the boards of the fence. Several of

my neighbors have been likewise annoyed. Can you suggest a remedy? C. E. P., Fairfield.

To the Editor: What can I give my horses to make them stop eating the fence and manger? I have given them ground resin and coarse salt but these do not seem to appease, their appetites for wood.—F. W. M., Modesto.

There is a lack of some mineral substance in the ration they are getting. Put the following in their feed once a day: one teaspoonful of each of the following: powdered and dried iron sulphate, flowers sulphur, saltpeter salt and black antimony.

COW'S UDDER NEEDS VETERINARIAN.

To the Editor: I have a cow which, just before going dry, had a swelling on her bag which caused her to give clabbered and bloody milk. I milked her out each milking, but it did no good. When she came fresh she gave no milk from the affected quarter although the other quarters seemed normal. She is about to come fresh again and I notice the one quarter is about twice as large as the rest of the bag and seems inflamed. What can I do for her?—C. G., Amsterdam.

It will be advisable to consult your veterinarian and have him use a Mastitis vacterin on the case.

DOES NOT COME IN HEAT.

To the Editor: A young cow dropped a calf last May and has not come in heat since.—F. J. L., Los Molinos.

This is a case of retained corpus luteum. A qualified man can dislodge this by manipulation of the ovaries.

COW CAN NOT GET UP.

To the Editor: A cow got down and could not get up. For two days she ate heartily of hay and grain. She did not chew her cud at all, and now is growing weaker. If she is constipated, what would be good for her?—Mrs. L. G. W., Boonville.

Symptoms too meager for diagnosis.

MARE BITES POSTS.

To the Editor: Why does my mare suck wind and bite posts in the barn or corral or when I tie her to a post? Is in good condition; used only for driving on a buggy.—J. T. T., Yuba City.

This is called cribbing, and is a habit which once formed is practically incurable.

HAIR OFF AROUND EYES.

To the Editor: A disease of the eye among the cows seems contagious. It starts with the eye and takes off all the hair for about an inch around the eye.—B. B., Pacheco.

Use yellow oxide of mercury ointment in and around the eyes once a day.

DIED WITH SWELLED HEAD.

To the Editor: What caused my yearling to die this morning? It took sick yesterday with a terribly swollen head especially around one eye. Blood was almost ready to come from the eye.

Looks like the bite of a snake.

GARGET AGAIN.

To the Editor: I have a cow that gives garget milk. She is running on alfalfa pasture.—G. W. I., Merced.

Call your veterinary and have him vaccinate for this.

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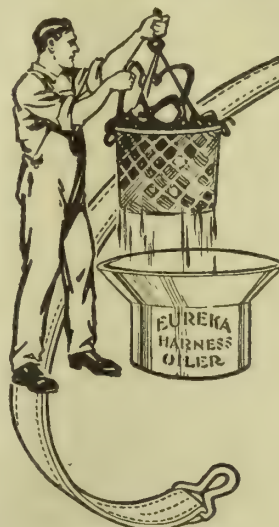
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Raising Poultry for Profit

RUNNING THE INCUBATOR.

[Written for Pacific Rural Press by Susan Swainsgood, Pomona.]

In our last paper on incubating we ran to the seventh day; but made no mention of testing the eggs out, because this is one place where it pays to go slow. Unless a person is well acquainted with the appearance of the embryo at certain stages it is safer to wait until the seventh day, at which time the egg will have a darkened appearance that almost anyone will know is an embryo, or chick in the making. Should there be a bad odor, such as would come from a rotten egg, take time to find it, because one bad egg will start others by contact; besides, bad air in the chamber is not good for the other eggs.

About this time the eggs can be aired a little at each turning, but never long enough to get chilled. When they have incubated, say two weeks, you can allow them quite a little air; the time, however, can only be judged by the atmosphere in the cool room. If the room is very cold it is just as well to throw a light cover over the eggs, as that will retain the heat and allow more cooling. Someone may ask, Why do this if it is cool—why not keep the eggs in the incubator and make sure they will not get chilled?

The answer is that chicks hatched from eggs that have not been sufficiently aired are never so strong and livable as those that have. Good airing makes strong chicks that do not require so much heat in the brooding. They are less like hot-house plants than those that are taken out of the incubator, turned,

and then put back at once.

After the eggs are tested you will have more room to turn the rest of the eggs; so you can just roll them around a little, giving the embryo exercise. Years ago we used to mark all eggs and turn them religiously, first to one side and then the other, as if the universe depended on that act. It was waste time. The only object in turning eggs is to keep the inner skin from becoming attached to the shell, in which case the chick would not be able to work its way out. A gentle rolling is much better than merely turning from side to side.

If you operate a hot-air machine keep moisture on the ground or even in a bucket inside the room; but unless the weather is hot very little moisture inside the machine is needed; and with a hot-water machine, unless the maker says so, put no water in machine, but keep the floor moistened the last few days before the hatch.

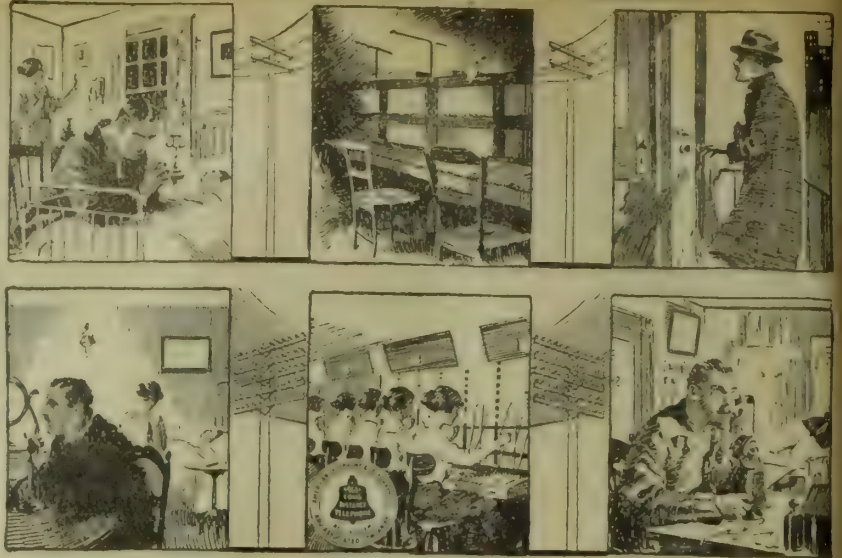
After the 18th day keep the doors of the machine closed until the hatch is off; then open up all doors and give the chicks fresh air while the shells are removed. In doing this be careful not to chill them. You will know if the temperature is right by the chicks—if they are too warm they will gasp for breath, if too cold they will bunch up in groups, and if they are comfortable they will spread out evenly over the nursery floor and wonder when you are going to feed them. It may seem that chicks will never get chilled in the incubator, but they often get a diarrhoea from being cooled off too much by opening the doors too often and turning the lamp down too low.

Forty-eight hours is soon enough to feed. I nearly always make my own bread for the first few days, but a little steel-cut or rolled oats mixed with fine ground Eastern oyster shell does very well. Given alone, rolled oats gets pasty in the chick's craw, but mixed with this fine oyster shell, which all chicks love to peck at, rolled oats in moderation are safe and good feed. Add a little cracked wheat the second day. In a few days they will be ready for a regular chick feed, either commercial or home-made.

After chicks are one week old give them a mash of wheat bran two quarts, brown middlings one quart, cornmeal two quarts, fine ground oyster shell one pint, fine bone-meal half a pint, beef scrap one pint, and ground oats or barley two quarts, one pint fine charcoal and quarter pound of salt. Give this about 10 o'clock in the morning and leave until near feeding time at night. After a month old leave mash before them all the time. See that the mash is mixed thoroughly, and if no ground barley or oats can be had make quantity up with shorts, bran or brown midds. Keep sand and fine grit before the chicks at all times and give green feed ad libitum.

QUESTIONS ANSWERED.

Lice on Hens.—Does the liquid of boiled tobacco, when sprayed on



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Not one-eighth as many miles in proportion to population and territory.

In the principal cities, it takes more than twice as long for the operator to answer.

No such provision made. Telephone users are expected to await their turn.

As to cost, long-distance service such as we have here was not to be had in Europe, even before the war, at any price. And exchange service in Europe, despite its inferior quality, cost more in actual money than here.

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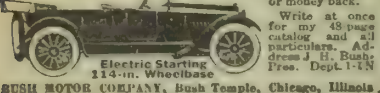
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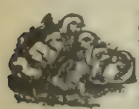


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MODEL POULTRY FARM—White Leghorn Specialists. Baby chicks are hatching eggs from heavy-laying stock bred by us for thirteen years. Our prices are right. W. C. Smith, Prop., Corning, Cal.

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BABY CHICKS—HATCHING EGGS—From our Hogenized stock bred for utility. White Leghorns, Barred Rocks, Pekin Ducks, Mammoth Bronze Turkeys. Brehm Bros., St. Helena, Cal.

CHOICE Rhode Island White Cockerels for sale at \$3. A few trios at \$7.50. Eggs for hatching in season at \$2.50 and \$3.50 per setting. A. W. Mumm, Route 3, Sacramento, Cal.

HICKS JUBILEE HATCHERY, Petaluma, Cal.—White Leghorn and Black Minorca chicks and hatching eggs. Circular "How to Raise and Feed Chicks" Free.

BABY CHICKS—From select free-range White Leghorn stock. Place orders early. Prices on application. Western Hatchery, Petaluma, Cal. W. S. Waldorf, Prop.

S. C. RHODE ISLAND REDS—Pullets and Cockerels. One Black Orpington Cock. Eggs from R. I. Reds and Silver Campines. Mrs. R. S. Snauling, Woodland, Cal.

INCUBATORS—For Essex Model Incubators at factory prices, write Geo. H. Croley Co., Inc., Poultry Supplies, 631-637 Brannan St., San Francisco.

THOROUGHBREDS WHITE ORPINGTON Hens—One Runner Drake. Prices reasonable. J. M. Steever, Cool, Cal.

chickens while on the roost, rid them of lice and mites? Or, what is the best thing to spray them with?—C. F. C., Fresno.

There is not anything so safe or sure for lice on hens or baby chicks as dusting them, either with commercial insect powder or with home made, the recipe for which find below. After you have dusted wait one week, then dust again, and you will get all the nits.

Recipe for making dust or insect powder: Four and a half pounds of plaster paris, one quart gasoline, half pint Kresol (at drugstore), one pound flaxseed meal, half ounce carbolic acid. Mix this in the gasoline and Kresol, then pour over the plaster paris and mix well with a big spoon. Set out to dry in the sunshine and when dry mix in the flaxseed meal and mix all well together. Put away in tight cans or it will lose strength. If you have but a few chickens, better buy a can of insect powder at feed store, as it is less trouble and expense.

Crop-Bound Hens.—I have some hens that are crop-bound. What is the best thing to do? I have fed some rice with the husk on, mixed with other grain. Would that cause the trouble? I gave them some castor oil.

Yes, rice with the husk on would cause the trouble if they ate much. Such foods as rice swell abnormally when they reach the moist, warm crop of a hen, and the husk, being tough, would not move around. The oil was all right; but what you should have done was to manipulate the crop of each hen well with your fingers after giving the oil, then make them fast two or three days. If you allow them to pick and eat at all they will not get well. Castor oil, or even small doses of coal oil, will help. The great thing, however, is to make them fast and exercise.

Chickens Have Roup.—I have

BABY CHICKS (White Leghorns)—shipped on approval before remitting. No weak ones charged for. Schellville Hatchery, R. F. D., Sonoma, Cal.

WHITE LEGHORN BABY CHICKS from selected heavy-laying stock. Only strong, healthy chicks sent. Mrs. G. Logan, Morgan Hill, Cal.

BARRED ROCKS—Grand lot of high-class breeding males and pullets for sale. Satisfaction guaranteed. G. E. Tobin, St. Helena, Cal.

WHITE WYANDOTTES—Blue-ribbon winners. Eggs \$2 to \$5. Chicks, pullets, cockerels. R. W. Stawetski, Route 2, San Jose, Cal.

HATCHED CHICKS from Barred Rocks. R. I. Reds, White Leghorns. Good stock. Send for circular. G. L. Hawley, Madera, Cal.

EASTMAN'S BRED TO LAY Barred Plymouth Rocks, Chicks, Eggs, Cockerels. Fairmead Poultry Farm, Fairmead, Cal.

LARGEST EGG—WHITEST FLESH—Black Minorcas, \$1.50 per setting 15 eggs. Edward A. Hall, R. F. D. 1, Watsonville, Cal.

CHICKENS, DUCKS, GEESSE, GUINEAS, Pheasants, Pigeons, Wm. A. French, 545 W. Park St., Stockton, Cal.

LASHER'S HATCHERY, PETALUMA.—Write for booklet, "The Day-Old Chick Business" and price list.

PIGEONS—Choice Carneaux, \$1.50 pair. J. W. Noble, Box 513, Livermore.

TURKEYS, DUCKS, AND GEESSE.

BOURBON RED TURKEYS and Eggs for hatching. My birds won all the honors in the Alameda County Poultry Exhibition in Oakland, 1914, and just as fine this year. A. E. Balmer, Alhambra Valley, Martinez, Cal.

THOROUGHBREDS WHITE HOLLAND Turkeys. Toms \$5; Hens \$2.50. Old White Holland Toms, \$7.50. Pearl Guineas, \$1 each. E. A. McKinley, R. D., Ukiah, Cal.

BONZE TURKEYS—Young stock of both sexes. Large and vigorous. Eggs in season. Order early. Free circular on turkeys, feed, etc. Albert M. Hart, Clements, Cal.

WHITE HOLLANDS EXCLUSIVELY—Only high-class birds from prize-winning stock for sale. Rockwood Farm, 201, Route 6, Santa Rosa, Cal.

FOR SALE—Choice Mammoth Bronze Gobblers. Won first at California State Fair, Eggs in season. Also selected Buff Rock Cockerels. N. E. Mulick, Willows, Cal.

MAMMOTH BRONZE TURKEYS and Eggs. Booking egg orders now for early Spring delivery. M. M. Aelman, Planada, Cal.

some trouble with my chickens and can't find out what it is. They are in fine condition, lay well, and look well, but two or three had canker sore in the mouth. They got well, then one got a sore eye. When I opened it one morning a nasty yellow stuff came out. I washed their eyes with salt water, gave salts, and later on used peroxide. Now several are sick—one blind. They have plenty of grit, bones, charcoal, wheat, etc., and a warm place to sleep.

These hens had colds at first, and if you had caught them and treated them right you would have had no further trouble. Give all the flock a dose of coal oil. Pour the oil in the drinking water. This will clear their heads. Those that have any symptoms of genuine roup should be caught and put in a separate pen, dip their heads in coal oil, wiping off the extra oil, and give a bromoquinine pill every day for three days. If that does not start a cure, wring their necks. But you must clean up and disinfect all feeding troughs, drinking vessels, and even the ground where the germs are hid.

Australian poultrymen are seeking markets on the Pacific Coast for their surplus eggs. The shipment consists of shelled eggs frozen and packed in five-gallon cans, of which 150 cases came in on the steamer Ventura consigned to John Layton Company.

The Van Nuys district of Los Angeles county has developed into a great poultry community. It is said there are now 100,000 hens in the district and it is estimated that they produce for their owners about \$1.50 per head per annum.

Classified Advertisements

MISCELLANEOUS.

FREE FOR SIX MONTHS—My special offer to introduce my magazine, "Investing for Profit." It is worth \$10 a copy to any one who has not acquired sufficient money to provide necessities and comforts for self and loved ones. It shows how to become richer quickly and honestly. "Investing for Profit" is the only progressive financial journal and has the largest circulation in America. It shows how \$100 grows to \$2,200; write now and I'll send it six months free. H. L. Barber, 500 28W Jackson Boulevard, Chicago.

GROCERIES WHOLESALE—Our prices are the Lowest and our quality the Highest. Dollars saved on every order. Freight paid within 100 miles. Send for catalog. Freese and Company, Mail Order Grocers, 1264 Divisadero street, San Francisco.

EVERY SIZE WROUGHT IRON WATER Pipe and screw casing water pipe, guaranteed as good as new. Prices right. Send for catalogue. We beat no one; everybody gets a Square Deal. Weissbaum Pipe Works 160 Eleventh St., San Francisco.

SECOND HAND WATER PIPE and Screw Casing. New threads and couplings dipped in hot asphaltum. All guaranteed. Send us your inquiry. Shetter Pipe Works, 306-8 Howard St., San Francisco.

AT LAST THE PERFECT SILO—THE Star Round: No hoops. No bolts. No experiments. Any one can erect. Close price. Address D. O. Lively, 215 Hobart Bldg., San Francisco.

NEW TWO-FLOW TRACTOR—Complete except engine. Can adjust any stationary or automobile engine. \$70.00 account storage. Grainger, 1050 Battery St., San Francisco.

PATENTS THAT PROTECT are procured through Pacific Coast Patent Agency. Savings and Loan Building, Stockton, California. Established fifty years.

ASK FOR SNOW'S GRAFTING WAX—In use all over the State. If your grocer does not keep it, send to D. A. Snow, R. D., Box 548, San Jose, Cal.

TO REDUCE THE HIGH COST OF LIVING, send for our Wholesaler to Consumer Catalog. Smiths' Cash Store, 106 Clay St. San Francisco.

"HOW TO LIVE ON LESS"—a guide to cheaper living. Wholesale catalogue free. Pacific Co-operative, A236 Commercial St., S. F.

SEEDS, PLANTS AND TREES.

ORDER NOW—Genuine Giant Crimson Winter Rhubarb. The choicest and earliest of all varieties, producing bountiful crops, when other varieties are out of market. Can grow between orchard rows with big returns. 30c each; \$1.50 per ten; \$10 per hundred. Mail orders booked now and shipped when desired. A. P. Baker 1116 The Alameda, Berkeley, Cal.

CALIFORNIA GREATEST PRUNE—Stuart Prune; 27 dried prunes to the pound; bears heavy; strong growth; very sweet like the French prune, only larger. 2000 trees in stock for this year. Also 60,000 almond trees; all kinds of varieties. Write for prices. Ripon Nursery Co., Ripon, Cal.

RHUBARB ROOTS—Wagner's Giant Crimson, \$2 per hundred; 5c each. Currier Bulb Co., Seabright, Cal.

FREE 1917 PLANTING GUIDE and Pure Seed Book! 96 pages handsomely illustrated in many colors. Describes latest, best varieties vegetables, flowers, field crops, fruits, shrubbery, etc. A dictionary on gardening! Flower lover's delight! Field crop guide! An orchardist's manual! Berry-grower's book! A postal gets it. Don't buy seeds until you read it. Galloway Bros. & Co., Pure Seed Specialists, Waterloo, Iowa.

SEED POTATOES—We have on hand the following varieties: New Snow, British Queen, American Wonder, Green Mountain, Billion Dollar, Gold Coin, Late Rose, Humphreys Best. Write for prices to M. J. Mullaly, winner of Grand Prize for Potatoes, P. P. I. E. R. F. D. 4, Sebastopol, Cal.

CITRUS TREES—all leading varieties. Large line Lisbon, and Villa Franca Lemon, and Washington Navel Orange Trees. First-class stock and clean. Special prices to dealers or to growers in carload lots. Randall Brothers' Nurseries, Whittier, Cal.

STRICTLY FANCY SEEDS—Alfalfa, Scarf, Sweet Clover, Red Clover, Timothy, Rye Grass, etc. Free Bulletin—"Sweet Clover in the Northwest." Write for samples and prices. Ralph Waldo Elden, Central Point, Oregon.

GIANT WINTER RHUBARB PLANTS—Big profits. From 1/2 acre first season after planting I sold 675 boxes rhubarb, receiving \$873.70. Grand Prize San Diego Exposition. Big discount on plants for prompt orders. Booklet Free. W. A. Lee, Covina, Cal.

OLIVES ARE OUR SPECIALTY—We offer for sale fine thrifty trees of the best strains of Mission and Manzanillo. Earliest to ripen; earliest to bear. If that is what you want, we have it. H. Detmers & Son, Exeter, Cal.

WALNUT GRAFTING WOOD—Genuine Franquette. Same strain as Vrooman orchard was planted from. Willson's Wonder, grown by originator. F. C. Willson, Encinal Nurseries, Sunnyvale, Santa Clara Co., Cal.

SPECIALLY SELECTED ARIZONA ALFALFA Seed—the best there is—at wholesale prices. Shipping warehouses at Modesto, Fresno, and in Arizona. You save at least \$2.00 per hundred by buying direct. Send your address for sample and price. Bomberger Seed Co., Modesto, Cal.

FELIX GILLET STRAIN Walnuts grafted on California Black and Vrooman Franquette. Pears on Japan.—Lusty, mountain-grown, with heavy fibrous roots. Write now. Good trees are scarce. Barren Hill Nursery, Nevada City, Cal.

SWEET CLOVER—The best legume known for introducing nitrates into soil. A large-producing, non-bloating forage and hay crop. Stands alkaline conditions well. Seed 15c per lb. V. M. Shuey, Manzanar, Cal.

ALFALFA SEED—New crop of choice home-grown seed; reclaimed and guaranteed. Send for sample and price delivered to your nearest railway station. A. F. Scheidecker, Zamora, Yolo Co., Cal.

WALNUT TREES—Franquette, Mayette and Mammoth on Black Root; also Grafting Wood and Black Seedling Trees. Lowest prices. Mammoth Walnut Nurseries, Watsonville, Cal.

BERRY PLANTS—Phenomenal Berry, Cuthbert raspberry, Loganberry, Himalaya Giant, Lawton and Mammoth Blackberry. Now ready. Prices lowest. M. J. Moniz, Sebastopol, Cal.

MISSION OLIVE TREES—Raised from my own bearing trees. This is the only sure way to get what one wants. W. A. Hayne, Box 461, Marysville.

FRANQUETTE WALNUT TREES—Grafted on Black Roots. Vigorous stock at lowest prices. Ogden Bolton, Jr., Route 6, Santa Rosa, Cal.

FOR SALE—Ettersburg Strawberry plants. \$2.25 per 1000. Guaranteed to reach you in good shape. Parker Bros., Hemet, Cal.

FOR SALE—Gold Dollar and New Oregon Strawberry plants. \$3 per M. D. R. Bannister, P. O. Box 185, Oakdale, Cal.

QUALITY TREES—Seedlings, 5c. Prunes, 10c. Walnuts, 30c. Cash Nurseries & Seed Store, Sebastopol, Cal.

ALFALFA SEED—Why not sow the best? Write for prices to P. S. Vawter, Arbuckle, Cal.

WANTED.

WANTED—Young men and women to attend the Western Normal Courses—Normal and Academic. The Normal Course gives an adequate preparation for teaching, at a great saving in time and money. Academic course gives practical finish to education. Write for Bulletin "A." Western Normal, 524 E. Market St., Stockton, Cal.

WANTED—Single man understanding the care of dairy cows, to milk three or four cows, operate separator and care for a few chickens on a private estate. Must be thoroughly competent and generally handy. State nationality. References required. Apply Box 34, Menlo Park, Cal.

COUNTRY LANDS.

CROP FAILURES ARE UNKNOWN in Eastern Washington, Northern Idaho and Western Montana. These States hold records for the best yields in the U. S. There are attractive opportunities for the farmer, dairyman, stockman, poultry man and gardener. Satisfactory crops, good markets, and a fine climate make life worth living—it never gets too hot or too cold. Write for our free folder, "A Farm Home For You," for farm descriptions and prices. Get the benefit of the advance in values sure to come in a section that has rich soil, ample rainfall, comfortable climate. Farm Development Bureau, 19, Chamber of Commerce, Spokane, Wash.

FOR SALE—948-acre stock ranch in Napa county. Price, \$17,000 net. All modern improvements. Living creek. 125 acres hay, grain and alfalfa land. Free range adjoining. 175 head of cattle can be purchased if desired. Liberal terms. Owner, Box 363, Napa, Cal.

WE ARE AGENTS for the best land in South San Joaquin Irrigation District on the easiest of terms. Address Ripon Nursery Co., Ripon, Cal.

HUMBOLDT STOCK RANCHES—CATTLE correspondence solicited. C. E. Robertson, 105 Montgomery St., San Francisco.

FREE NEW BLUE BOOKLET—State, Government and Indian Lands. Bargains overlooked. Joseph Clark, Sacramento.

Mrs. Best's Letter.

My dear Friends: There are so many electrical appliances on the market now to make the work of the busy housewife lighter, and when so many of you have the electric current in your houses, these appliances are just as possible to have in the country as in town.

Perhaps the most desired article with many of us is the vacuum cleaner. This is no harder to run than a carpet sweeper, but when used regularly, it keeps the dust out of rugs, draperies and cushions and keeps down the dust in the household. There are appliances that may be purchased to use on garments, mattresses and in fact anything that harbors dust. These machines vary in price according to size and power, but any of them are a long step forward from the broom and dustpan.

The electric fireless cooker has been a wonderful success and the proud possessor of one is envied by all her friends and neighbors. With these, there need be no previous heating of the article to be cooked, and roasts can be browned and bread baked as in a regular oven. For the cooking of dried fruits, cereals, rice and the like that are in danger of becoming mushy, the cooker far excels the kitchen stove. If the cooker were used at no time except when away from home for some hours, it would be a good investment. To come home from a long, tiring day in town, to find a hot dinner waiting to be dished, is a situation that would appeal to all of us, I am sure. For beans, brown bread and even plum pudding, that require hours of cooking, many women use the cooker entirely. There is a new one on the market designed to fit into the corner of an automobile for camping and picnicking. The utensils are better in the newer makes—being much less likely to rust.

The electric iron I hope you all have, for it is just a moment's work to get it ready for use and it is needed so many times in the course of a week.

The electric toaster is nice to own if you have a family that comes trailing along one at a time for breakfast, and the percolator is an addition to any household.

If you have straight hair and like to curl it a bit when going out, you would enjoy the electric curling iron that you can use in your own room.

The electric warming pad, I am sure I would be glad to own these freezing nights and it can be regulated to a low heat, so that it can run all night at a small expense and be a toasty bed fellow.

Yours devotedly,
Rosabella Best.

CARE OF THE HAIR.

If the hair becomes very dry and brittle, a little vaseline rubbed into the roots will be found helpful. This is not so satisfactory for use on blonde hair as it has a tendency to darken it.

For the shampoo, any good white soap is good, but if the water is hard it may require a little borax to soften it. If the hair is blonde in color and it is desired to keep it light, try giving it a lemon rinse

THE HOME CIRCLE

after the soap has been carefully rinsed out. This is prepared by squeezing the juice of two lemons into a pint of water and is the last rinsing.

NEW WAYS TO PUT UP FRUITS AND VEGETABLES.

Every woman who ever puts up fruits or cans vegetables ought to read the circular on "Home and Farm Canning" written by W. V. Cruess, Assistant Professor of Zymology in the University of California, just published, and to be had for the asking by writing to the College of Agriculture at Berkeley.

Professor Cruess says the problem has now been solved of canning vegetables without the repeated heatings which have been necessary in the past, which were troublesome and expensive and injurious to flavor and texture. The new method is merely the addition of a little acid to the liquid in which the vegetables are canned. He has proved, for example, that peas keep perfectly after being heated to 212 degrees F. in a brine containing five ounces of lemon juice to every gallon, while peas heated in the same brine without lemon juice spoil. The same results have been obtained with beans, pumpkins, beets, turnips, artichokes, and asparagus.

When canned fruits or vegetables spoil, says Professor Cruess, it is because of the growth of one of three different groups of microscopic vegetable organisms—such as the blue-green molds of spoiled fruits, the yeasts familiar in bread-making, and the bacteria found in the scum and "mother" of vinegar. None of these organisms ever arise from non-living matter, so if all the germs can be killed by heat and the air be kept out, neither mold, yeast, nor bacteria will cause spoiling.

The molds and yeasts are quickly killed at temperatures below the boiling point of water, but the bacteria on vegetables are astonishingly resistant to heat. Often they can stand the temperature of boiling water for an hour or more—but with the use of lemon juice this problem is solved.

The flavor and texture of fresh fruits can be much better retained if they are canned at low temperatures, and Professor Cruess has succeeded in safely sterilizing peaches, apricots, pears, cherries, and berries at temperatures of from 165 degrees F. to 175 degrees F., by filling the cans with fruit and a fairly heavy syrup and keeping the cans in hot water, kept at 175 degrees F., for ten to twenty minutes, with occa-

sional stirring to hasten the penetration of the heat.

The housewife's success with her canning and preserving will be much aided if she will use a good thermometer, costing a dollar, and a "saccharometer," or sugar-tester, costing about 75 cents, which is useful in making the sugar syrups of the desired strength.

The widespread notion that beet sugar is not as good as cane sugar for putting up fruit is declared to be now without foundation, since cane sugar and beet sugar are exactly the same thing chemically.

HOME GROUND WHEAT.

A very inexpensive breakfast food can be prepared at home by grinding wheat. An ordinary coffee grinder will answer and the wheat must be free from dirt or other seeds and have been washed and thoroughly dried.

One strong point in its favor is that all the nourishment of the original wheat is there and it is much more laxative than many of the breakfast foods on the market.

Home ground breakfast food, like all coarse cereals, requires long cooking. It should be cooked at least three hours and over night is still better. For this purpose, a fireless cooker would be ideal.

Care should be taken in salting home-ground wheat. A level teaspoon of salt to each cup of water is about right and to each quart of salted water use one cup of wheat. If hot water is used, the cereal should be stirred until it has thickened a little. The food value of this dish can be greatly increased by the use of milk instead of water.

Breads can be satisfactorily made from home-ground meal and tested recipes will be sent on application to this office.

COOKING WHOLE DRIED APRICOTS.

Editor Home Circle: Will some reader of the Press give me a tried recipe for cooking apricots dried whole?—Mrs. D. L. T., Ventura.

Wash carefully, putting only one at a time into the water on account of scuffing the tender skin, cut out any bad parts, soak in cold water over night, simmer in the same water about an hour, when an ordinary spoon will cut the flesh without mashing it. Sweeten about 15 minutes before done. Remember that whole dried apricots are much sweeter usually, than those which were green and firm enough to cut and dry satisfactorily.—Mrs. R. E. H.

OLD AND NEW FRIENDS.

Make new friends, but keep the old; those are silver, these are gold. New-made friends, like new-made wine, age will mellow and refine. Friendships that have stood the test, time and change, are surely best. Brow may wrinkle, hair turn gray, friendship never owns decay; For 'mid old friends, kind and true, we once more our youth renew. But, alas! old friends must die; new friends' must their place supply. Then cherish friendship in your breast; new is good, but old is best. Make new friends, but keep the old; those are silver, these are gold.

—Henry van Dyke.

Floral Department.

[By Geo. N. Tyler.]

I have had the following query this week:

Please tell me what kind of fertilizer to use in the soil of my flower garden to make it lighter and help the plants to make a better growth. The soil is heavy and slightly alkali. We have dug in big wagon loads of barnyard manure during the last six years, but in a few months after it was mixed with the soil, the soil was heavy again. The plants do fairly well for this dry climate. We have soft river water to use in garden. I find a great many small white worms one-eighth inch long, very white and small. They work in cuttings of soft wood and in a few dahlia tubers I had, and in some pot plants. They kill anything they get at. Do you think lime in the soil would kill them?—Mrs. Wm. L. Bethany.

In reply to the above will state that I do not know from the query whether the soil is clay or adobe. Cow manure is good for sandy soils, and horse manure with plenty of straw will make the soil more friable, but I should judge that the soil is sour and full of humic acid, from the frequent applications of fertilizer, and the denitrifying microbes do not have a chance to work. If you can get some blue litmus paper, make a ball of some of the moist soil and if the paper turns red it is a sign that the soil is sour. You can get the litmus paper at any drugstore at the cost of five cents. If it turns red, give a heavy application of hydrated lime. To get the best results the lime should be spread on the surface and cultivated, raked or hoed in. It should be near the surface, as water takes it down. It will sweeten the soil, make what fertilizer is in the soil available for plant food; also put the soil in fine mechanical condition so the microbes can work, and it will make the soil more friable and easy to work. Regarding the small worms you describe, I should judge that they are insects feeding on the decomposing vegetable matter and do no harm to a healthy plant or cutting. Lime will have a tendency to reduce them, but unless I have a sample, I cannot state positively whether they do any harm or not.

CARE OF DRUGS.

Most families keep on hand a small supply of drugs for household use, especially rural households, distant from drugstores. It is well to bear in mind that many drugs are subject to deterioration—some from exposure to light, others to air or moisture. These drugs, therefore, should be excluded from the light and tightly corked to prevent the access of air and atmospheric moisture.



The Chinese Woolflower

Introduced by us three years ago, this is now a favorite garden plant. It is a native of China, where, plants growing 2 to 3 feet, a perennial plant, with many flowers, bearing green, bell-shaped, tubular flowers, with a yellow center. The flowers are very fragrant and none of the leaves freeze, even in the coldest weather. The plant is very hardy and can be grown in any soil. Seed 10 cts. per pk. 10 cts. 3 for 25 cts. New Haddon Plants, For immediate sale, write to us. We are the largest growers in the world of Gladioli, Tulips, Daffodils, etc. See Catalog for colored plates, culture, etc. Our Big Catalog of Gladioli, Tulips, Daffodils, Plants and rare new flowers. We are the largest growers in the world of Gladioli, Tulips, Daffodils, etc. JOHN LEWIS CHILDS, Inc., Floral Park, N. Y.

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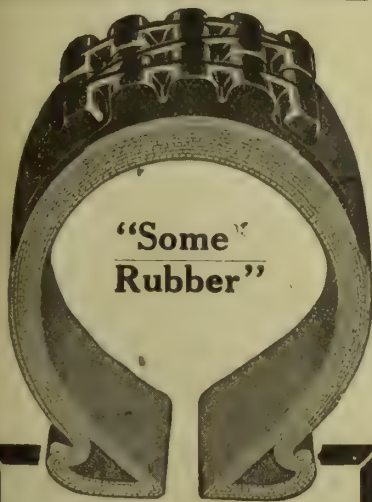
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Good Health.

(By H. E. Pastor, M. D.)

Parents' Interest and Responsibility Paramount.

This writer has been asked what
he thinks of the propriety of teach-
ing sex hygiene in the public schools.
It is a delicate question to ask, and
as difficult to answer as it is delicate;
and the writer approaches the sub-
ject about as willingly as a politician
canvassing for office faces the awk-
ward questions flung at him by a
Prohibition or a Woman's Suffrage
delegation. It is just now a live
question—very live—and the waters
on either side are deeply stirred.
Whichever side you espouse you get
little praise and much abuse. And
it's such a delicate subject! It's like
a hot potato—you feel like dropping
it every moment you are handling it.

Biologically considered, sex is the
greatest fact in human life, as it is
in all animal life, where natural im-
pulses are allowed unrestrained
sway; and it is the instinctive knowl-
edge of this fact which underlies the
wide-spread solicitude of society,
and especially society's parents, to
meet in the right way the emer-
gencies that inevitably arise when
sons and daughters arrive at the age
of sex consciousness. That the mys-
teries of nature's processes must at
some time and in some way be im-
parted to these sons and daughters,
who in due course must take our
place in society as parents, goes with-
out saying. The question is, then:
Shall this knowledge, this funda-
mental physiological fact of our be-
ing, come to the adolescent child in
the haphazard way that it frequent-
ly, or indeed commonly, is allowed
to come? Certainly not! This kind
of tuition is both inadequate and
perilous. Then how and when shall
it be communicated, and by whom?

It is urged by large numbers of
those interested that this instruction
should be made part of the public
school curriculum.

We dissent. The average school
teacher is not qualified to handle this
subject; and if he were, he is not the
proper person; nor is the public
school classroom the proper place.
The public school is the up-to-date
Tree of Knowledge, which bears
fruit of both good and evil, and
some of its impressionable disciples
taste the latter to their sorrow. In-
struction in sex hygiene is a ques-
tionable scion to graft upon this
great tree. A school full of children
is a motley crowd, of diverse heredi-
ties, temperaments and tendencies,
and the fruit that may benefit one
may poison another. To the pure
all things are pure; to the evil,
otherwise. "Where the bee sucks
honey, the spider sucks poison."

To express a humble and individ-
ual opinion, without beclouding or
befuddling the subject with too many
whys and wherefores, we prefer to
go on record as saying that the
parent—father or mother—after
counsel with the spiritual or medical
adviser of the family, is the proper
person to reveal this delicate but
necessary information. When a
child reaches a powder magazine on
the journey of life it is safest in the
leading of its parent—at least, so
thinks this scribe, though he has no
quarrel with those who view the



Solid comfort

When the rains
and cold weather
come, be comfort-
prepared with a
good oil heater.

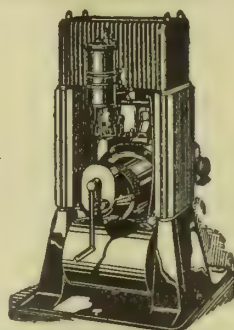
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wire them yourselves. Material furnished at low-
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C. M. WOOD, Western Representative
Phone Glendale 529 J

Los Angeles

matter from a different angle. If it
be contended that some parents neg-
lect this important duty, the valid-
ity of the answer here given is not
affected. It merely brings up an-
other question—a sociological one.

Bacteriological Kinks.

An Argus-eyed correspondent of
the Rural Press protests good-na-
turedly against a statement made in
this column a few weeks back which
seemed to imply that the hookworm
is a stranger within California's
gates. He won't have it so, and says
the hookworm has a very intimate
acquaintance with the mining popu-
lation in the high Sierra districts.
Mr. Frank T. Swett, Horticultural

Commissioner of Contra Costa Co.,
the critic referred to, is right in his
contention; and we are glad to have
the fact brought out, for we believe
it is not generally known that this
unwelcome guest has a habitat with-
in the State's domain. Mr. Swett
says "our glorious climate can raise
anything," and warns this writer
"not to detract from our possibilities
or pestabilities."

Yes, the microbe of tetanus lurks
in many places other than the rusty
nail, but he's always at home there.

If you would keep your body
healthy, keep it clean; if you would
keep your mind healthy, keep it
clean.

SAN FRANCISCO.

San Francisco, Jan. 24, 1917.

WHEAT.

Continued peace agitation has limited buying for export, and difficulty of shipping by rail also has tended to weaken the Eastern market. Local values are firm and unchanged, with very little on hand here, and light offerings in the north.

Sonora wheat 2.80
Northern club 2.70@2.75
Calif. club, ctt. 2.60@2.65
Northern Bluestem None offered
Northern Red None offered

BARLEY.

Shipping grain available for export is cleaned up, and the limited stock of brewing barley left for local needs is not moving. Seed is quite firm at the last quotation, with some demand and feed is very firm at an advance, with light and diminishing supplies.

Seed, ctt. \$ 2.50
Shipping, ctt. 2.35@2.40
Brewing Nominal
Choice feed, ctt. 2.25@2.27½

OATS.

Values are firm, with offerings of moderate size and quite a strong demand for both red and white oats, which are stimulated by the jump in barley.

Red feed \$1.80@1.85
White 2.15@2.20

CORN.

Everything under this head is very firm, and it is rather hard to get Eastern yellow at the appearing prices. Milo and gyp corn are moving in large quantities, offerings are large and include much poor stuff, preventing further advance.

[First-hand prices on strictly first-class grain, San Francisco.]

Eastern Yellow, ctt., in bulk \$2.10@2.15
California, sacked 2.20@2.25
Milo Malze 2.00@2.20
Egyptian 2.20@2.25

BEANS.

Blackeye beans are as usual subject to sudden fluctuations of demand, and just now are neglected, though comparatively cheap, and price has been marked down slightly. The only other notable change is on limas. These were rather dull for a time, but there has been renewed Eastern inquiry, and Southern California holders are demanding an advance, which has been paid on some transactions. Pinks steady and are moving well; the demand for all other varieties is very good.

[Uncleaned, on wharf, San Francisco.]

Bayos, per ctt. 5.75@6.00
Blackeyes 4.25@4.50
Cranberry beans 6.60@6.75
Horse beans 3.25@3.50
Small Whites (south) 7.00@10.50
Large Whites 8.10@9.50
Pinks 6.90@7.10
Limas (south) 7.75@7.85
Red Kidney 9.00@10.00
Mexican Reds 6.50@7.00
Tepary beans 5.90@6.00

HAY.

Arrivals have dropped off a little, and appear to be sufficient, as many local buyers regard present prices as only temporary, and are holding off. The situation, however, is extremely firm, and conditions are in favor of continued high prices, with prospect of advance. The cold, dry weather of the last fortnight has necessitated feeding in the country on an even larger scale than before, and the movement from country warehouses has been extremely heavy since the first of the year, leaving much less than usual at this season. It looks, moreover, as if the large feeding demand would continue for some time; and continued drought causes some apprehension for new crop. Local dealers have been buying what they could in the country, taking heavy tonnage to cover early spring needs. Low-grade alfalfa, in great demand for feeding, is higher.

[Prices per ton, carload lots, San Francisco.]

Wheat, No. 1 \$17.00@19.30
No. 2 15.00@17.00
Tame oats 14.00@19.00
Wild oats 14.00@16.00
Alfalfa 14.00@17.00
Stock hay 13.00@14.00
Straw, per bale 7.00@9.00

FEEDSTUFFS.

Demand for everything has been exceptionally heavy for the last fortnight, and continues strong. Alfalfa meal is higher, and rolled barley has only been kept down by offerings of cheap lots adulterated with screenings.

[Per ton, San Francisco.]

Beet Pulp, per ton \$30.00@31.00
Alfalfa meal, per ton 21.50@22.50
Bran, per ton 30.00@31.00
Oil Cake 40.00@41.50
Coconut cake or meal 31.00@32.50
Cracked corn 47.00@48.00
Middlings 39.00@40.00
Rolled Barley 46.00@47.00
Tankage 47.00@48.30
Rolled oats 46.00@47.00
Rice middlings 33.00@34.00

POTATOES, ONIONS, ETC.

Fresh garden truck in general is scarce and mostly poor, owing to heavy damage done by the frosts. Celery shows an extreme range, owing to the presence of much trashy stock. Delta potatoes are held a little higher, but the local demand is less than half what it usually is, and while there is some Eastern inquiry, the movement is not heavy. Onions are in similar position, with few offered below \$5. Stocks of both are so light that no difficulty is expected in cleaning up, despite light demand.

Lettuce, crate 1.25@1.75
Celery, Delta, crate 2.90@4.50
Tomatoes, crate Nominal
Rhubarb, box 1.00@1.50
Potatoes, ctt., Delta 2.40@2.75

THE MARKET REPORTS

Figures Given Are Independent and Reliable.
Prices Quoted as Paid to Producers.

Salinas 2.75
Oregon 2.40@2.75
Onions 5.50@6.00
Garlic, lb. 3½@4c

POULTRY.

Turkeys still in demand, and dressed stock commands high prices. Arrivals of chickens, both local and Eastern, very light, California poultrymen sending as little, and market is frequently entirely cleaned up. Arrivals consist largely of hens, which are the weakest item on the list. Broilers firm, and young roosters have advanced. Ducks and geese are higher.

Turkeys, dressed, large, lb. 29@32c
Turkeys, live, lb. young, large. 25@26c
lb. 28c
Broilers, 18 lbs to doz and less. 29@31c
do. over 18 lbs. to doz. 26@28c
Fryers 25@27c
Hens, extra, per lb. colored 20@21c
Small leghorn 18@20c
Smooth Young Roosters, per lb. (3 lbs. and over) 26@28c
Geese, per lb. 19@20c
Squabs, per lb 38@42c
Ducks 20@22c
Old 20c
Belgian Hares 12½@14c

BUTTER.

Outside demand has dropped off, with a much easier feeling in Eastern markets, but supplies locally have been

coming in slowly, and the quotations have been running higher on the average than last week. The Eastern drop is attributed partly to a disposition among dealers to clean up storage stocks.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extra	36½	37	37	38	37	37
Prime	35½	36	36	36	36	36
First	34½	35½	35½	35½	35½	35½

EGGS.

Shipment to the local market has increased rapidly for the last week, and drop in values has been rapid, amounting to 9c for the week. Eastern markets also have weakened, and are too low and uncertain to warrant the risk of shipping, though a further drop here may bring business from there.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extra	41½	40	37½	36	33½	32½
Sel. Pul.	39	37	35½	34½	32	31

CHEESE.

Demand has quieted down, and Y. A.'s are easier, though other grades stand as before.

Y. A.'s fancy 20c
Fancy Calif. Flats, per lb 18c
Monterey Cheese 17@19c

DECIDUOUS FRUITS.

Cold storage apples and pears are unchanged. California apples are moving only locally, but find a good demand, while northern stock is going

Special Livestock Market Report.

San Francisco, Jan. 24, 1917.

CATTLE continue to be scarce and while we have not changed our quotations, prices are firm as last quoted. Buyers have about given up trying to locate choice lots and are satisfying themselves with whatever is offered.

Steers, No. 1 8 @8½c
No. 2 7½@7¾c
Cows and Heifers 6½@7¾c
No. 2 6½@6¾c
Bulls and Stags 5½@6c
Calves, light 9 @9½c
Medium 8½@9c
Heavy 7 @8c

SHEEP and lambs continue to be in strong demand with no offers being made. Two shipments of Utah lambs are en route to this market and this is said to have about cleaned up the available supply there. The sheep that are being killed are being drawn from feed lots entirely. Values are hard to establish owing to lack of trade, but the market is strong at our figures.

Prime Wethers 8½@9½c
Ewes 7½@8c
Lambs 11@12c

HOG receipts again fell off some, but quality remains good as last reported. Quite a few acorn hogs are being offered, but it is difficult to find buyers. Receipts here continue to be solely from California points. Prices are unchanged.

[Rough, docked 20 pounds, piggy sows, 40 pounds, stags 80 pounds.]

100 to 150 lbs. 8½c
150 to 300 lbs. 9½@10c
300 to 375 lbs. 9½@9¾c

WOOL activity is reported from the upper Sacramento Valley and Nevada sections at soaring prices. Reports of 31, and as high as 33, cents are numerous from both sections while 26 to 28 cents are the highest offers we have heard of from the Bakersfield district, some sales being made at those figures. No activity is reported in Mendocino or Imperial districts. London sales are about over and a decline of 10 to 15 per cent is recorded. Only a small amount of wool has been released by England and this will have no effect on local values. Boston market has a stronger tone.

Sacramento Valley, spring clip. 22@30c
Mendocino, year's 32@33c
Southern, spring clip 26@28c
Southern, 7 months 13@16c
Imperial Valley, 7 mos. 14@15c
Nevada, year's 31@32c

HIDE MARKET continues slow. Reports from the East say, "Largest tanners haven't been in the market for six weeks." There are plenty of offerings locally but no takers. Sales at these prices should be warranted.

Steers 21 @23c
Cows 21½@23c
Light hides, 25 to 48 lbs. 21½@23c
Kip 23 @24c
Calf and veal 31 @32c
Dry Hides 32½@33½c
Dry Kip 35 @36c
Dry Veal and Calf 38 @40c
Pelts, long wool 1.75@1.90
Short wool85@1.10
Horse hides, wet, large, ea. 5.00@5.50
dry, large 3.00@3.50

Los Angeles, Jan. 23.

CATTLE: The continued high markets East and improvement in the beef market caused killers to bid up prices of good killing steers and fat cows 50c per cwt. and advanced cows and heifers the same. Stockers and feeders unchanged. Receipts only fair. California and Arizona furnished most of the supply and what coming in were placed without trouble.

Beef steers, 1000 to 1100 lbs. \$8.75@9.00
Prime cows and heifers 7.00@7.25
Good cows and heifers 6.50@7.00
Quotations f. o. b. Los Angeles.

Beef steers, 1000 to 1100 lbs. \$8.75@9.00
Stockers and feeders 5.50@6.00

Prime cows and heifers 7.00@7.25
Good cows and heifers 6.50@7.00

HOGS: A good and strong market continues. California furnished a very fair supply the past week of very good hogs and there were a few in from Arizona and Idaho. Most of the Idaho hogs, however, continue to go East, being drawn there by the high prices. Killers all in the market and wanted supplies and what hogs arriving were disposed of without trouble.

Per cwt. f. o. b. Los Angeles:

Heavy, averaging 250@300 lbs. 9.25@9.50
Mixed, 200@250 9.25@9.50
Light, 175 @200 9.25@9.50

Rough docked 20 pounds, piggy sows 40 pounds and stags 80 pounds.

SHEEP: In sympathy with high markets east and under the influence of a good demand there was a sharp and general advance. While there was a fair supply of sheep and lambs had from Utah and Idaho, the arrivals were not large and killers were free buyers and prices ruled \$1.00 per head higher all round. Killers were all in the market and wanted supplies and the offerings were disposed of without trouble, and more could have been sold if here.

Per head, f. o. b. Los Angeles:

Prime wethers \$8.00@8.25
Prime ewes 7.50@7.75
Yearlings 7.50@7.75
Lambs 7.00@7.50

CALVES: Not many coming in and market firm and demand good for what arriving. Selling at \$8.50@9.50 per cwt.

North Portland, Ore., Jan. 22.

CATTLE: The offering of cattle was very good here this morning and the market was in fairly good shape on everything offered. The demand from the large packers was limited, although there was a liberal outlet to various butchers. Prices on all good grades were steady, while other grades showed 10c lower, in a number of cases.

BEEF STEERS: The beef steer trade was active today and the market was in good shape. The feature of the trade was the sale of several loads of prime grain and hay feds at \$8.50; most of the fairly good beef steers crossed the scales from \$8.00 to 8.25; and fair kind at \$7.25 to 7.75; while the common kind sold from \$5.00 to 6.00.

COWS AND HEIFERS: Cows of good quality found very good demand at prices steady with a week ago; one lot brought an advance of 20c, bringing \$7.60; with a number of bunches at \$7.50; the fair to good kind brought \$6.75 to 7.00.

BULLS AND STAGS: There was a good run of Bolognas here today, although the bulk were received on contract. Best heavy bulls brought \$5.50 while good ones sold from \$5.00 to 5.25.

HOGS: There was a light supply of hogs here today, which met a very good demand and buyers had to share the offerings at sellers' prices. Prices were advanced 25 to 30c again this morning, sellers getting everything they asked for. Most of the good hogs crossed the scales at \$10.85, there being no strictly top hogs offered. Pigs were in light supply, the bulk getting \$9.35 and a few scattered sales at \$10.00.

SHEEP: Lambs continued their upward climb today. There was a fairly liberal supply in the pens, but the finished condition of the trade is especially on fat lambs shot values at 75c. Best bailey lambs climbed up to \$11.50. The market on old sheep is practically the same. Best yearlings are quoted at \$10.00 with medium at 9.55; best mutton ewes at \$8.00 to 8.50; heavy medium types from \$7.00 to 7.50.

East in large lots. Stocks here are only 65 to 70 per cent of the amount held last year at this time, and the outlook is favorable for firm prices.

Apples:
Bellflower, box \$.65 @ .75
Newtown 1.10 @ 1.25
Pears, Winter Nellis 2.25 @ 2.75

DRIED FRUITS.

The spot situation is no longer of much interest to growers, as the limited supplies left are nearly all in packers' hands. Prices are quite firm for anything left in the country, with further advances possible; though there is hardly enough business in most lines to justify definite quotations. Spot prunes have been a little quiet in the East since the holidays, but for the last week jobbers have been taking more interest, and it is known that stocks in the trade are quite low. Packers are holding firmly. Peaches are moving steadily. Figs closely cleaned up, and higher prices are offered for black, which are the only kind to be had in the country. Some of the larger fig packers are actively in the market for new-crop contracts, and are offering higher prices.

[Net to growers, bulk basis, f. o. b. shipping point.]

Apples, new crop 8 @ 8½c
Apricots, per lb. 1916 15 @ 16c
Figs, black, 1916 6½ @ 7c
do, 1917 6 @ 6½c
do white, 1917 6 @ 6½c
Callimyrna, 1917 10 @ 10½c
Prunes, 4-size basis, 1917 5c
Pears 7 @ 8c
Lake County Pears 11 @ 12½c
Peaches, 1917 6c

NUTS.

Most of the Manchurian walnuts to come this way have now arrived. The year's exports from that country were about 50,000 bags, about equally divided between this country and Australia. In view of the light supply of California nuts and the difference in quality, Manchurian nuts have offered little competition.

LOS ANGELES.

Los Angeles, Jan. 23, 1917.

BUTTER.

Receipts of week ending Jan. 23, 1917—319,387.
Receipts of week ending Jan. 23, 1916—237,900.

There was a sharp break in the market here the past week. There was quite an increase in the receipts and the Eastern markets have dropped until the outlet there for California butter has been closed. Extra in Chicago is now 36½c and in New York 39½@40c. In San Francisco the market advanced 2c up to Monday. But this had no influence upon the market here in the face of the increased receipts. Local consumption is now very good and promises to hold up well for the next two months. It is well to bear in mind, however, that extra is still 8½c higher than this time last year. Tuesday brought no change. Fresh extra was quoted at 37c. Chicago and New York were much the same as the day before.

We quote extra creamery 37c
Prime first 35c
First 33c

	Wed.	Thu.	Fri.	Sat.	Mon.	Tu.
1917	38	40	40	38	37	37
1916	28½	28½	28½	28½	28½	28½

EGGS.

Receipts (railroads) for week ending Jan. 23, 1917—1337 cases.
Receipts (railroads) for week ending Jan. 23, 1916—1031 cases.

The break in the market has come at last. It is a little late this year, but it arrived last week and values may be expected to settle from this on. Receipts were a little better the past week and the Eastern markets made a sensational drop, closing that outlet for Pacific coast eggs. In Chicago first declined up to Monday 8½c and New York 10c. In San Francisco the market for the same time broke 6½c. Under this influence the market here after advancing 4c early in the week broke 7c on pullets up to Monday, 8½c on extras and 7½c on ranch. But at this decline there was a very good street demand, but the shipping demand noted the week before was absent. Still even at this decline prices are 4c higher than this time last year. Tuesday there was another break in the market. Receipts were the heaviest for a long time and San Francisco was sharply lower, which with the heavy receipts made buyers very bearish. Fresh ranch case count sold off 2½c, extras 4c and pullets 4c and close weak.

We quote fresh ranch case count. 32½c
Extras 33c
Pullets 31c
Candied 2c and selected 3c over quotations.

	Wed.	Thu.	Fri.	Sat.	Mon.	Tu.
Ranch	43½	42½	41	39	35	32½
Extras	44	43	42	40	37	33
Pullets	42	41	41	38	25	31

POULTRY.

Not much in the past week. No Eastern arrivals and the local receipts were light. This caused a firm market and there was a good demand for everything. Broilers, fryers and hens sold without trouble, while heavy turkeys were higher and in good demand at the advance.

Broilers, 1½ to 2 lbs. 25@26c
Fryers, 2½ to 3 lbs. 22@23c
Hens, over 4 lbs. 20@21c
Ducks 18@19c
Geese 16@17c
Roosters, 3 lbs. up (soft bones) 22c
Turkeys, heavy, 12 lbs. and up. 27@28c
Turkeys, light 23@24c

Squabs, live, per doz.\$1.50@3.00
Dressed 3.75@4.85

HAY.

There was a further dropping off in the receipts the past week and trading light. Prices, however, show no change. Only the better grades showed any life and buyers of them were inclined to confine themselves to such lots as needed for immediate consumption. But for the light arrival values would probably have worked lower as there is no disposition to buy ahead or stock up. There was an entire absence of speculation, and disposition to let the market take care of itself.

We quote f. o. b. Los Angeles:
Barley hay, ton\$18.00@20.00
Oat hay, ton 19.00@21.00
Alfalfa, northern, ton 16.00@17.00
Alfalfa, local, ton 18.00@20.00
Straw, ton 9.00@10.00

HONEY.

There was a little better movement the past week. While there was some improvement in the inquiry prices showed no change; holders seeming

satisfied with current values for the time being. Stocks light, however, and the situation favors holders.

We quote from growers:
Water white, pound 7 1/2 c
White sage, lb. 7 1/2 c
Light amber sage, lb. 7 c
Light amber alfalfa, lb. 6 1/2 c
Fancy white comb, lb. 10 c
Light amber comb 9 c
Beeswax 30 c

BEANS.

A steady and rather firm market was had the past week. The demand, however, was light. The home trade seems to have been supplied for the time being and there was very little shipping inquiry. Holders, however, were independent and old prices were being sustained.

We quote from growers:
Limas\$7.75@ 8.00
Large white10.90@10.50
Small white 10.00@10.50
Pinks 7.25@ 7.50
Blackeyes 5.25@ 5.75
Tepary 5.75@ 6.25

Special Citrus Market Report.

Los Angeles, Jan. 23.

Shipments of citrus fruit from Southern California from November 1 to January 21: Oranges 4,223 cars and lemons 1,065 cars. Same time last year: oranges 2,209 cars and lemons 1,165 cars.

Shipments from Central California from November 1 to January 19: oranges 3,890 cars and lemons 130 cars. Same time last year, oranges 4,109 cars and lemons 102 cars.

Shipments from Northern California from November 1 to January 19: Oranges 841 cars and lemons none. Same time last year: Oranges 594 cars and lemons none.

There was a better movement and stronger markets at the East the past week. The receipts were not heavy and the consumption was very good. This with severe weather, which means lighter arrivals for the moment, caused buyers to bid up a little stronger. Lemons as well as oranges showed more strength and were reported in better demand. Locally the market situation remains much the same as the week before. Bad weather most of the time and free offerings of culls caused local packers to hold back and do little. The fact that the markets East were stronger failed to influence the market here. Local pack-

ers were cautious buyers and confined themselves mostly to larger sizes and highly colored fruit, for which they bid 1c per pound in the grove picked. Small oranges were dull even at this price. Good northern grapefruit was in very good demand at 1@2c per pound in the grove picked. But little doing in Southern grapefruit. Tangerines dull at 1@2c per pound in the grove picked. Lemons were draggy and unchanged. Local packers bidding 1@1 1/4c per pound in the grove picked for best. Poor lots very dull and had to be sold for what they would bring.

AUCTION SALES.

New York, January 22.—Eighteen cars navels and two cars lemons sold. Fancy navels about 25c higher; ordinary and poor stock slightly higher. Lemons about 25c higher. Weather cloudy. California navels averaged \$1.40@3.35. Lemons averaged \$1.90@2.80.

Boston, January 22.—Twelve cars sold. Market doing better on both oranges and lemons. California navels averaged \$1.40@3.15. Lemons averaged \$3.90.

Philadelphia, January 22.—Market is higher. One car sold. California navels averaged \$2.00.

WEEKLY BUTTER AVERAGES.

Cents per pound for Extras.				
Week Ending	San Francisco	Los Angeles	1916	1917
Jan. 9....	26.65	34.91	28.16	36.90
" 16....	27.83	35.83	28.10	37.00
" 23....	28.85	36.91	28.50	35.00
" 30....	36.33		36.66	
Feb. 6....	30.25		32.33	
" 13....	31.40		32.25	
" 20....	32.00		32.00	
" 27....	30.90		35.25	
March 6....	24.08		24.16	
" 13....	29.91		28.83	
" 20....	28.33		27.16	
" 27....	28.50		28.08	
April 3....	28.50		28.83	
" 10....	29.31		28.00	
" 17....	27.33		27.50	
" 24....	25.25		25.00	
May 1....	24.33		25.33	
" 8....	24.10		25.00	
" 15....	24.58		25.66	
" 22....	25.00		25.00	
" 29....	26.50		26.50	
June 5....	25.50		27.00	
" 12....	25.83		27.00	
" 19....	24.50		25.91	
" 26....	24.50		25.91	
July 3....	24.60		26.00	
" 10....	26.40		26.60	
" 17....	25.83		26.00	
" 24....	26.00		26.00	
" 31....	26.00		25.91	
August 7....	26.16		26.00	
" 14....	26.50		26.00	
" 21....	26.50		27.95	
" 28....	27.25		28.50	
Sept. 4....	30.00		30.50	
" 11....	30.20		32.00	

WEEKLY EGG AVERAGES.

Cents per dozen for Extras.				
Week Ending	San Francisco	Los Angeles	1916	1917
Jan. 9....	31.41	37.91	32.00	38.16
" 16....	33.33	41.83	30.75	40.83
" 23....	34.83		34.33	
" 30....	36.33		36.66	
Feb. 6....	35.66		35.50	
" 13....	28.90		28.00	
" 20....	23.66		20.33	
" 27....	20.30		18.50	
March 6....	18.33		18.00	
" 13....	19.50		18.91	
" 20....	20.00		19.08	
" 27....	21.41		20.83	
Apr. 3....	21.75		21.00	
" 10....	22.00		21.00	
" 17....	21.16		20.91	
" 24....	21.83		22.58	
May 1....	21.00		22.58	
" 8....	21.20		21.41	
" 15....	24.58		20.83	
" 22....	25.46		22.50	
" 29....	25.33		22.50	
June 5....	25.00		24.51	
" 12....	25.00		24.16	
" 19....	24.83		23.75	
" 26....	24.66		24.58	
July 3....	24.60		24.00	
" 10....	26.30		24.00	
" 17....	27.16		27.00	
" 24....	28.20		28.00	
" 31....	28.50		28.00	
August 7....	21.00		29.16	
" 14....	33.08		31.00	
" 21....	33.09		31.83	
" 28....	33.50		32.00	
Sept. 4....	36.13		32.00	
" 11....	37.90		36.00	

Interest in Future Wool.

The spring clip, though shearing is still some six or eight weeks off, is already commanding attention. Buyers from the local houses have been looking over the principal sheep districts the last few weeks, and while they have shown a rather offish attitude, it is evident that they are anxious to make contracts for anything that can be had at what they are willing to pay. The prices offered cannot be considered as low, but they are below the views of most growers, and there are many factors to encourage confidence in higher prices.

Considerable contracting is said to have been done in other quarters: about 70 per cent of the Nevada clip is reported under contract at 27 to 30c, and probably about 30 per cent of the whole United States clip. The only large business in California has been done around Bakersfield, at 24 to 27c. A little Red Bluff wool has been taken around 32c, but growers there prefer to wait.

Consuming trades are using the releasing of 50,000 bales, or about 25,000,000 lbs., of Australian wool for this market as a bear argument; but it is evident that this will only partially relieve the general shortage. War order are still being placed without hesitation, and even an early end to the war could hardly affect the spring clip; while it is reliably reported that the large sales of lambs will result in a very light clip. It is also probable that the Australian wool coming this way will not be of the best grades, which will give the California clip a better chance. The Boston market is dull, with buyers waiting; but by the time shearing is well started, it is believed they will be compelled to enter the market, and to meet the growers at least part way as to prices.

Hide Market Demoralized.

The hide market, after a long period of high prices based on the war demand for leather, has become badly demoralized from the persistent talk of early peace. Prices are still declining, with no bottom in sight, and both dealers and tanners appear confident of much lower values. Eastern tanners are buying practically nothing, and local tanners are keeping out of the market as much as possible, though compelled to buy some for actual needs. This keeps local values rather above Eastern, as they have been for several years.

Prices are still far above normal; wet salt country hides at the beginning of 1916, when the war demand had had but little effect, were worth about 16 1/2c, while they are now quoted around 21c. The recent prices have been based entirely on abnormal military demand, and in view of the widespread opinion that the war will not last beyond next December, the outlook for further war purchases is considered doubtful. Dealers believe that, with peace definitely in sight, the market will drop heavily to abnormally low levels, with a probable return of high prices when the European reconstruction begins.

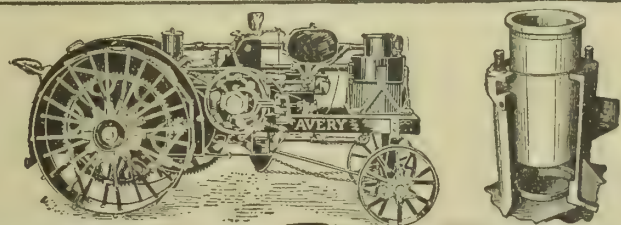
Country holders have so far taken a firm stand, quite generally refusing to accept the low prices named, though nothing can be sold except at concessions. No doubt a stampede to sell would bring an immediate drop to much lower levels, as there is believed to be a considerable supply in the country, as well as liberal stocks in packers' hands. It is possible, also, that renewed war orders may justify higher prices; but the outlook can hardly be considered encouraging to sellers.

Prospective Shortage in Barley.

The large shipping demand, and the local feeding and seeding use, has about cleaned up the 1916 crop of barley. On Dec. 1st the Chamber of Commerce of San Francisco reported stocks in the State of 240,000 tons. Since then there has been sent East, mostly for export, between 75,000 and 100,000 tons of shipping barley. The usual amount consumed in the State at this season is 30,000 tons per month for seed and feeding, but owing to high prices, it is estimated that the consumption is about 20,000 tons per month. At this rate the stocks will be depleted by July 1st. Practically all shipping barley has been exported, the order for 5,000 tons filled by the E. C. Horst Company this week having about cleaned up this variety. The Horst Company has shipped about 75,000 tons this season, mostly to Europe, for which it paid from \$1.25 to \$2.40. There is still some Eastern and European demand to be filled.

Fair Outlook for Horses.

A large lot of stock was put up for auction in San Francisco this week, including a good many drafters from a contracting company, as well as young draft stock from the country and medium-weight wagon horses. Buying was hardly as brisk as a fortnight ago, which was attributed to the cold weather. An early revival is expected, and the leading local dealers look for a good demand during the early spring, as there seems to be a great deal of interest on the part of country buyers. Buyers for the European nations also are getting into the market again, and are expected to make purchases in this market if they find suitable offerings at satisfactory prices. Their purchases were an important factor last season, taking up a large part of the available stock, and this is no doubt partly responsible for the present country demand. There is very little demand locally. The general range of prices stands about as for some time past, though quotations can be only approximate.



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THE PACIFIC RURAL PRESS

SAN FRANCISCO

FEBRUARY 3, 1917.

LOS ANGELES

Winning a Butterfat Prize on a Fruit Ranch.

[Written for Pacific Rural Press]

A 40-acre fruit ranch that needed fertilizer, two husky farm boys, scarcely out of their 'teens, having an unusual amount of good sense and practical ideas—these were the controlling factors in the winning of the \$25 monthly prize offered by Pacific Rural Press in the California State Dairy Cow Competition for the month of December.

To fully relate the story of how the prize for having had the five highest-producing cows in a grade herd, headed by a purebred sire, entered in this competition was won, it is necessary that the reader go back two years, to the time when F. O. and K. U. Bohnett assumed the management of their father's fruit ranch, near, Campbell, Santa Clara county.

High Priced Land.—At that time they were confronted with this situation: They were farming land with a valuation of \$1,000 an acre which was not paying interest on the investment plus labor charges, etc. Prunes were the chief source of income, as about 30 acres of the ranch was in a 25-year-old orchard of that fruit. The average yield at that time was a little more than 50 tons per year of dried fruit, a fair yield for the district, but insufficient to meet their rental.

Three procedures were decided upon in the hope of securing larger yields, viz.: a pruning system which would open up the centers of the trees and allow more sunshine to reach that portion of the tree, and at the same time promote new growth; a change from winter irrigation to cover-crop planting, and irrigation in spring and summer months when moisture from rainfall is not available; the establishment of a dairy in order that a sure and economical supply of fertilizer might be supplied to the orchard lands.

Just which of these factors has been most important, Bohnett Bros. do not attempt to say, but they do know that the prune crop for the two years has averaged 100 tons per season, and that the apricot, pear, and prune trees which have been fertilized with the barnyard manure have put on a bigger growth than ever before, and are theoretically in better condition to yield bigger crops. Also they know that the size of their prunes has increased from 65's to an average of 55 in 1915 and 53 in 1916.

Sell Milk.—The dairy was started on a small scale, even before active management of the place was assumed by the brothers, the surplus milk of the two family cows owned by their father being distributed to residents of Campbell. All of the feed for these two cows had to be purchased at market prices, as the five acres outside of the orchards was given over to building sites, corrals, and drying yard. But even under this handicap the two cows more than paid their way in milk and supplied a valuable lot of manure. When enlargement of the dairy was decided upon Bohnett Bros. realized that the old two-stalled shed and other out-

of-date equipment must give way to more modern and sanitary surroundings if their milk route was to be enlarged.

Cheap Buildings.—Starting with the milking shed, they tore out one wall, extended the side-walls with 1x12 boards, and added to the roof. A concrete floor was laid, steel stanchions for seven cows erected, and a one-unit Hinman milking machine installed. By cutting holes in the side-walls for ventilation and whitewashing the entire interior, they now had a homely but sanitary and cheaply constructed milking stable.

Cost Carefully Considered.—Finances, as well as sanitation and convenience being a consideration, the work of constructing the milk-house was done by the two brothers also, the building being 12 feet wide and 16 feet long, with a comparatively low roof, a three-foot screened opening around the entire building at a height of about three feet from the floor for ventilation and light, and having a well-drained concrete floor. The material for this building cost \$50. This building was

equipped with a sterilizing vat, a bottler and bottle-washer, and milk cooler. Steam and hot water were provided from a small boiler set just outside of the building and the cooler was supplied with water from a galvanized tank located on the north side of the building, which is covered with burlap. A drip faucet supplies water enough to keep this burlap wet, and the evaporation from the wet burlap cools the water inside the tank to about 10 degrees below the temperature of the well-water.

Protection for the Cattle.—With an early appreciation of the value of protection for the cows from rain and cold, a shed roof, 16 feet wide and 80 feet long, was erected alongside the feed-barn, which is 50 feet long and 16 feet wide. As shown in the illustration, neither of these buildings was expensively made, but both are efficient for their respective purposes. The feed barn holds 75 tons of chopped alfalfa, and with small hinged doors along the side adjacent to the feed-shed, it is possible to move the greater portion of the hay from barn to manger in front of the manger.

Conserving Manure.—

But protection of the cattle is not the only good feature of the feed shed; it conserves the manure as well, for in wet weather the cows spend a good portion of their time under the roof, and by keeping them well bedded down with straw, and hauling the manure out as often as the weather will permit, there is little leaching of the manure. With this same idea of conserving fertility, and the additional reason of sanitation, the manure is moved out of the corral every day in fair weather and as often as possible in the winter, resulting in a comparatively dry corral, as shown in the accompanying pictures, which were taken early in January.

We have dwelt thus long on conditions and equipment because both

(Continued on page 136.)



The Upper View Shows Bohnett Bros. and Their Prize-winning Cows, Posed for Rural Press Camera in Front of Hay Barn and Feeding Shed. Note Burlap Curtains Rolled Up, That Enclose Shed in Wet Weather. The Boards at the End of Feed Barn Shelters Feed Cutter.

Lower View Shows Prize-winning Cows with Orchards in the Background. The Corral is Kept Clean by Frequent Cleanings.

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EDITORIALS

HOME MARKETS AND CALIFORNIA PRODUCTS.

IT SEEMS to us that if those who are now claiming public attention for their declarations that it is the duty of the State to coddle local consumers, and either let the producers go hang, or else proceed actively to hang them as trust-makers and conspirators, would open their minds to an appreciation of California production as related to local consumption, they might feel the uplift of clearer, broader, and more truthful views. One of these home-consumer advocates, whose writing we happen to have seen, says this:

"The State markets, as provided for in the State market act of 1915, afford an opportunity to the farmer to consign his products to the State market director, who is authorized to sell such products and remit to the farmer all the proceeds, less a reasonable percentage for the maintenance of the market. From this it will be seen that the inevitable result will be that the natural law of supply and demand will be allowed to operate, as the producer will receive more for his labor, the consumer will be enabled to buy for less and the market will be self-sustaining. Home markets will be taken care of first and surpluses sold elsewhere."

It is easy to see the place and the period whence this writer drew such an economic philosophy. It belongs to a backwoods community of a generation ago, when the local dealer swapped groceries for produce, and, as he accumulated surpluses of kitchen-dried apples, eggs, butter, smoked meats, etc., barreled them and shipped them to a city receiver. In that way and in that time the home markets were the entrepot to distribution of surpluses, which could not be locally sold for cash or traded to a broader demand. To cite this as the way to dispose of surplus products profitably—this making of the home market the gateway to such distribution as our products require, shows how little such a writer knows of these products and of California. It is recorded that California's surplus horticultural products alone in 1915 filled 158,415 cars for shipment beyond State lines. The selling value of these may have been one hundred million dollars, of which the growers received about one-half—the other half going for packing, trading, and transportation. It is such money, which comes from beyond the State, from these and other products, that gives our California consumers money to buy with and to live a large life largely as they do; and to put forward such consumers' comforts as ground on which to promote producing enterprises is to substitute the effect for the cause.

TWO HOARY OLD CROOKS.

IT IS getting to be almost amusing to see how nearly all who start out to perform for the admiration of followers in their consuming centers, invoke those two old crooks, "Supply and Demand," as their house-gods. They are surely economic idols, for they are exactly what you make them, and when you fall down before them you worship the work of your own hands. It seems almost incredible that even sawed-off local economists, who cannot see over their own back-

fences, could be so stupid as to argue that supply and demand in our home markets should have anything whatever to do with the needs of the great producing industries of the State. In the case of the products indicated above, they have absolutely nothing to do, and can have nothing, because the figures are surpluses over and above all local consumption. In the total marketable products of the State, the local consumption is exceedingly small—possibly not one-thirtieth of our local production. Let old Supply and Demand seesaw as they like in our local markets, or let them be regulated and controlled by the State, for we have no objection to that, but its relative littleness in public importance. In either case they would demand nothing nor supply anything which would compare in importance with advancing both demand and supply for something like five hundred million dollars' worth of California products, which must find markets abroad in this country and in the world. In this issue, upon which the future development of the State depends. Demand must be planted and developed, and Supply must be increased and improved, and it is the duty of the State to organize and assist producers to do these things, for no other people either will or can achieve it. And when the State tries to do this supreme duty to present and possible producers, the State is arraigned for promoting trusts, and producers are lambasted for conspiring to get a profit which will enable them to increase production! And the legislature is besieged to secure action which every board of town trustees or of county supervisors is fully empowered to undertake.

COLONIZATION CONTROVERSY.

AT ITS last meeting the Sacramento Valley Development Association received a report from its "Colonization Committee," taking issue with the findings and recommendations of the report of the State Commission on Land Settlement and Rural Credit, which were outlined in our issues of Nov. 11 and 18 and Dec. 16. It is a carefully prepared document, and in its argument in favor of leaving colonizing efforts to private enterprise instead of assuming them as a function of the State, it is about as strong as a showing on that side of the question can be made. We presume it will be published in pamphlet form, and that copies may be had in due time from the well-known manager of the Association, W. A. Beard, of Sacramento. Although we dissent from phases of it, we commend it for study by all interested in the public and private questions involved.

The report contends and cites instances to prove that "colonization is a demonstrated success in the Sacramento Valley," in this way:

There have been failures due to various causes, but in every instance we are able to call to mind, where the land has been suited to intensive agriculture, where the company has been properly financed, and where sufficient time has elapsed, the projects have developed into prosperous communities. Men have attempted to colonize dry lands and others lands unsuited to intensive culture or requiring treatment beyond the means of the settler. Some have attempted it without sufficient capital, others have made various mistakes, no doubt; in some instances, actual fraud has been practiced. The fact remains, however, that colonization projects rightly conducted, have succeeded and are succeeding today in the Sacramento Valley.

We are quite sure that this carefully guarded statement is true, but does it not occur to the reader that there are exceptions enough taken to cover more individual losses, hardships, and disappointments than are good for the settlers themselves, or for the State? As we understand the position of the Land Settlement Commission's report, it was a claim that there was plenty of good land, and that colonization efforts properly located, promoted, and financed, should succeed. The Development Association committee contends that such efforts have succeeded, and are succeeding. We are glad that the briefs of plaintiff and defendant show substantial agreement as to the facts in this general way. It seems clear that proper efforts at land settlement make for the prosperity of the individual and the good of the State.

WHAT A SETTLER CAN DO.

THE report of the Development Association cites many instances to show that the "valley is not in a state of arrested development," and that "all over this valley, on single farms and in groups, the development of land through small holdings, irrigation, intensive culture, planting of trees, vineyards, etc., is progressing right along." It also says: "Evidences of this may be seen in the extension of irrigated areas, in the rapid increase of pumping plants for irrigation, in new farm homes, recently planted orchards and alfalfa fields, which are to be seen in greater or less number in every Sacramento valley county." This is also perfectly true, according to our observation, and as our readers, who are taking part in such development also know. The committee also reasonably contends that "land prices in the valley are not unduly inflated, and are fully warranted by the potential productiveness of the land," and instances are given thereof. We do not, however, note the connection of any of these remarks with colony enterprises, recognized as such, which is perhaps an oversight on the part of the committee. However, the way in which a colonist may establish himself on such good land is very frankly remarked in these words:

It is beyond reason to expect a colonist to pay for a valuable farm wholly out of the earnings of that farm, especially in the comparatively brief period of five years. No reasonable person should expect to pay for a valuable farm wholly out of the earnings of that farm any more than he can expect to acquire a valuable factory or store by the simple process of taking possession and operating it. The acquisition of property calls for the investment of capital and the person seeking to buy valuable farm land should expect to invest some capital in it. It is certainly asking altogether too much even of the fertile and productive lands of the Sacramento Valley that they shall yield to the settler in addition to living expenses, water costs, and interest, the twenty per cent a year necessary to enable him to pay for it in five years.

This we must regard as a rebuke to some colony promoters, or their sales' agents, for such have surely convinced settlers that investment beyond the first payment was unnecessary, for the land would do the rest. If we remember, there was some years ago a widely printed circular that the land would do it in three years. We are glad that the Association is developing more conservative views.

PRIVATE OR STATE ENTERPRISE?

WE ARE quite in sympathy with the position taken by the committee that it is American for land improvements, subdivision, and sale to be handled by individual initiative and enterprise rather than by the State, and that such attitude toward land has had something to do in making Americans what they are. It is put in this way:

The central purpose of the report of the Land Settlement Commission seems to be to urge the adoption here of a State-aided and controlled land settlement policy, such as prevails in countries of the old world and some of their colonies. We hold that the adoption of such State-aided and State-controlled land settlement at this period of our national growth would be detrimental rather than beneficial. It may be that the adoption of such methods in this State would operate to reduce the percentage of failures on the land, but if so it would be at the expense of the element of competition, in violation of the rule of the survival of the fittest, through which we have developed in these United States a superior race and a superior nation.

This is, of course, a great patriotic idea, and the question is, Can we afford to indulge in it at the expense of the losses, disappointments, and hardships which it has entailed upon so many people in recent years? The exploitation of men and women to their great detriment by disgraceful colonizing impositions is, rather a new smartness which unscrupulous people have acquired. Our grandfathers developed much truly American acuteness by skinning each other in horse-trading, but we doubt if they would skin each other's families in such land swindles as have been perpetrated by this generation. Shall the State make such action a crime and repress such over-exuberant Americanism in the penitentiaries, or shall it assume the responsibility of teaching a better way

by colonizing qualified, landless people through its own system of settlement and financing? This is the question which we shall not undertake to pursue at this time.

A STATE DEMONSTRATION.

WE HAVE briefly sketched the formal response of the Sacramento Development Association to the recommendations of the Land Settlement and Rural Credit Commission for two purposes: one is to advise them that the broad suggestion that the State should do it is controverted by an influential association of those interested in development; the other is to make clear the fact that there is no legislative proposition pending, that the State shall do any such thing. We are anxious that this last point should be clearly understood, because, if not, there might be prejudice aroused against a proposition which has actually been introduced that the State provide for a demonstration of rational and properly financed colonization on a limited scale, so that all may see how it works out in actual practice. Such a demonstration as is provided for by the bill introduced in the State Senate by Senator Breed, does not commit the State to an undertaking to displace private enterprise, but it does bring the matter to a test which may enlist the people to its extension, or it may be very valuable in showing how private or corporate colonizing undertakings must proceed to attain results most widely desirable for the success of individual settlers and the upbuilding of the State. The purposes of the proposed law are stated as follows:

"With the object of promoting closer agricultural settlement, assisting deserving and qualified persons to acquire small improved farms, providing homes for farm laborers, increasing opportunities under the Federal Farm Loan Act and demonstrating the value of adequate capital in organized direction in subdividing and preparing agricultural land for settlement, there is hereby created a State Land Settlement Board to consist of five members, appointed by the governor to hold office for a term of four years, and to receive per

diem compensation for actual service and expenses in discharge thereof.

The operations of the board thus created are limited. It may acquire, on behalf of the State, agricultural lands in California that are susceptible of intensive culture and suitable for colonization in an area of not more than ten thousand acres, and they may subdivide and sell such lands, with appurtenant water rights, to approved bona fide settlers, in areas suitable for farms and farm laborers' allotments, and, where necessary, construct roads, ditches, and drains for giving access to and insuring proper cultivation of the several farms and allotments. It may also prepare the land for irrigation, build fences, construct dwellings and outbuildings, to a cost of not exceeding \$1,500 for each farm; make loans to approved settlers on the security of stock and implements to an amount not exceeding \$3,000 on each farm. It may also sell such farms, with a value of each not exceeding \$15,000, to actual qualified settlers, who do not own other agricultural lands valued at more than \$15,000, and only one such farm to each settler. Such sales may be made on loans with amortizing payments covering not more than twenty years at 5 per cent, with the right to repay the loan at any time after five years. To finance the operation the State shall create a revolving fund of \$260,000 in the hands of the State Controller and State Treasurer, which it is calculated shall be fully returned to the State within fifty years with interest at the rate of 4 per cent.

Thus the State finances, with larger interest on its funds than it now secures, this State demonstration that a tract of land can be subdivided and settled in small farms at little more than the actual cost of the land and its improvements without large commissions and overhead expenses, which too often make land too high to enable settlers to make good—provided the settler knows how to handle himself and the land, and such only will be accepted as settlers. This undertaking proposed for California is awakening wide interest throughout the country.

an early-planted late potato but a late-planted early potato. This is what we should call the chance crop which you secured. Your May-dug Early Rose was so mature that it was good seed for another crop. On properly moist soil on the valley plains you can plant in the summer and get a fall crop of new potatoes instead of holding over late varieties from winter and spring planting. Planting early varieties in September will give you profitable potatoes for winter—unless you are in such a frosty place that the tops are killed before the tubers are well along. The American Wonder works well on that plan.

Wood Ashes on Light Soils.

To the Editor: We burn white oak wood and have lots of ashes. Our soil is a red sandy loam. Is it advisable to scatter the ashes on the ground? What are their properties as a fertilizer?—J. A. F., Sacramento.

The chief value in wood ashes is potash, but they also carry considerable lime which is useful. They are particularly wholesome to light soils because they have some influence toward compacting and rendering them more retentive. They are best spread at the beginning of the rainy season so their potash may be leached out and distributed, but can be used now if you are not going to put in seed right away. Fresh ashes may interfere with germination. Put them on your corn, tomato and melon land, and they will be innocent by planting time.

Japanese Pear Root and Oak Fungus.

To the Editor: Considering the fact that pear blight has not been very prevalent in the Napa valley, I wish to ask what pear root you would advise planting on an oak root fungus patch in an old prune orchard where conditions of moisture have caused sour sap with dead or sickly trees resulting. Has the Japanese root been found suitable for all conditions?—O. S., Napa.

So far as we know it is the long-used European pear root which has won the reputation of resisting oak root fungus, standing water and alkali. We are not aware that the Japanese root has had a chance to disclose its attitude toward all these troubles, although there is good theoretical ground for expecting that it will stand them as well as the other. If you care less for blight and more for the root fungus and wet feet, you had better plant the root which is known to come through those troubles.

Hand-Work Around Trees.

To the Editor: I have trouble making my plowmen show proper respect to the bark of young trees. Do you think it is a good plan to have a man hoe or spade around the trees before plowing, and how deep should he go?—Beginner, Alamo.

It is surely a good plan, but it is usually done after plowing so you can see just what undisturbed soil needs working. Careful growers repeat the process several times, after cultivations also. Loosen up the ground five or six inches deep and pulverize well. A good plowman with a proper rig will very seldom strike a tree even when working quite close to them, as he should.

Sunburn Borers.

To the Editor: Last year I lost several young fruit trees by a small worm that bored into the heart of the tree, entering the trees just above the ground. What can I do to prevent further damage to trees?—J. P. H., Merrillville.

Whitewash the stems down to the main roots to prevent sunburn. Do this when the buds begin to swell and renew it as may be necessary to keep a good white color on the bark.

California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau at San Francisco, for the week ending at 5 p. m., January 30, 1917.

STATIONS	Past Week	Rainfall Data		Temperature Data	
		Seasonal To Date	Normal To Date	Max'm	Min'm
Eureka	2.84	16.68	24.24	50	36
Red Bluff .....	.10	11.12	13.91	68	34
Sacramento .....	.01	6.53	10.68	62	38
San Francisco .....	.35	10.16	12.49	64	40
San Jose .....	.04	6.47	9.01	64	28
Fresno .....	.00	5.21	5.01	66	36
Independence .....	...	...	...	...	...
San Luis Obispo .....	.00	14.37	10.32	68	36
Los Angeles .....	.00	9.89	7.91	70	40
San Diego .....	.00	6.58	5.09	66	40

By
the Editor

QUERIES AND REPLIES

Inquirer Must
Give Full Name
and Address

Corn Going Wrong.

To the Editor: Ten acres of yellow dent corn planted June 1st, after irrigation and disking of land which had been plowed a month earlier, was very poor. It had two cultivations and, on the whole, the corn grew to good size but none of the ears were hard and solid. Only a few were perfect and 75 per cent were defective in that the cobs were not filled with kernels, some being complete blanks. Ten per cent was smut. The incomplete filling of the ears was strange. Some yellow flint planted at the same time and under like conditions was very much better. I have noticed for some years that corn in this valley is very shallow and loosely rooted in contrast with the firm rooting in the East. How is this explained when roots are supposed to seek the moisture? The seed was fine and said to have been raised in this valley.—J. J. B., San Jose.

This calls for a good job of guessing. The dent corn which went to the bad was a poor variety for your conditions, though it might do better under different conditions or in other years in your valley, as the seed seems to indicate. The bare or scant cobs were due to lack of pollination, which may be attributed to the weakness of the variety or to too dry heat at the pollen time of the tassels, or some other cause. The flint corn may be a stronger plant or it may have dodged some condition which affected the other. There is also a guess that the corn needed irrigation to help it through with the growth which apparently started along well while there was enough moisture in the surface soil in the fore part of the season. The shallow rooting also indicates drouth in the soil. Corn is not a very deep-rooting plant on the whole, but it can go down pretty well if there is anything to go after. We should try some other seed this year and put in some Kafir or milo to see if you cannot get better results with one of these drouth-resisting sorghums.

Russian Melons and Stock Beets.

To the Editor: What is the time of the year to plant Russian melons and where can I get the seed; also, what demand will there be for such a crop, and how close should seed be planted? When shall I plant mangels to make fall feed? Is the long red mangel best, or do you recommend some other? Is it possible to get a crop of these for spring hog-feeding between drying up of green feed and when grain stubble becomes available? How much seed does it take per acre and how planted?—G. C. S., Tudor.

We do not know the Russian melons unless someone is renaming the Persian melons in accordance with Russian domination in that quarter. If then they belong to the Casaba group of late fall and winter melons, any of our advertising seedsmen can fill your order. Seed should be planted when safe to plant corn—in six feet squares. On moist land you can plant mangels in May or June for late fall and early winter use. For spring feeding they should be started in November, but may be put in now, if the land is not full of cold water. If it is, wait until it warms and mellow, and feed before getting full size, if you need them. Plant in drills two feet apart and use about five pounds of seed per acre. Do not cover too deeply at this time of the year.

Late Fall Potatoes.

To the Editor: What is the best kind of potatoes to mature in the fall of the year and what is the planting time to get best results? Last year I planted Early Rose and dug them in May. In some places the potatoes were covered up in the soil and matured into a splendid spud from October 1 to 15. What species of second crop would you name this crop? My object is to get the best potato possible for the winter market.—Subscriber, Selma.

The standard late potato in California is the Burbank. But, according to your own experience, what you need to meet your requirement is not

Grapefruit and Oranges.

[Written for Pacific Rural Press.]

That citrus fruits, especially pomelos and oranges, grow to greater toothsome in Imperial Valley than elsewhere in the State is affirmed by C. A. Hagerty, who has some 50 or 60 orange, lemon, and grapefruit trees, mostly seven years old. Certain it is that the oranges picked for the writer late in January could scarcely be equaled for flavor, sweetness, tenderness, and juiciness, though the texture of their skins was not above the average. And Imperial county pomelos are well known as being delicious to eat out of hand; which has never been said by the writer of any other pomelos except some from Florida.

Mr. Hagerty's trees had been suffering from the cold weather, the pomelo foliage was somewhat yellow and dormant, the lemon foliage slightly mottled, but all but three of the navel trees had a healthy color.

Grapefruit picking commences in mid-November. Navels are sweet Dec. 1 even before they look ripe, and lemons for Mr. Hagerty all come in one crop later in December. Harvesting continues as long as fruits are left, but they keep in good condition on the trees through the winter. Everything is sold locally at higher prices than imported fruit brings. A two-year pomelo tree yielded 25 large fruits last season.

Pruning might help the trees; only dead brush and suckers are cut out of the pomelos and oranges. Lemons are pruned more severely.

But there is no lack of manure fertilizer. Hen manure was scattered about the trees while they were young, and the farm manure is applied heavily. Ten loads had recently been applied to 24 trees and plowed under, making this hard heavy land quite mellow, at least on top. But the subsoil is a yellow clay.

Frost has never hurt the grapefruit trees here at all; though during the big freeze a lot of orange and lemon trees were frozen back nearly to the trunks and some of them never recovered. Lemons proved tenderest.

The ground was plowed both ways, in December, deep as two horses could pull a single plow, within six feet of the trees, but without striking any roots. He used to cut them at Riverside, and he believes their greater depth in Imperial county is due to more efficient irrigation. His idea is to get the ground wet way down in winter and then irrigate weekly through the summer to prevent the trees drying out or the leaves wilting. In this soil, the water does not seep sideways very much, though it seems to go down pretty well. Three trees where the dirt was higher than usual above the furrows showed the need of something, which Mr. Hagerty said was water. They are irrigated late in January; as an irrigation last year when just coming into bloom is blamed for the blossoms falling without setting.

Increasing the Malaga Crop.

[Written for Pacific Rural Press.]

A. B. Cate of Fresno county produced a big crop of Malagas averaging at the time of our visit one and one-third packed crates per vine which were netting him a little over \$1 per crate. About 2000 crates had been picked Sept. 15 and the total crop was thus indicated as over 600 trays.

There were 8½ acres of full-grown vines and 1½ of young vines. They were cultivated before plowing or pruning, to hold moisture until plowing. They were pruned Mar. 15-28, 1916, leaving fat spurs longer than ever before and a few more of them. Amount of pruning was based on the strength of the vine as indicated by the amount of last year's growth finished thoroughly, and the number of water-sprouts.

When shoots averaged four to six inches long and before blossoms opened, the vineyard was plowed and immediately cultivated to hold moisture.

On April 25, three men spent 10 hours pinching tips from most of the outside shoots just above the forms of bunches which had appeared. Then from May 1-10, fifteen actual days' labor were spent pulling off all shoots which did not have fruit bunches, and pinching the rest. Total pinching cost about \$3 per acre. It caused laterals to shoot forth quickly and produce heavy second-crop bunches which matured before all of the first crop was picked.

Sulphuring began just before pinching. It was repeated at intervals never over 10 days until Sept.

1. Sulphur was applied at ¾ to 1½ sacks per acre with a knapsack machine. The men were instructed to shoot every leaf and bunch. To get undersides of leaves, the spray tube was held level, with the flattened angle nozzle shooting upward. No mildew had developed up to the end of September.

The vineyard was not irrigated until June when it was cultivated both ways. Cultivation and irrigation were then given as needed by the vines, not worrying about water-berries and getting very few. The crop and quality were better than ever before, the bunches larger and more uniform while berries were large and of finest quality.

ACREAGE IN FRUIT.

According to the State Board of Equalization there are approximately 11 million non-bearing fruit trees in California at this time, of which 40 per cent will come into bearing this year. The bearing and non-bearing acreage of the various fruits are given as follows:

Varieties—	1916. Bearing.	1916. Non-b'r'g.
Apple	2,029,273	1,142,038
Apricot	2,598,928	879,559
Cherry	623,438	335,138
Fig	507,814	131,664
Olive	934,739	515,221
Peach	11,123,149	1,082,149
Pear	2,027,751	699,310
Plums	1,166,630	177,556
Prunes	8,880,335	1,082,411
Lemon	1,558,971	1,019,729
Lime	831	190
Orange	8,237,115	2,227,573

Fruit trees often start to blossom when their roots are inactive.

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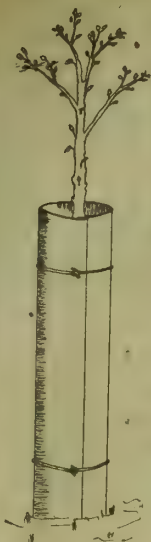
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Good stock of small sizes.

2-3 ft.	Each 35c.	Per 100 \$35.00
3-4 ft.	" 40c.	" 38.00
4-5 ft.	" 50c.	" 42.00
5-6 ft.	" 70c.	" 60.00

Write for prices on larger sizes.

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California Black Walnut.
6-8 ft., \$14.00 per 100.

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Prices

	Per 1000
10 in. long, 7 in. wide	\$10.00
12 in. long, 7 in. wide	11.00
14 in. long, 7 in. wide	12.00
16 in. long, 7 in. wide	13.50
18 in. long, 7 in. wide	15.00
24 in. long, 7 in. wide	18.00
30 in. long, 7 in. wide	21.00

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PEACH ROOT BORER IN HEMET DISTRICT.

[Written for Pacific Rural Press by
D. D. Sharp, Horticultural
Commissioner.]

On page 79 of the Pacific Rural Press, under date January 20, 1917, and under title "deciduous fruits," I see an item about the work being performed for peach tree borer in the Hemet district, Riverside county. The party who sent in that item certainly was some humorist.

I will give you an outline of what is really being done. During early summer of 1916 we discovered traces of an infestation of peach tree borers in the Hemet district. It being too late to perform any work at that time, we laid our plans for work in the fall. In view of the fact that in these orchards where we discovered the peach tree borers there is considerable exposed crown gall which contains numbers of the borers we decided that the quickest and most effectual way, while digging for borers, was to cut off the crown gall, the same being placed in sacks or boxes, piled up and burned. The spot from which the crown gall was removed was painted over with Bordeaux paste. This ended the operation.

The work being done at the present time is being done with the co-operation of the growers and would say that it has not been necessary for me to enforce the work as yet in a single instance. This method has been employed by me for the last three years in the Banning district and has been considered very successful and effectual by the growers and by my inspectors.

Riverside.

PEACHES FOR IMPERIAL VALLEY.

[Written for Pacific Rural Press.]

Not over 10 per cent of the land in Imperial Valley is fit for fruit, as estimated by E. H. Erickson, a pioneer and still successful fruit grower on the "soft" land near New River.

Some varieties of peaches bloom so late that they do not pollinize right, and thrips are likely to get them. Mr. Erickson is raising some of the Waldo peach, an early white-fleshed freestone with thin reddish and yellow skin. It is a little later than the yellow St. John, which is favored. Twelve other varieties have been tried, including the Strawberry, which proved too watery. The Alexander and other varieties are too late. They harden half-developed on account of the heat of summer. Peaches bloom generally in February and the St. Johns ripen from mid-May to June 1st.

The principal thing to watch with peaches in Imperial valley, says Mr. Erickson, is the pruning. They make great wood growth on account of the long growing season and must be severely pruned. Yet he has never tried summer pruning except to pull out the water-sprouts, for the trees need the shade of all their foliage. One orchard summer-pruned in Imperial county died two years later; and lots of trees sunburn. Not many peach orchards are to be found in the valley.

Farmers in the Reedley district are planting a large acreage to Thompson Seedless grape vines this season, according to a Rural Press field man.

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We still have a complete stock of quite a few different varieties, but we urge immediate orders as the season has advanced to actual planting time.

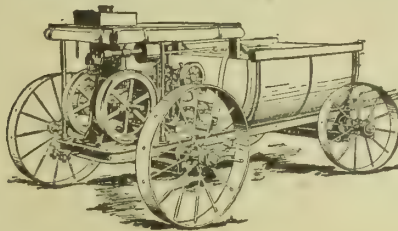
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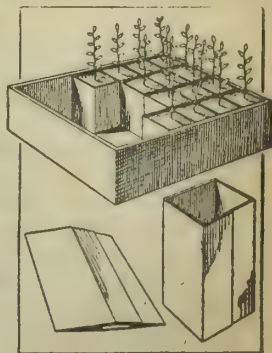
that will keep Squirrels, Rabbits and Gophers from barking your trees and give perfect protection from hot sun, sandstorms, barking in cultivation, etc. Tell us your pest and we will tell you what kind of a wrap to use. We make a number of kinds and can save every tree for you from pests.

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For starting early vegetables, such as Tomatoes, Cabbage, Eggplant, Cauliflower, Cucumbers, Cantaloupes and Squash; also for propagating Rose Cuttings, Geraniums, Eucalyptus and Conifers. It's the only practical pot on the market today for propagating work. Write us for samples of either Pots or Protectors. Tell us which you are interested in.

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Almond Varieties Compared.

To the Editor: In the issues of Pacific Rural Press for January 6 and 13 you have had articles on almonds in both of which the relative productiveness of the almond varieties were mentioned. I give below a couple of tabulations showing the returns in pounds and also in dollars and cents for each variety of each of four young almond groves here. These cover just the first three years of bearing, which is not sufficient time upon which to pass a fair opinion. This past year was a very poor year for the Drakes here, so I believe that with next year's returns averaged in the Drakes will come up in the class of the first three varieties.

Dollars and Cents Per Tree—4 10-acre Blocks, Planted February, 1911.

Tract No. 1—	Nonpar.	I. X. L.	Ne Plus	Drakes	Ne Plus Spec.*
1914	.57	.61	.72	.58	.30
1915	1.09	.91	1.54	1.68	1.60
1916	1.37	1.77	2.29	.52	.75
Aver.	1.01	1.09	1.51	.93	.88
Tract No. 2—					
1914	.61	.45	.72	.59	.29
1915	1.43	.68	1.47	1.30	1.01
1916	1.05	1.23	1.14	.22	.22
Aver.	1.03	.78	1.11	.70	.51
Tract No. 3—					
1914	.51	.50	.51	.48	.18
1915	1.04	.66	.91	.91	.78
1916	.61	.46	.58	.04	.23
Aver.	.72	.54	.66	.47	.39
Tract No. 4—					
1914	.72	.74	.69	.79	.47
1915	1.44	.99	1.75	1.41	1.15
1916	.84	1.09	1.32	.18	.57
Aver.	1.00	.94	1.25	.79	.73

Pounds Per Tree—Ten-acre Tracts Planted February, 1911.

Tract No. 1.	Nonpar.	I. X. L.	Ne Plus	Drakes	Ne Plus Spec.*
1914	3.15	4.04	4.97	4.67	2.25
1915	7.52	6.97	12.87	16.03	16.01
1916	7.93	11.93	16.71	3.98	5.91
Aver.	6.20	7.66	11.52	8.23	8.06
Tract No. 2—					
1914	3.39	3.00	5.00	4.71	2.15
1915	9.89	5.27	12.27	12.37	10.10
1916	6.10	8.31	8.28	1.66	1.74
Aver.	6.46	5.52	8.51	6.24	4.66
Tract No. 3—					
1914	2.74	3.34	3.5	3.86	1.34
1915	7.19	5.11	7.62	8.71	7.8
1916	3.55	3.11	4.25	.28	1.82
Aver.	4.49	3.85	5.12	4.28	3.65
Tract No. 4—					
1914	4.02	4.95	4.80	6.32	3.50
1915	9.92	7.58	14.61	13.40	11.54
1916	1.86	7.42	9.58	1.42	4.45
Aver.	6.26	6.65	9.66	7.04	6.49

*"Ne Plus Special" is a mongrel half-breed.

Banning, Cal.

Observing Grower.

Roots for Fruit Trees.

To the Editor: Adding to what you give in this week's issue of "What Fruit Tree Planters Should Know," the following information may be of some value to prospective fruit planters.

Pears will make good growth planted in light silty or sand-and-silt soil where water is near the surface. Apricots, on the contrary, will not, but for all light sandy soils, where other conditions are right, the apricot will do well if planted on apricot root, but not on myrobalan root. Also, for sandy soils, the French prune does better on the almond root than on the myrobalan root.

I have had considerable experience with both soils and roots, and while convinced of the merits of the myrobalan root in general, I would call attention to the above facts as preventive of disappointment and discouragement in planting on land not generally considered first-class fruit land, but which may also be that.

If proper judgment be used in selecting the right root for the variety of tree to be grown and kind of soil planted in. H. W. Yolland.

Paicines.

A FIG GROWERS' POOL.

As a result of the fig institute recently held at Fresno two large fig growers south of Fresno have started a canvass in all parts of the San Joaquin Valley in an effort to form a pool of the 1917 fig crop in order that a uniform price may be secured by all growers. The pool includes White Adriatic, Calimyrna and Black Mission varieties. It is probable that the ultimate result of this will be a fig growers' association. Because of this packers are said to have put twenty buyers into the field contracting for the 1917 crop.

One of the palms at the Imperial Valley Experiment Station yielded 150 pounds of dates last season, according to Supt. W. E. Packard.

This is to advise that we will demonstrate and take orders for the BEAN SPRAY PUMP COMPANY'S CATERPILLAR TRACTOR at the following places and dates:

El Monte—Friday & Saturday, Feb. 2 & 3.
Duarte—Monday, Feb. 5.
Monrovia—Tuesday & Wednesday, Feb. 6-7.
San Gabriel—Thursday, Feb. 8.
Glendale—Friday & Saturday, Feb. 9 & 10.
Burbank—Monday & Tuesday, Feb. 12 & 13.
San Fernando—Wednesday, Feb. 14.
Owensmouth—Thursday, Feb. 15.
Lankershim—Friday & Saturday, Feb. 16 & 17.

You are cordially invited to be present.

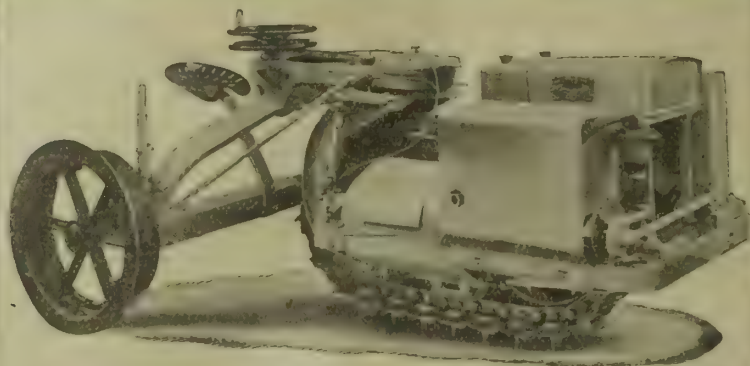
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You can do two things to make your land earn more money—increase your yield, or decrease your operating cost.

Now comes a wonderful little tractor to help you do both—a tractor built by the makers of the famous Bean Spraying outfits.

Only 2800 lbs. weight means an upkeep cost reduced to the minimum, yet patented construction provides a six-horse traction! Great combination! a two-horse upkeep cost, six-horse pulling power, and a buying price of only \$950 cash (if ordered now). On account of the increased cost of high-grade material the cash price advances to \$975 on February 10th.

The BEAN TrackPULL plows up within an inch of the vines in a vineyard without

breaking off young shoots. Goes under tree boughs only four feet off the ground (where no horse can go) in an orchard. Gets into the corners. Turns inside a 10-foot circle. Pulls instead of pushes itself over the ground and pulls as strong on turns as on the straight-away. "Gee's" and "haws" like a team. Pulls out of soft spots instead of digging in deeper. Works 10 hours a day at full speed, if necessary, never tiring, and eating only while working and making a profit for you. Powerful motor runs stationary machinery when tractor isn't in the fields. Why do without such a producer?

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Please send me your big folder describing BEAN TrackPULL Tractor, and advise me when I can see one. If I decide to purchase I will need my tractor about _____ 191____.

I work _____ acres
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City _____ State _____

SPRAY GRAPES EARLY FOR MILDEW.

[Written for Pacific Rural Press.]

Grape mildew spores are resting now, awaiting the favorable conditions of spring to start the usual bunch of inquiries how to prevent it more effectively than by sulphuring.

Thorough sulphuring, at times when the sulphur may evaporate, and as often as new spores might germinate, has proved too much of a problem in many cases.

J. McKindley of San Joaquin county had lots of mildew in the season of 1915. He had only a little in 1916 and hopes to have less in 1917.

He sprayed about 20 acres of eight-year Tokays last spring when the shoots were 10 to 12 inches long, and sulphured three times afterward. The spray was atomic sulphur, twelve pounds per 100 gallons of water. The vineyard will be sprayed twice next year, as the atomic sulphur sticks better until favorable weather for its work, and presents finer particles to the action of heat to evaporate it than does flowers of sulphur. Earlier spraying would catch spores that may start working when shoots are only a few inches long.

Mr. McKindley used a handpower pump, aiming at 125 pounds pressure, but thinks more pressure would be better. With a 200-gallon tank and two leads of hose, he sprayed about four acres a day. Use of power sprayers might have been cheaper and more effective.

SULTANAS OR THOMPSONS?

To the Editor: Why does Jas. Madison of the Associated Raisin Co. advise planting Sultanas rather than Thompsons?—Subscriber.

This query was referred to Mr. Madison, but he has not seen fit to answer. According to Roy Dewhirst of Fresno county, there are so many Thompsons now planted but not bearing, that it may be hard to find a market for them when the end of the war shall open our markets to the cheap Greek "currants." The Sultana being so near like Greek currants, and being a surer crop, with less wood growth and bearing more fruit than Thompsons according to Mr. Dewhirst, makes them probably preferable to the higher-priced Thompsons for planting now. He is the Associated Company's agent for a large territory south of Kings river, and is advising Thompsons for old men who want quick money, but Sultanas for young men who look farther to the future. He looks for the price of Sultanas to equal that of Thompsons not many years hence; for the Sultana acreage is very limited.

VINEYARD QUESTIONS ANSWERED.

[Answered by Frank Henry, Fresno.]

Melilotus Cover Crop.—I am thinking of sowing melilotus in my vineyard, which is over 20 years old. Do you think, if put in immediately, it would have a long enough growing season if I left it till March, or possibly April, before plowing?

Melilotus can be sown and left until May with good results, both in regards as to melilotus and the setting of his grapes at blossom time,

providing the vines are in shape to irrigate when ready to plow. Don't be afraid of ground getting dry; it is only a benefit to your crop.

Subsoiling Old Vineyard.—Do you think that subsoiling an old vineyard would improve or harm it? My vines are 6x12.—A. R. P., Dinuba.

Subsoiling your center 6 feet will be all right, either before sowing melilotus, or if you do not sow melilotus, just before blossom time is a good time to subsoil, but you will have to irrigate later on in season.

PRUNE AND APRICOT TRUSTEES.

The complete result of the primary elections for trustees of the Prune and Apricot Association are as follows: W. J. O'Connor, Chico;

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To those who have old walnut trees which they desire to work over it will give us great pleasure to mail our "Bulletin on Grafting."

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This splendid fruit, being a little out of the ordinary, is often looked upon as of not great commercial importance. However, it is, and those who avail themselves of the opportunity of planting an acreage this season, will undoubtedly profit by it. No garden is complete without them, and every orchard should contain its quota of Persimmons. Nearly every one has eaten the ripe persimmon, but few have tasted the fruit when dried. It is delicious, and by many thought even to surpass the Commercial Date.

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Of the eight or nine species of hickories the one which produces the most remarkable fruit and in the most profitable quantities is the Pecan. It is largely due to the impetus the Pecan industry has received in recent years that has encouraged the planting of trees on a commercial scale of the improved paper shell types. The trees thrive in a great variety of soils. Pecans will prove a valuable acquisition to our list of nut fruits in the warm interior valleys of California, Oregon and Washington.

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433 Holland Bldg.
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Winning a Butterfat Prize on a Fruit Ranch

(Continued from first page.)

have had a great deal to do with the commercial success of the undertaking. Because of them, Bohnett Bros. have been enabled to produce a milk with a bacteria content of 10,000 per c.c., a mark which many certified plants, with thousands of dollars' worth of equipment, consider especially good. And because of this low bacteria count, the owners have been able to raise the price of their milk from \$2.50 per quart per month to \$3 a quart in a small town—no insignificant feat in itself.

The Cows.—Confronted with the problem of securing cows quickly, in order to put their fertility plan into operation, they were unable to wait until they could breed good cows. Their only course was to buy them, and to use as much care and judgment in the selection as possible.

The first requisite was a healthy cow. Unless she could pass the tuberculin test—and this was administered by themselves—they would not buy her at any price. Naturally they depended a good deal upon conformation, but not wholly. Whenever possible they watched her being milked, they weighed the milk, and took samples. In this way they were able to get a fairly good idea of her producing capacity, and thus it was that they secured all but one of the five prize-winning cows and practically all of the sixteen head of cows now being milked. A high-testing milk is preferred in this selection, the average for the present herd being 4.7%.

But constructive dairying—and that is what Bohnett Bros. believe in—demands that one breed his own cattle and select heifers from the best cows, so a year ago a registered Guernsey bull out of a State record cow was purchased, and now all of the heifer calves are being raised, notwithstanding that all of the feed for them, except skim milk, has to be bought. Daily weighing of the milk from each cow and monthly testing of composite samples have always been the rule here.

Feed.—Purchasing feed is perhaps not the ideal condition for a dairyman, especially in a district almost entirely given over to fruit culture, but by contracting for all of their feed about the first of August they are able to secure it at a minimum figure. Alfalfa hay, dried beet pulp, and cocoanut meal are the feeds used, the hay being chopped as before mentioned because it is believed to effect a saving of at least 20 per cent when fed in that manner, and the beet pulp and cocoanut meal are fed in a moistened condition. In mixing the concentrated ration, 120 pounds of cocoanut meal are used with 200 pounds of beet pulp. Ordinarily a

daily ration of 10 pounds of this mixture is fed to each cow, but more of the cocoanut meal is fed to high-testing cows. Also, the amount of the standard ration is increased to high-producing cows, as is shown below in the ration of the prize-winning cows.

The Prize Cows.—The breeding of the cows that are entered in the State competition is largely a matter of guesswork because of the fact that they were mostly purchased from parties who had in turn bought them from some one else. From the testing percentage of their milk it may be assumed that they all have some Channel Island breeding back of them. In appearance they resemble both Jersey, Guernsey, and Holstein, all being of good dairy type, as may be seen in the photographs. The length of time they were fresh varied, two of them only being on test a part of December, which lowered the general average production for the month.

Spot, in appearance a Jersey-Holstein cross, was the highest producer, giving 1580.2 pounds milk containing 77.67 pounds fat; average test, 4.91 per cent; daily concentrate ration, 17 pounds; full month's test.

Dorris, a big cow apparently about three-quarters Holstein, produced 1198.5 pounds milk, containing 50.81 pounds fat. Average test 4.24 per cent; daily concentrates, 10 to 12 pounds; full month's test.

Dorris, a big cow, apparently about 1030 pounds of milk containing 48.68 pounds fat; average test, 4.73 per cent; daily concentrates, 10 to 12 pounds.

Fayne, on test Dec. 13 to 31, thought to be Jersey-Holstein, produced 997.8 pounds milk containing 41 pounds fat; average test, 4.11 per cent; daily concentrates, 12 to 14 pounds.

Murne, evidently Jersey breeding, on test Dec. 13 to 31, produced 620 pounds milk containing 28.45 pounds fat; average test 4.59 per cent; daily concentrates, 12 to 14 pounds.

Care and Feeding.—The care and feed before freshening given these cows were the same as practiced with the entire herd. About two weeks before freshening each cow is put in a box-stall, the only one on the ranch by the way, and fed succulent feed, when that is available, together with a ration of dried beet pulp and cocoanut meal. The object is to get the cows in as good flesh as possible because, as Bohnett Bros. say, "It can all be milked off after she freshens." Besides feed, and the capacity of the cows to produce, shelter is given credit for the high average fat yield of 300 pounds per cow last year. With the cheap feeding-shed already described, there has been no noticeable falling off in milk flow with any of the cows this winter, although there was during the winter of 1915-16; and on that account Bohnett Bros. expect an average production for their herd of 375 to 400 pounds of fat during 1917.

Organization of the Sacramento County Farm Bureau has been completed and Carl Williams assumed office February 1 as Farm Adviser.

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Imperial Valley Cantaloupe Growing.

[Written for Pacific Rural Press.]

Cantaloupe planting in Imperial valley is progressing late in January. Cold weather has delayed planting somewhat, for the seed often rots when planted in cold ground. Wide rounded ridges about eight feet from center to center have been made in most cases with narrow furrows between. The seed is planted half way up one side of each of these. This puts the roots close to irrigation but keeps the plants out of it largely, and spreads them out to sun and air.

Alfalfa ground is selected whenever possible according to M. Manoogian, who had charge of 160 acres of cantaloupes last season for one company. It is first plowed three or four inches deep, then about a month later is plowed seven or eight inches deep. The "hard" finely divided "gumbo" soil may produce larger crops if properly worked; but the "soft" land in which more or less sand makes it more loamy and warm, produces the earliest. Cantaloupes do not thrive in alkali.

Several varieties are grown. Early Waters is usually planted first, but would mature first if planted at the same time as the others. On account of its egg shape, it is not popular on the market and not so many are now grown as formerly. The Rockyford Pollock, Yellow Pink, and Greenflesh all mature about the same time and are the standard varieties here.

On the early plantings, some of which are put in late in Dec. and early in Jan., a pointed cap of oiled paper is placed over each hill as it is

planted by hand to hold the warmth of the ground and protect the seedling plants from frost. Later plantings are done by machine and not covered with the papers.

The cantaloupes are irrigated according to soil conditions. The ground must not be dried very deep. In hot weather it dries enough to walk on in a day. Water is not allowed to cover the seeds or get around the plant stems. During picking especially, water is applied every three or four days, the pickers walking on the ridges when the furrows are wet.

Three or four cultivations are all that can be given on account of vine growth. There are no troubles according to Mr. Manoogian, except aphids. One grower lost 260 acres on account of this pest a year or two ago. While the State Insectary has furnished billions of ladybirds to control aphids, Mr. Manoogian burns the plants on and all around an infected area as soon as it is discovered, usually during picking time.

There has been a conflict of interest in regard to the proper maturity for picking; but it is quite likely that the rule established last season by most of the companies in connection with County Horticultural Commissioner F. W. Waite will be adhered to. The netting on the melons should be rounded, even up to the stem end, and the melon should pull loose without leaving any slivers of the stem on the melon. This system worked much to the satisfaction of the markets last year.

add a lot of humus to the ground by disking it up in the fall, whereas the corn would use up humus and other fertilizing elements. Another thing beans will produce is nitrogen, the most expensive and valuable fertilizing element and by far the most necessary element needed in growing rhubarb.

My plan is to grow the beans in the summer and disk it up in the fall, say early in September, using a one-horse disk.

I hope your correspondent will be able to get something of value to him out of this letter. You may send it to him if you like.

Covina.

A. W. Lee.



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WRITE FOR BULLETINS—10

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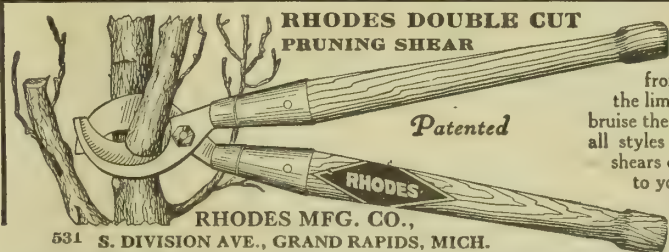
Intercropping for Rhubarb.

To the Editor: I notice in your last week's issue, in the Queries and Answers department, under the heading "Rhubarb in Stanislaus," a question and answer in regard to growing Giant Crimson Winter Rhubarb in Stanislaus county.

While we need no shade here for rhubarb in summer, and our summers are just as long and dry as they are in Stanislaus county, I believe it gets hotter there than it does here, although we are 40 miles from the coast. Consequently some shade, such as he suggests from corn, would doubtless help carry it through the summer. In Florida, where it has always been found impossible to carry it through the hot, rainy summers, as it would invariably die down in the summer, the man who has done the most with it there writes me that by using plenty of shade in the summer a good deal of it will live through.

I think that a plan that I intend to adopt might very likely help him out if he adopted it. It is to grow blackeye beans or cow peas between the rhubarb rows in the summer. It is not to protect the plants from the sun that I am going to adopt it, as I have no such trouble, but solely for its fertilizing value, especially the humus that it will produce; but in his case, while it would probably not shade the plants any it would shade the ground and help to keep it moist if he kept it irrigated, and also keep the ground cool, and this ought to be a very material help in keeping the

sun from injuring the plants, I should think. I think it might do even more good than the corn as the corn would not cover the ground and would dry it out a great deal more. And in addition, the beans would



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Costs of Producing Cotton.

[Written for Pacific Rural Press.]

Two kinds of cotton are grown in Imperial Valley. Most of it is "short staple" (Mebane) with fiber about 1 1-16 inches long and selling at this writing about 16 to 18 cents a pound. The rest is "long staple" (Durango) with fibers about 1 3-16 inches long and selling about 27 to 29 cents a pound. Why any of the low-priced short staple should be grown is told by one of the growers, who proposes to enlarge his acreage next year; but to sell it through the long-staple growers' co-operative association. He says that it yields a little more, matures earlier, the bolls are larger, having a larger proportion with fine "locks," stands water shortage better, and has a larger proportion of lint to seed. Among the reasons ascribed by long-staple growers are that most of the cotton growers are from Southern States, where they have been imbued with the idea that long-staple won't grow inland. They admit that pure Mebane seed would probably out-yield the Durango slightly, but such pure seed is said not to be available and it is hard to understand why the high-priced cotton should not be almost exclusively grown. On E. Gannon's ranch in the western part of the Valley are several fields of both kinds in which the Durango is yielding much the heavier. On the other hand, Lee Bengé points to his short-staple crop from carefully selected seed, of 38 bales from 35 acres this year. Houghton and Simpson, who grow only Durango with equally careful culture, are harvesting a crop estimated at about a bale per acre from 80 acres. One of their fields which suffered for water and was therefore picked first was estimated at 0.91 bales when all but the unopened bolls had been picked, while another was yielding 1 1-3 bales per acre.

Cost of Production.—The testimony of many is that the cost of production is practically the same for both kinds, except in picking. Houghton and Simpson, young men whom their banker recommends as "making good by head work and hand work, steady on the job all the time," and who have grown three crops by careful methods, give the following estimates of the costs of production as based on their experience. Other growers omit some of the items, such as plowing, and some of the cultivation and water, but their yields generally show more than proportionally less.

Where cotton has been grown the past season, the stalks are cut up with a regular stalk-cutter in the winter at a cost of \$.75 to \$1.00 per acre, depending on their size and number. This includes clearing away such stalks as cannot be well worked into the soil with a disk. The disking costs \$1 to \$1.25 per acre. The ground is always plowed and harrowed by these men at a cost of \$2.50 to \$3.00 per acre. It is then listed to make ridges where the furrows were the previous year, for \$1 per acre. Planting costs about \$1 and the seed \$.75 to \$1. Three cultivations are charged \$3 and chopping (thinning with heavy hoes) costs \$1 to \$1.50, depending on thickness of planting, etc. Water

costs \$1.75 to \$2 per acre per season at \$1 per cubic foot per second for 24 hours. Labor of attending the water is placed at \$2 per acre, and taxes and assessments for maintenance of ditches are \$3 to \$5 per acre according to the season and district and condition ditches are put into. Picking cost \$.90 to \$1.10 per cwt. of "seed cotton" as it comes from the field last year, but it cost \$1.25 to \$1.50 this year. At a bale per acre, the picking cost \$20 to \$24 per acre. Mr. Bengé got pickers at \$1 to \$1.25 this year for his short staple, on account of the larger bolls. Houghton and Simpson, who haul about three bales of seed cotton per load, 4 1/2 miles to the gin, charge up \$1.50 to \$2.00 per bale for hauling. Ginning costs \$4.50 per bale for either long or short staple, including bagging and tying.

The totals thus estimated, and not including rent or interest on investment or cost of leveling, is \$43.75 to \$52.25. A bale of lint at 27 cents sells for \$135 and the seed from it sells for \$22. Mr. Smith, who grew 85 acres on the Gannon place, averaging nearly a bale per acre in spite of a seriously poor stand in some fields and an over-thick stand in others, sold his crop on the stalks for \$5,500. The seed, of which there is more than twice as much weight as of lint in the cotton as it comes from the field, is now selling at two cents per pound. Thus it just about pays for the picking, and gins buy it without further effort on the part of the grower.

Turlock business men are entering a protest against the purchase of permanent county fair grounds at Modesto on the grounds that the county fair should be held in a different town each year.

Shipments of hay from the Patterson district of Stanislaus county for 1916 greatly exceeded those of 1915.



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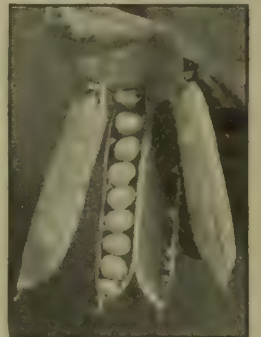
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How to Treat Grain for Smut.

To the Editor: Smut seems to be in most of the grain that was grown here this last season, regardless of bluestoning. Is there any other way of treating wheat or barley that would give better results?—F. H. Robinson, Neenoch, Cal.
[Answered by Prof. John W. Gilmore, Univ. of Cal., Berkeley.]

If the seed wheat referred to in the communication was thoroughly treated, I do not understand why the treatment should not have been more effective than it was, except on the ground that the soil in which the seed was planted was already thoroughly infested with smut. If such were the case no treatment of the seed would be thoroughly effective. Then, too, there are two different kinds of smut, commonly called Loose smut, and Stinking smut; the former not being affected by any known means of treatment. Sometimes a quantity of seed may also contain the balls or pods of the

Stinking smut, and these are not readily affected by treatment, and if not, may carry the disease into the planted crop.

Aside from the treatment of seed wheat with copper sulphate, two other methods are sometimes employed, though it is generally considered for wheat that the copper sulphate method is the better and more easily applied. The next most effective remedy seems to be in the treatment of the seed with formalin, as follows: Make a solution of one pound of formalin to about forty gallons of water, soak the seed in this solution until each grain is thoroughly wet. This may be accomplished by having the solution in a barrel and churning, or agitating, the grain in a bag until each grain is thoroughly wet. The grain may then be spread out in the shade to dry. Sometimes this treatment is modified by sprinkling the solution over a pile of seed wheat and afterwards shoveling the mass over several times until each grain is thoroughly wet.

A third method that is sometimes employed, though with some risk because the germ of the wheat seed is exposed, is the hot water treatment. The wheat is dipped into a receptacle containing water heated to a temperature of about 130 degrees. In performing this treatment one must be very careful that the grain does not stay in the water too long, and also considerable care is required in keeping the water up to the required temperature. The grain should not be allowed to remain in the hot water more than five minutes. This method of treatment is much better for such seeds as barley and oats which are enclosed in their glumes.

COVERING TOMATO PLANTS FROM FROST.

[Written for Pacific Rural Press.]

Take a hoe and cover young tomato plants with soil. This cover can be left on two nights without injury to the plants. If it turns cold after dark just take a lantern and hoe and the job can be done in a few minutes and you do not have to hunt for paper, cans, sacks, boxes, hay or any other old thing to cover them with.

W. T. Jones.

Shawmut.

About 50,000 acres of cotton were grown in Imperial Valley on the Mexican side last year, and about 43,000 on the American side according to F. W. Waite. In 1915 the figures were 30,000 and 15,000 respectively, yielding 43,000 ginned bales. Picking of the 1916 crop is still under way.

Potato seed balls have recently been furnished the University of California by Andrew Wyatt of Auburn, who was a contestant in a potato-growing contest last year. The University intends trying out the seed in the hope of securing an improved variety.

From present indications of activity in rice land deals in Glenn county, predictions are being made about 17,000 acres will be planted to that crop in that county in 1917.

TALKS ON Nitrogenous Fertilization

Number 8

IT is a fact that California soils respond promptly and generously to intelligent fertilization. This is particularly true concerning nitrogen, in which important plant-food element so many soils are deficient. But as is always the case, some forms of nitrogen are better than others.

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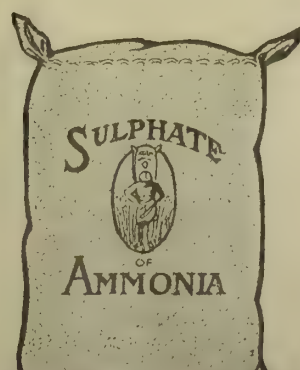
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A. P. PARKER & CO.

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SAN FRANCISCO, CAL.

For advice as to application write
THE BARRETT COMPANY
AGRICULTURAL DEPT.
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Sample sent on request



CORY'S MAMMOTH THORNLESS Blackberry



No briars to tear
the hands or clothing—
an economy at harvest. The
earliest berry to
open—a guarantee
of profit at
market. A prolific
bearer of gigantic
fruit—insuring
quantity. A luscious,
almost seedless
berry of unsurpassed
flavor—the final requisite.

Thornless
Quality
is guaranteed.
Affidavits furnished.
Supply limited.
Booking orders
now.
State quantity
and
Ask for prices.

Ekstein Nursery Co., Modesto, Cal.
SOLE DISTRIBUTORS.

Potatoes

(Certified Seed)

Alfalfa Grass Seeds
FRUIT TREES

WRITE FOR PRICES

California Seed Co.
151 Market St.
SAN FRANCISCO, CAL.

FOR SALE

A few thousand Lisbon
Lemon trees, 2 years old.
Selected buds from heavy-
bearing trees, absolutely un-
touched by frost.

CHAS. STORY.

Rivera, Calif.

How I Grew My Crop of Potatoes.

[By Sherwood Beckman in San Joaquin Farm Bureau Monthly.]

I selected a plot of ground, a rich, sandy loam, in the Lodi district, 29 1/2 by 147 feet, which had been in alfalfa a number of years.

The last year's crop harvested being a crop of beans, left the ground in fine shape for a volunteer crop of clover. This I plowed under, nine inches deep, on February 1st.

On February 8th the plot was harrowed; the ground was in an ideal condition for the forming of a good seed bed.

March 8th I received my shipment of certified seed potatoes from Carl Nielsen, Sebastopol. These potatoes were of the British Queen variety.

March 11th I cut my potatoes, plowed the ground and planted them, about four inches deep, the rows being three feet apart and the hills 15 inches in the rows.

April 1st I harrowed my ground, which left it in a pulverized condition. Immediately following the potatoes began to come up, giving an even stand.

I cultivated for the first time on April 15th, working the ground about five inches deep. The same day I raked between the hills to kill all the small weeds which had started.

On May 6th I irrigated, as the ground was becoming dry.

Following this irrigation on May 9th the potatoes were hilled with a cultivator, which had a hilling shear attached to the rear standard.

On May 14th this was repeated.

The hilling was done to encourage the setting on of the tubers.

I thought it necessary to irrigate them again on May 20th.

By May 24th the ground was dry enough to hill again.

This was done to form a mulch and prevent the loss of moisture through the baking of the ground.

Again on July 3rd I irrigated. By this time the vines were large enough to entirely shade the ground.

I could not cultivate on account of the tubers being so near the surface. No cultivation required frequent irrigation in order to provide a continuous moisture supply.

On June 19th I irrigated, and again on June 27th. Immediately following the last irrigation I mulched with straw to conserve sufficient moisture without injuring the quality of the potatoes. This was done as an experiment on my part,

which proved very satisfactory.

July 29th I harvested my potato crop, with the aid of several club members and our club instructor, the yield being 2894 pounds of potatoes.

Yield.

No. 1 marketable	1678 lbs.
No. 2 knobby	564 lbs.
Culls	624 lbs.
Five best hills	28 lbs.

Total 2894 lbs.

Labor Report.

Man labor, 43 1/2 hours,	
at 10 cents	\$ 4.34
Horse labor, 5 5-6 hours	
at 5 cents .....	.29

Total \$ 4.63

General Expenses.

Seed, at \$3 per cwt ...	\$ 3.00
Land rent, at \$10 per	
acre	1.00
Water, at \$1.50 per acre	.15
Sacks, at 5 cents	1.50

Total \$ 5.65

Total Receipts.

2270 lbs. marketable po-	
tatoes, at 2 cents ...	\$45.40
624 lbs. culls, at 20 per	
cent of market price	2.50

Total \$47.90

Total Expenses.

Labor	\$ 4.63
General expense	5.65

Total 10.28

Profit \$37.62

MAKING GOOD FOXTAIL HAY.

To the Editor: In regard to one of your subscribers' query as to cutting foxtail for hay, will say that I have had about thirty years' experience in cutting foxtail for hay near Hanford. If he will cut it when it is just starting to head out he will find that it will make better hay for dairy cows than alfalfa hay, for they will give more milk on it. Horses will also do well on it. After it gets riper it is nearly worthless. But he must be careful in curing it as it heats easily and I have known stacks of it to burn when put up too green.

F. McClellan.

Reedley.

UNCLE SAM'S FARM CREDIT COLUMN.

[Compiled for Pacific Rural Press from U. S. Dept. of Agr. valuations.]

All farm products during 1916	\$13,449,000,000
All field crops	9,111,000,000
Animal products	4,338,000,000

Special Crops:

Corn	\$2,296,000,000	Potatoes	417,000,000
Cotton	1,146,000,000	Wood lot	221,000,000
Hay	1,162,000,000	Apples	186,000,000
Wheat	1,026,000,000	Tobacco	169,000,000
Oats	656,000,000	Barley	160,000,000

The gross value of farm crops and animal products for 1916 exceeds by \$2,674,000,000 the total of 1915, the previous record, and more than three and a half billion dollars the value in 1914. Crop production for the year did not reach record quantity figures except in a few minor instances, but high prices sent total values up. The level of prices paid to producers for the principal crops on December 1, 1916, was about 55.9 per cent higher than a year previous; 52.9 per cent higher than two years before and 52.8 per cent higher than the average of the previous eight years on December 1.

NOW is the Time to Fertilize Fruit Trees

The rains will dissolve the plant food and take it down to the roots. The well-fed trees will bear and mature **BIGGER CROPS OF BETTER FRUIT.**

Fertilizing is not an expense, but an investment, yielding large and immediate returns.

Gold Bear Fertilizers



are scientifically manufactured from animal products that contain the necessary elements for California soil conditions and crop necessities.

Address

Fertilizer Department.

WESTERN MEAT COMPANY

San Francisco, California

He'll Make You Poor - KILL HIM

What is the use of preparing a good seed bed and planting seed that cost good money if you let squirrels and gophers eat your profits. These pests are a constant danger to crops and a constant menace to the family's health.

Carbon Bisulphide

has for over 30 years proven to be the most effective—the only sure killer of squirrels, gophers, rats, prairie dogs, ants, moles, yellow jackets, moths, weevils, lice, etc. It is easy and safe to use.

Write today for interesting folder and learn how this profit saver works.

Wheeler, Reynolds & Stauffer
624 California St.
San Francisco California

FORESTRY, PLANTING

Pines 20 varieties
Spruce 10 varieties
Firs 8 varieties
Cypress, Redwood, Junipers,
Cedars, Taxodium, Etc.
Write for Prices.

PIONEER NURSERY,
DEPT. 3, MONROVIA, CAL.

Wheat, oats, and barley are all self-pollinating.

IRON AGE

Farm, Garden and Orchard Tools

Answer the farmers' big questions. How can I grow crops with less expense? How can I save in planting potatoes? How make high priced seed go farthest? The

IRON AGE Potato Planter

solves the labor problem and makes the best use of high priced seed. Means \$5 to \$10 extra profit per acre.

Every seed piece in its place and only one. Saves 1 to 2 bushels seed per acre. Uniform depth even spacing. We make a full line of potato machinery. Send for booklet today.

No Misses

No Doubles

Batesman Mfg. Co., Box 39B, Greenloch, N. J.

KANOUSE & KNOTT, General Agents

FIRST & JACKSON STREETS, OAKLAND, CAL.

LET BOYD HELP YOU BUILD!

COMPLETE HOUSES \$300 TO \$900

"Boyd's Lumber Cut System" is the cheapest, simplest and safest way to build. Every piece that goes into the building is mill-cut to exact size, and both material and plans are plainly marked to show just where each piece goes. Complete plans and instructions furnished.

Send for Plan Book—FREE
We also ship lumber direct at wholesale prices—send your list for our free, freight-prepaid estimate.



RHUBARB

PLANT WAGNER'S IMPROVED NOW

Yields 1,000 per acre annually. Splendid results in six months. Special price for immediate planting (also Cactus, Berries, Small Fruit, etc.). Write

J.B. WAGNER

Rhubarb, Berry & Cactus Specialist

PASADENA, CALIFORNIA

MOVING AN OLD ARAUCARIA.

[Written for Pacific Rural Press by John McLaren, Supt. Golden Gate Park.]

In reply to a correspondent of yours whose question you send me, I beg to state that if I were moving an Araucaria Imbricata, fifteen feet high, I should dig a trench along the entire ball four feet deep, two feet wide and six feet from the stem of the tree, in other words a ball twelve feet square. I would then make a box of two-inch planks surrounding the whole ball, three inches larger than the ball. The roots should be cut with a sharp instrument so that they would not be bruised but show a clean cut. Between the ball and the box fill in with rich, light soil; outside the box should be filled with soil to its original level and thoroughly watered. Keep the tree boxed as above for six months, watering frequently.

After the six months have expired, the fresh soil put in will no doubt be filled with a myriad of feeding roots. When this time is up dig down around the outside of the box and undermine the same, cutting the tap and bottom roots, fastening the back of the box to the sides with strong nails. After the bottom is on the box put two strong six by eight timbers under the box, raise with jack screws to the level of the ground. To all four sides of the box should be nailed timbers two by six, the full height of the tree. These should be placed so as to form a strong framework and the stem of the tree tied to the framework, so that the tree will not shake backwards and forwards when moving to the permanent site. The tree should be carefully watered and attended to by experienced men for at least two years.

TIME TO PLANT AND GRADE POTATOES.

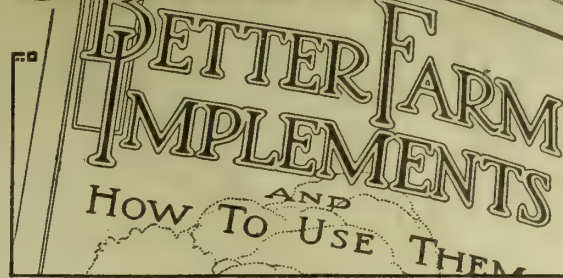
To the Editor: I have about four acres of made land, a sandy loam, and would like to know the best time and the best grade of potatoes to plant.—D. H., Princeton.

[Answered by W. V. Shear, Potato Specialist, Stockton.]

As to the best time to plant potatoes: in spring plant from three to four weeks before the last heavy frost is expected. Potato plants are fairly hardy but will not withstand heavy frost, and since it takes about three weeks for the plants to appear above ground after planting, you can decide in this general way about the earliest date it is safe to plant. As to the best "grade" to plant, if this means "quality," get the best possible, which will be none too good; if it means "variety," the writer doubtless refers to early potatoes, and the standard early varieties are Triumph, Early Rose, and Early Ohio, for red potatoes; Cobblers, American Wonder, White Rose, and Green Mountain for medium early white potatoes.

Ranchers of San Diego county report a good year for 1916. It marketed 450,000 boxes of lemons; 150,000 boxes of oranges; 10,000 boxes of grapefruit; 3,000,000 pounds of olives; 50,000 bushels of apples; 17,500,000 pounds of grapes; its hay and forage crop is said to have been worth \$1,000,000 and its vegetables and nuts \$2,000,000 more.

JOHN DEERE IMPLEMENTS



John Deere Plows for Light Tractors



The John Deere Light Tractor Disc Plow works with any standard tractor—the hitch is adjustable.

Three or four discs. Discs have a double setting. Taking care of all conditions where a disc plow can be expected to operate.

Adjustable scrapers keep discs clean and lighten the draft. No choking in trashy ground—frame is high, beams are dropped, which gives good clearance under the frame, and there is plenty of room between the discs for trash to pass through.

So far as quality of John Deere Plows for Light Tractors is concerned, they are built for the farmer who realizes that it is business judgment to buy a high grade tractor plow. Don't forget that a tractor plow is not an everyday purchase.

John Deere Plows for Light Tractors are noted for their high grade work in the field—the real test of tractor plow value.

Before you make your purchase, be sure to see John Deere Plows for Light Tractors. A careful purchase means a permanent saving.



BOOK FREE 156 page reference book—tells all about a complete line of farm implements and how to adjust and use many of them. A practical encyclopedia of farm implements. Worth dollars.

Describes and illustrates Plows for Tractors; Walking and Riding Plows; Disc Plows; Cultivators; Spring Tooth and Spike Tooth Harrows; Disc Harrows; Alfalfa and Beet Tools; Farm and Mountain

Wagons; Manure Spreaders; Inside Cup and Portable Grain Elevators; Corn Shellers; Hay Loaders; Stackers; Rakes; Mowers and Side Delivery Rakes; Hay Presses; Kaffir Headers; Grain Drills; Seeders; Grain and Corn Binders.

This book will be sent free to everyone stating what implements he is interested in and asking for Package No. X-162.

JOHN DEERE, MOLINE, ILL.

John Deere Combined Cotton and Corn Planters



Cotton seed cannot choke up in the hopper—a cotton picker wheel prevents it.

John Deere **OB-LIQUE SELECTION, HORIZONTAL CELL DELIVERY SEED PLATE** for corn—an accurate drop.

Positive gear drive with dirt-proof gear case.

Special shaped shovel with reversible points opens furrow and pulverizes the soil without throwing it up on the face of the shovel. Soil falls behind and covers the seed.

Adjustable press wheel can be furnished. No lever used on this press wheel.

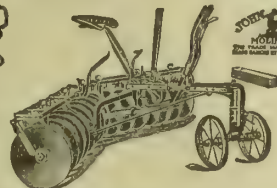
Depth of planting can be regulated with the foot while planter is in motion.

tested out through years of satisfactory field use. A cotton picker wheel extends through the bottom of the hopper. This wheel revolves in one direction and the cotton spider in the other—separating the seed without damaging it. Change in quantity is made by turning a thumb nut on the hopper.

Hoppers are beaded. Seed plates fit perfectly. All the seed in the hopper is planted. Peanut plates or a special hopper can be furnished for planting shelled or unshelled peanuts.



John Deere Model "B" Disc Harrow



The Model "B" pulverizes at even depth its entire width.

Patented spring pressure third lever—inner ends of gangs can be given light or heavy pressure to disc over ridges or cut out dead furrows without burying the harrow.

Independent gangs. All tendency of gangs to crowd to one side is easily overcome by giving them the proper relative angle.

Flexible—only that part of the Model "B" harrow passing over an obstruction is lifted out of the ground.

Rear section can be furnished to make a double action harrow.

Using a disc harrow before plowing pulverizes surface lumps, works trash into the seed bed and prevents the escape of moisture. Then when the furrow slice is turned, the trash decays rapidly and no large air spaces are left between bottom of furrow and the turned furrow slice. Water in the subsoil can make its way into the seed bed and plant roots can penetrate to deeper soils.

Discing after plowing removes the weeds, and makes the seed bed compact, but not hard. The discs break up lumps of soil.



John Deere Syracuse Plows



Syracuse Plows have an enviable field record among farmers in chilled or combination plow territory.

Here is a feature that is appreciated by the man who buys a Syracuse Plow. Extras ordered will be duplicates of the original parts. Bolt holes will be in the right place. Every part will fit. In fact all necessary parts that go into a Syracuse Plow could be ordered as repairs and when received built into a complete plow. Extra parts are exact duplicates—no trouble results.

Remember, Syracuse quality is uniform.

Share and shin piece combined—a fresh, clean cutting edge obtained with each new share.

Index or set-over style of beam—easily shifted to give the plow more or less land.

Equipped with Syracuse Chilled Moldboards—tested for satisfactory scuring qualities, strength and uniformity. Right and left hand styles.



John Deere-Syracuse Sloping Landside Chilled Plow

John Deere Spreader

The Spreader with the Beater on the Axle

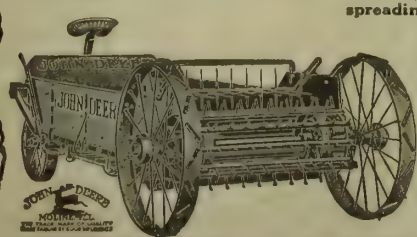


Mounting the beater on the axle simplified the construction, eliminated troublesome parts, and made possible a successful low-down spreader with big drive wheels. There are no shafts to get out of line, no chains to cause trouble, and no clutches to adjust. The only spreader with beater and beater drive mounted on axle.

Low down, with big drive wheels out of the way. Easy to load.

Revolving rake, driven by manure moving toward the beater—no bunching of manure. Ball bearing eccentric apron drive—a new and exclusive driving device. Makes uniform spreading certain.

Wide spread attachment for spreading seven feet wide can be furnished for the John Deere Spreader. No chains nor gears. Quickly removed.



THE JOHN DEERE TRADE MARK



To designate and brand their goods, "Deere & Company," use the "leaping deer" trade mark. It is the best known implement trade mark in the world.

The reason that it is so well known is because of the high quality of the implements themselves.

Prestige in farm implements is obtained solely through the superior merits of the goods.

The permanent prestige of John Deere implements has been maintained by the company's strict adherence to prin-

ciples of manufacture that originally made the goods popular.

The "leaping deer" trade mark is Deere & Company's stamp of approval. It distinguishes John Deere Implements from inferior goods. It means that the implement was made in a John Deere factory, in the John Deere way. It is a guarantee of satisfaction and an insurance policy against disappointment.

Look for the John Deere trade mark when you buy.

JOHN DEERE, MOLINE, ILLINOIS

General Agricultural Review.

FIELD CROPS.

Plans are being laid for the formation of a garden truck growers' marketing association at Riverside.

Dealers at Stockton now estimate that there will be 10,000 acres of onions planted in San Joaquin county this season. About 50 per cent of the crop has already been planted.

C. H. Utting, irrigation engineer of Blythe, says that it now looks probable that the cotton acreage in the Palo Verde Valley of 8,000 acres during 1916 may be trebled the coming season.

According to Frank Shipley, manager of the California Lima Bean Growers' Association, only 32 members out of a total membership of 435 growers have given notice of intention to withdraw.

Frank Hasper and J. M. Tigner of Imperial county had Peruvian alfalfa half knee deep when seen Jan. 24 by our staff writer. This in spite of the "unusually" severe cold weather of the past week.

Encouraging reports come from Butte and Sutter counties as to the rice situation. Buyers have been in the field at the latter place offering \$1.80 to \$1.85. Farmers in the Biggs district are said to be holding for \$1.85 to \$1.90.

The N. H. Locke Co. of San Joaquin county have recently shipped the last of their 1916 crop of potatoes. A report from Stockton says that these are among the best potatoes that have arrived there the past season.

Ray Henderson of Imperial county, who has grown ten acres of asparagus for about eight years, plans to put 20 acres of alfalfa into asparagus this year and later have the whole 80 acres in this one crop. Asparagus here is marketed from Feb. 1 into May.

The acreage of long-staple cotton in Imperial Valley in 1916 was six hundred per cent that of 1915, according to Argyle McLachlan of the Imperial Valley Long Staple Cotton Growers' Association. The short staple acreage increased only 50 per cent.

It is announced from Oxnard that local bodies of the California Lima Bean Growers' Association throughout the country are holding meetings for the discussion of the work during the past year. The total payments of the association to date for beans marketed reaches \$2,000,000.

DECIDUOUS FRUITS.

The valuation of all fruit harvested in Kings county during 1917, as reported by County Horticultural Commissioner Fred K. Howard, was slightly over \$3,000,000.

Canners are said to be making contracts in Sutter county for a large acreage of peaches, prices being \$25 to \$27.50 per ton for choice fruit, some getting a bonus of \$5 a ton for the 1917 crop.

Carl Ley, Horticultural Commissioner of Glenn county, has resigned that office to assume management of the Lowenstein ranch, 160 acres of which will be planted to prunes, almonds, and olives this season.

During 1916 the Colfax Fruit Growers' Association increased its business 100 per cent over that of 1915, according to the figures recently submitted at the annual meeting of that organization.

In order to increase the membership of the California Peach Growers, Inc., in the vicinity of Hanford a Peach Day will be set at an early date, at which time the entire district will be canvassed for new members.

Farmers in the Terra Bella district of Tulare county, who intended planting a large acreage to Calimyrna figs this season, have been compelled to delay planting for a

year because of a shortage of nursery stock according to reports from that section.

Reports from San Luis Obispo county say that when the present season's tree planting is finished there will be approximately 6,000 acres of fruit in the San Miguel, Templeton, Atascadero, and Paso Robles districts, most of which are almonds.

CITRUS, SEMI-TROPICAL.

Orange packers of Porterville have gone on record as favoring the adoption of the fruit standardization law now before the legislature.

Alexander Elliott is planting 100 acres of olives in the vicinity of Oroville. A pumping plant to furnish irrigation water has already been installed.

It is announced from Santa Ana that between 50 and 60 cars of navel oranges are still to be shipped from the nine associations affiliated with the Orange County Fruit Exchange.

A dispatch from Porterville states that from experiments already conducted it is believed that the June drop of oranges in Tulare county is due to a fungous growth which may be controlled by spraying.

G. H. Hecke, State Horticultural Commissioner, announces that the insectary division of his department has received a promising new parasite of the Baker mealy bug from China.

As a result of the recent decision of the Attorney General, frosted fruit will not be allowed to be sold in the future. County horticultural commissioners are allowed to confiscate such fruit, according to the decision.

W. J. Arkell, vice-president and general manager of the George Washington Instantaneous Coffee Co. of Los Angeles proposes to manufacture a soluble lemon and orange powder to be made of the juice of cull oranges and lemons and to be retailed in boxes like cocoa and coffee.

A shipment of 25 cars of oranges was shipped by boat from Los Angeles to Puget Sound recently, which is the largest water shipment made this season. Icing is unnecessary with these shipments and transpor-

tation charges are much lower than they would be by rail.

The State Horticultural Commissioner has recently issued an order pertaining to the importation of orange seed into California. Florida will be the chief source of supply for this seed and intending purchasers should consult the authorities as to the regulations in force.

Report has it that the orange trees in Redlands are infested with scale and that G. S. Hinkley has made arrangements with the county for the fumigation of all the trees in that city.

What are said to be the oldest olive trees in the State are located at the University of Santa Clara. The trees, which are 105 years old, are bearing a heavy crop this year and are said to be in a good, vigorous condition.

The Orange Heights Citrus Association of Corona is considering the formation of a co-operative fumigating association modeled after the Growers' Fumigating Supply Co. of Pomona. A committee made up of C. T. Briggs, J. H. Moore, and L. A. Fink has the matter in charge.

Reports from Riverside say that after a thorough investigation of the qualities of lemon juice, manufactured by a patented process, the board of directors of the Chamber of Commerce has endorsed a plan for the establishment of a plant in that city for its manufacture.

Oxnard wants a branch of the California Fruit Exchange. Last week B. B. Pratt, field man for the Exchange, talked to a meeting along this line, and a committee, of which Chas. Donlon is chairman, was named to look into the matter and report at a later meeting.

AVOCADOS

Only Guatemala Hard-Shell Avocado trees in California, grown from imported buds. These buds were selected, imported and propagated by me after having lived for thirty years in the Tropics. Booklet sent on application.

E. E. KNIGHT
GUATEMALA AVOCADO NURSERY

Yorba Linda,

California



ALMOND TREES

1750 each Texas and Drakes, 4-6 feet.

PRUNES—Burbank's Standard, Sugar, French and Imperial, on all roots.

All other leading fruits in good supply.

SHADE TREES—The finest blocks in the State.

CROWS NURSERIES, Gilroy, Cal.



ALFALFA

250 lbs. of Mococo Superphosphate per acre will increase the yield of alfalfa enormously. "In some cases the alfalfa growth has been tripled," writes Mr. F. F. Lyons, San Joaquin Co. Farm Adviser. Write for particulars.

THE MOUNTAIN COPPER CO. 332 Pine Street, San Francisco.

LIME FOR LAND

HYDRATED LIME OR GROUND LIME ROCK

Free Booklet and Prices on Application.

PACIFIC LIME and PLASTER CO.

807 MONADNOCK BLDG., Manufacturers, SAN FRANCISCO

Made in
2, 3, 4, 5
and 6 Disk

With 24 or
28 inch Disk

SANDERS POSITIVE POWER LIFT

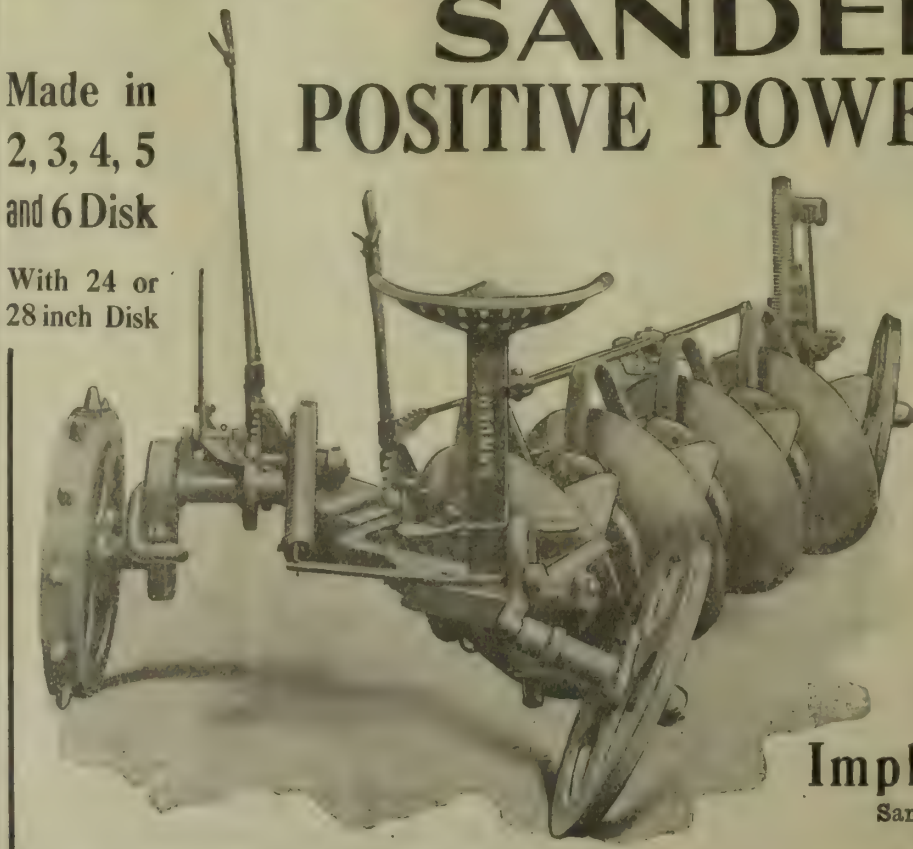
Light-
Tractor
Disk
Plow

Can be set to plow
close to trees with
break levers for or-
chard work.

Write Us.

Pacific
Implement Co.

San Francisco, Cal.
Distributors.



Trees in BLASTED soil bear better

Fruit growers have proved—by planting some trees in blasted beds and others in ordinary ground—that trees planted after the use of explosives root deeper, grow faster and better—that they are thriftier in every way, bear earlier, and yield larger crops.

They have proved also that when the soil of established orchards is properly blasted the trees immediately take on new vigor and bear better fruit thereafter. Orchardists know that this condition is due to the increased moisture-storage capacity induced by blasting and to the consequent release of plant food from the subsoil.

Fruit growers in every Pacific Coast State have used tons of

GIANT FARM POWDERS STUMPING — AGRICULTURAL

CALIFORNIA Fruit Growers say:

"The O'Connor prune orchard near Los Gatos was blasted in 1913. Its largest crop had been 3,900 pounds. After the blasting it yielded 8,000 pounds in a dry year. The prunes were much larger and the trees made a better growth than the orchards on either side." JOHN A. GALPIN, Los Angeles.

"Trees planted in blasted holes, even in fertile soil, do far better and are harder than those planted in dug holes. The powder sent us by the Giant Powder Company is the most satisfactory I have had." JOHN ZURR, Santa Rosa.

"If I were planting trees even in light soil I should prepare all the holes with powder. Trees so planted make extraordinary growth." FRANK FEMMONS, Oakhurst.

"We advocate the use of explosives for loosening up compact soils and hardpan in tree planting, knowing the value of such work." FANCHER CREEK NURSERIES, Fresno.

"Trees should have a deep soil. Even where there are continuous depths of dense strata, and not shallow hardpan underlain by free soils, trees can often be successfully grown by the use of high explosives." PROF. E. J. WICKSON, Los Angeles.

"Where labor is high priced blasting proves the cheapest as well as the best way to prepare ground for tree planting. If properly proportioned the charge will throw out sufficient earth to plant the tree without further digging. It has often been found that the loosening begun by the powder has extended through the mass of land so as to permit the roots to utilize it fully and even to permit of the planting of field crops where formerly they would not succeed." PROF. HILGARD, Berkeley.

"Trees planted in blasted soil do much better." ROBERT DUNN, Ventura.

"There are many acres in this state that can be transformed from non-profitable to very productive land by blasting." JOHN VALLANCE, Oakland.

"Where we have used powder in soils of a refractory nature, the growth of trees has exceeded the growth of the same varieties planted where the holes were not blasted, by not less than 25 per cent." HOWARD & SMITH, Los Angeles.

for planting trees and deep-tilling their orchards. These powders are made in two brands, Eureka Stumping Powder and Giant Stumping Powder, and are prepared especially for farm work. They are more effective and do their

Eureka Stumping Powder pulverizes the soil instead of caking and packing or throwing it high in the air. This is the action that is wanted in stump and soil work, and the action that the so-called "high strength" dynamites will not give. When you use Eureka Stumping Powder the finished job costs you less money.

Giant Stumping Powder, which is also used for subsoil blasting, is the most efficient explosive for many other kinds of farm work, including blasting dead trees or stumps in wet soil.

Make this test of Giant Powders

By using the Giant Farm Powders you can demonstrate their superiority for tree planting and orchard tillage. Fill out the trial order blank in the coupon to the right. We will have our nearest distributor supply you—at lowest market price—with a 25- or 50-pound case of either of the Giant Farm Powders. Test this in comparison with any dynamite. The results will show you why fruit growers in every section insist upon having the Giant Farm Powders for orchard tillage work.

Giant Farm Powders and other Giant blasting supplies are sold by distributors everywhere. Your own dealer has them or can get them for you. If he offers you a substitute, write us and we will see that you are supplied with the genuine. Giant Powder is the trade name of explosives manufactured by The Giant Powder Co., Con. Because Giant Powders are best known everywhere, many have assumed that all high explosives are Giant Powders. Insist upon having the genuine.

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PURE WATER IN IMPERIAL VALLEY DAIRY.

[Written for Pacific Rural Press.]

One of the landmarks of Imperial Valley, and at the same time probably the best cheap way of obtaining pure cool water on a large scale, is the outfit on the ranch of W. L. Hodges.

Water is run from the ditch into a pond as usual, except that it flows through a box-flume which extends several feet out toward the center of the pond. This flume is screened at the ditch end.

A few feet from the edge of another side of the pond are four big corrugated iron tanks about 10 feet deep, resting about 30 feet high on a frame of 8x8's braced with 2x10's.

Under the tanks is a gas engine of about 10 h.p. which runs a line shaft about eight feet from its center. The line shaft runs a two-inch centrifugal pump by a long belt; for the pump is located out over the water. This forces water through a pipe into the nearest tank.

From a point seven feet up on the first tank on the side nearest to the second tank, a pipe connects the two, leaving about seven feet of water permanently in the first tank. From the second to the third is a pipe about 4½ feet above the floor, and the third is connected to the fourth at two feet high. All water is taken from the last tank, after it has thus settled by degrees, not having been entirely clear when pumped from the pond. An ample opening in the bottom of each tank permits easy cleaning at any time. The result is eminently satisfactory, providing clear water for house and dairy use.

The lineshaft also runs other machinery including a feed grinder set on concrete under the tank. Mr. Hodges grinds everything he feeds except to the stock hogs, which also receive much ground feed. On this place last spring were kept over 500 hogs and about 100 dairy cows over two years old. These included many purebred Holsteins and Durocs.

ENGINE IRRIGATES AND CHOPS FEED FOR COWS.

[Written for Pacific Rural Press.]

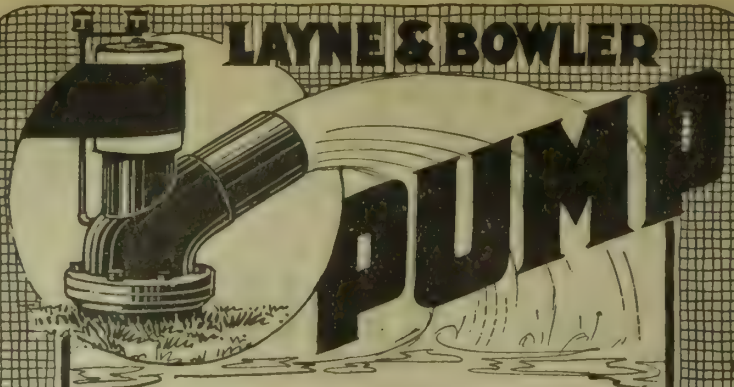
An engine and feed chopper saves hay and corn on S. J. Smith's dairy farm in Stanislaus county. He has them mounted on a frame of 6x6's twelve feet long with an extension for the cutter to rest on to get greater belt length which helps avoid slippage. Four wheels on the frame make it easy to haul around. The barley-alfalfa-foxtail mixture that comprises the first crop of alfalfa, is chopped and blown into the barn, whence it is taken for the cows and dampened before feeding. All the alfalfa is chopped. Mr. Smith fed a few loads recently without chopping, and there was a lot of waste; though with chopped alfalfa the cows eat it all.

Some Egyptian corn was cut and put into the 36-foot silo, but "never again." There was lots of grain on it, but the stalks seemed not much good. Perhaps this was for lack of

plenty of water used while filling. About 40 pounds of gyp silage was fed per day with about 10 pounds cut alfalfa hay. When he quit feeding this and gave plenty of alfalfa alone the milk yield doubled. The corn had been cut when many seeds were thoroughly ripe, and the stalks pretty dry. A lot of it molded. Indian corn and first-cutting alfalfa and barley are to be used hereafter.

The 6 h.p. engine and 10-inch cutter chop two big loads of alfalfa hay per hour, according to Mr. Smith; and six gallons of gasoline runs the outfit for a 10-hour day. Distillate is to be used hereafter because it gives more "kick" and more power per gallon. The engine starts on batteries and is then switched over to a generator run by a fly wheel.

Part of the ranch is too high to irrigate from the ditch. For this the engine will be hitched to a four-inch pump to lift the water out of a sump to be made. This is to irrigate barley and corn.



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Yuba Manufacturing Company, 433 California Street, San Francisco

(Formerly The Yuba Construction Company—change in name only)

SIPHONING WELL WATER.

To the Editor: Will you please tell me if it is possible to siphon water from one well into another? We are using a deep-well plunger pump and draw the water down 70 feet from the surface. The water stands at about 16 feet from surface when the pump is not working. The well from which we wish to run the siphon is 25 feet from the well we are now using and the water level is not affected when pumping from the other well. If it is practical to use this siphon please state the size pipe required to carry 100 gallons per minute.—Subscriber.

[Answered by J. B. Davidson, Prof. of Agr. Engineering, Davis.]

It will be possible to siphon the water from one well to the other, but will be necessary to place the connecting pipe below the surface. It will not be practical to lift the water more than 10 feet over the hill between the two wells. Perhaps a flow could be secured with a higher rise, but such an installation would not be extremely practical. The flow between the wells would depend upon the difference of level in the two wells. If there is a difference of 10 feet in the level of the water in one well over the other, we have determined by consulting a table that you should expect a flow of 130 gallons

per minute in a two-inch pipe. The actual flow would be somewhat less than the flow in a straight pipe. Some provision should be made for exhausting the air at the top of the pipe so as to start the flow.

WET BATTERIES OR MAGNETO?

To the Editor: I am using two stationary gas engines, 3 h.p. and 6 h.p. respectively. Dry batteries have gotten to cost me more than fuel and oil, and if practicable and cheaper would like to install fluid batteries. Would you be so kind as to inform me how to install them, number of jars, size and material to fill them, where to procure them and the probable first cost and subsequent upkeep? Each engine requires 5 dry cells.—Subscriber, Hanford.

[Answered by Prof. J. B. Davidson, Univ. Farm, Davis.]

[Wet batteries can be substituted for dry batteries as a source of electric current for gas engine ignition. The two makes of batteries in more general use in this connection are the Edison and the Gordon. The 300 ampere-hour size is the size generally used. If the spark coil is not changed six cells will be used as the wet battery does not have the voltage that the dry battery has. Four cells can be used with a special coil. The voltage of a wet cell is considerably less than one volt.

We would suggest that you give consideration to the magneto as a source of electric current. Magnetos require no expense for maintenance and the best modern engines are all magneto-equipped.]

ENGINE NEEDED NEW COIL.

To the Editor: Last spring I wrote you in regard to my troubles with a gasoline engine that would slow down and miss and then start up again, taking fuel at each chug steady for a short time and giving very poor service. I had a number of so-called experts look at it but to no avail, so they condemned the engine.

The thought struck me that it might be the spark coil, so I took it to a garage and had it tested. It seemed to be all right but I suggested that the batteries the garage man was using were strong enough to wake the dead and to try four used dry cells. Then we found the trouble; the coil was not strong enough and would go for a while and then stick. I bought a guaranteed one for \$6 and with the exception of having a crooked spark plug my troubles have been easily found and adjusted in a few minutes.

Denair. Harry W. H. Daniels.

FIGURES ON A CEMENT SIDE-WALK.

To the Editor: How much cement would it take to make a walk 45 feet long and four feet wide, and how much sand would I have to mix with it?—Subscriber, Merced.

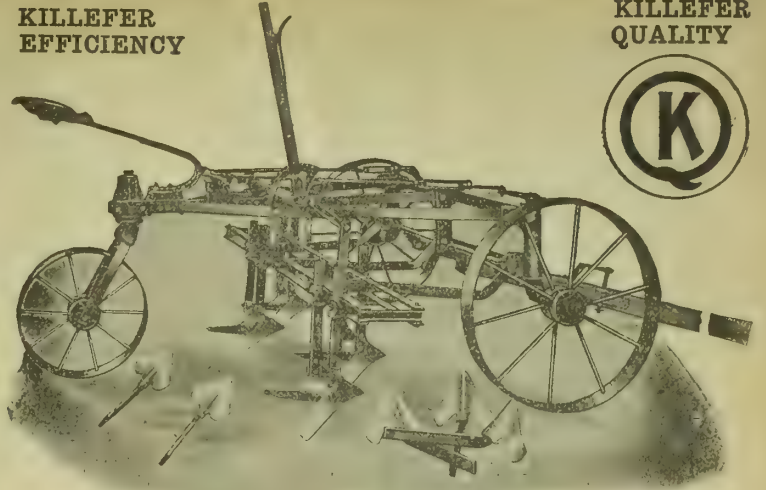
[Answered by J. B. Davidson, Prof. of Agr. Engineering, Davis.]

A cement walk of the above dimensions will contain 60 cubic feet. If a mixture of one part of cement, 2 of sand and 4 of screened gravel or broken stone be used, the following materials will be required: 14 sacks of cement; 1 yard of sand; 2 yards of stone. If a mixture of 1 part of cement, 2½ parts of sand, and 5 parts of screened gravel or broken stone is used, 12 sacks of cement, 1 yard of sand and 2½ yards of stone will be needed.

If a finished coat is applied to the top of a 1:2 mixture about 3 additional sacks are needed.

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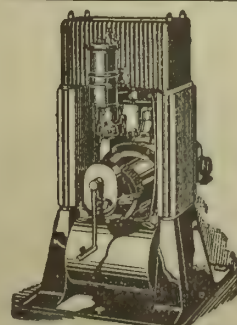
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fit and work are a part of a vast and indispensable industry, he naturally feels more satisfaction and pride in it—if he is doing such work as a progressive, right-minded man ought to be doing it.

Helping Those Who Help Themselves

If a stock-farmer helps himself by a proper recognition of the great work of the country, in which he has a share if he always tries, as he can, to produce better animals and secure better performance from them, he belongs to those whom the government of this country is very properly trying to help. It is the duty and privilege of every meat producer to connect himself with this public undertaking and avail himself of the wisdom which searching investigation is bringing out and careful publication is making available—through a series of reports and bulletins from the U. S. Department of Agriculture at Washington. One we have particularly in mind in this connection is "Report No. 113" on "Methods and Costs of Marketing Live Stock and Meats"—issued Oct. 7, 1916. You can probably get a copy free by writing to your congressman who is now in Washington. If you wish to "pay as you go" send 25c to Superintendent of Documents, Washington, D. C., telling him exactly what you want as per number and title which we have given above. It is a pamphlet of 100 pages, full of tables, diagrams and pictures which show exactly what the printed page is talking about and it will give you a good full week of evening study—just right for these long winter evenings. After you have accomplished that study you will feel that you surely do belong to a great complex industry, if you are the right kind of a stockman, and you will feel like doing something to help yourself and your fellows in the same line and conditions of production.

Co-operation is the Key Route.

Of course you will see that you can do little more than cuss a little if you insist on staying off and flocking by yourself in this matter, and when you begin to feel the weight of that fact write to the Secretary of Agriculture, Washington, D. C., for a copy of Farmer's Bulletin 718 on "Co-operative Live Stock Shipping Associations." It is a free publication: all you have to do is to ask for it on a postal card. We will not try to tell what this free bulletin says because it is so easy to get it and let it talk for itself. If you do not get it you really have no claim to pose as a breeder and seller of livestock. You will hardly be entitled to registry in the jackass rabbit herd book.

But though we will not outline this great source of wisdom and inspiration in co-operative effort in better selling of livestock, we will give a single impressive paragraph from Orange Judd Farmer, written by a member of the association:

The farmers' shipping association of Essex, Ia., was organized a little over two years ago with 24 members, for the purpose of shipping their own stock to market. It has grown to 135 members and in the year ending last November shipped 233 head of cattle in 8½ carloads, 2962 head of hogs in 45½ carloads. The total net receipts for all stock shipped through the association for the year amounted to \$65,590. It is hard to determine just what profits the association made in shipping stock. The

members believe it is safe to say between \$1500 and \$2000. Members only can ship stock through the association. A manager is hired and paid \$5 a day for the actual time he is working for the association. He has entire charge of selling the stock, collecting the money and prorating the receipts. He makes a full and complete report to each shipper. He goes to the stock yards with each load of stock. The members notify the manager the kind, weight and time they will be ready to ship. When a carload is reported the manager orders a car and notifies each man when to bring his stock to the station. The members believe that they market their stock better through this association than by selling to local buyers or shipping individually.

A Route without Terminal Facilities.

That seems very concrete and satisfactory. But in the California case to whom shall the manager of such a co-operative association ship the stuff? Should he get bids from different packers and sell before shipping, or ship to the squarest packer he can find and trust to his fair dealing? Or should we have stock yards in Los Angeles or San Francisco or both? Or shall we wait until Col. Weinstock gets his corrals built at several points? Surely our stock growers' brains need not addle for lack of exercise!

Will the Railways Furnish Them?

Would it not shock you to wake up some morning to find a railway freight agent in your corral waiting to take charge of the selling-end for you? We read last week that Hugo Arnstein, traveling freight and passenger agent of the Oakland, Antioch and Eastern Railway, at a luncheon of the Transportation Club of the Oakland Chamber of Commerce, said that all transcontinental railroads are now contemplating the establishment of selling bureaus for the benefit of farmers and stock raisers. He also said:

Many farmers have difficulty in finding a market for their products. A freight agent, traveling through the territory, can secure a list of all products for sale, and, through a bureau in the market cities of each railroad, can secure purchasers without any cost to the farmer. All the railroads will ask for this service is that the line making the sale be allowed to carry the product to market.

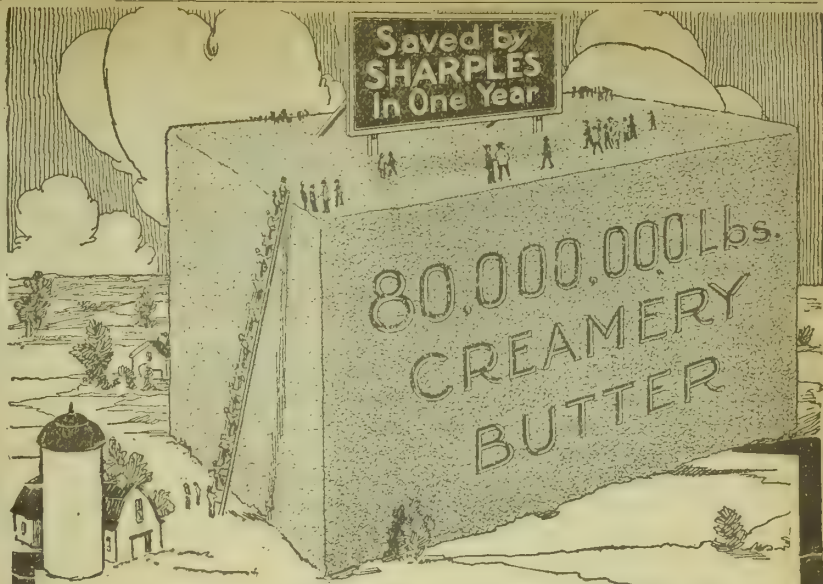
Lo, the poor middleman! He thought he was hard hit by farmers' and consumers' organizations, but here goes a locomotive right over the middle of him!

SKIM MILK FOR HOGS OR POULTRY.

To the Editor: Will you state the value of separator milk for feeding to hogs and chickens? I believe it to be worth a lot now as feed is so high and as where I sell my chickens they want mill feed, and as I do that and have fat young chickens I get two to three cents above the market price.—N. H. B., Lodi.

[Answered by Prof. J. I. Thompson, University Farm, Davis.]

The regular way of figuring the value of skim milk per gallon is to divide the price of grain (for example, barley) by six, and divide that by 8. Supposing the price of barley is \$1.80 per 100 pounds, this divided by 6 would give 30c per 100 pounds as the relative value of the skim milk when barley is \$1.80; the 30 divided by 8 would give 3¾c per gallon for the milk. This figuring is based on the general supposition that about 6 pounds of skim milk equals a pound of ordinary grain.



The height of this print of 80,000,000 lbs. of butter is 90 feet—its length 180 feet. An average loss of 10 lbs. of butter per cow by all separators except Sharples causes this appalling yearly cream loss in the United States alone. If all separators were Sharples this immense pile would be saved annually. For this reason: Sharples is the only separator that skims clean regardless of speed. Look back over your past experience with separators. Many a day you determined to turn at top speed and not lose cream. But unconsciously, little by little, you slackened and lost cream. That separator was not a

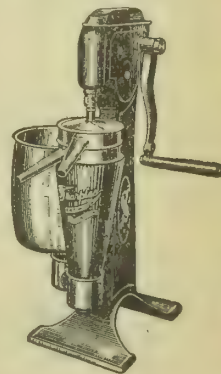
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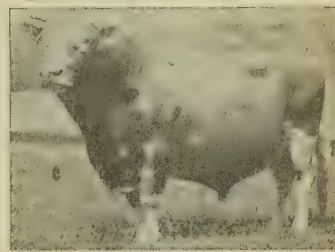
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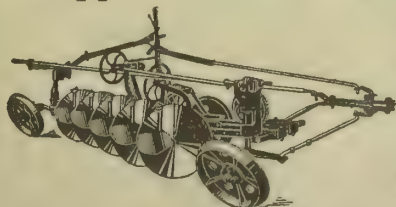
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Cream Pooling Associations Successful.

[By Frank F. Lyons, San Joaquin County Farm Adviser.]

In the spring of 1915 a great many complaints were heard from the dairymen of the South San Joaquin in regard to the treatment which they were receiving from the creameries operating in that section. Most of these complaints came from the Ripon section, so it was decided to send an Assistant Adviser into that section to make a survey of the conditions.

The canvass obtained the number of dairy cows and young stock in the section, the disposal of the dairy produce, the number of acres of alfalfa, corn, and other crops each farmer owned, and the attitude of the dairymen towards an association of some sort.

Three forms of co-operative organizations could be organized in that locality which would more or less remedy the situation. These were: (1) The co-operative creamery, which meant a strong organization, a large outlay of capital, and the employment of high-class men. (2) A co-operative cream depot which meant the renting of a building, the buying of a team or auto-

mobile truck for the collection and the raising of a rather large amount of money. (3) A pooling association, which meant the pooling of all the cream and selling it by sealed bids to the creamery. It required but a loose organization and practically no capital.

Realizing that there were not enough cows in the community to keep a successful co-operative creamery running and knowing the financial condition of most of the dairymen, the co-operative creamery was advised against as an expensive and disastrous undertaking. The co-operative cream depot was also advised against as it required capital and could not bring about any better conditions than a pooling association. It was decided to organize a cream-pooling association.

The first object of the pooling association was to bring about co-operation between the creamery and dairymen. The situation as it existed in the Ripon section tended to everything but co-operation. There were five creamery wagons collecting in that section where there was only enough cream for one. These creameries in their struggle to keep going in that section made co-operation between the creamery and the dairymen almost impossible. The dairymen were continually changing from one creamery to another. The creameries, realizing that their customers were not permanent, were not very particular as to their treatment of the individual dairymen. By pooling all of the cream and selling it by sealed bids to one creamery, all of the other creameries in the section, whose upkeep the dairy-

men had to pay, were done away with. The association cream is worth more to the creamery than that of the individual dairyman, for the creamery man is sure of it for one year without the cost of soliciting new members. A large amount of cream is collected in one territory, cutting down the cost of collection and making it profitable to collect every day, thereby securing a better grade of cream.

As a protection for the dairymen, the creamery was required to put up a bond to cover at least one month's cream checks.

To prevent dissension in the test, and to get a uniform sample of cream the cream collector is required to sample the cream on the dairyman's place and divide the sample, giving one-half to the dairyman and taking the other half to the creamery. The association maintains a tester whose duty it is to test the samples of cream at any time for the dairyman, so as to get a check on the creamery test.

In order to prevent continual and unjust complaints from the individual dairyman a Grievance Committee is provided for, consisting of one dairyman, the manager of the creamery, and one neutral person who is neither a dairyman nor a creameryman. This committee receives all complaints and passes on them, and their decision is final both to dairyman and creameryman.

The pooling association has all of the advantages of a co-operative creamery and it does not require any expenditure of capital by the dairyman. It has one advantage over the co-operative creamery as the dairyman is more assured of having his cream handled under better management than in a co-operative creamery, as the manager of the creamery is usually the owner or one of the owners, in the case of the pooling association, and gives the creamery work his personal supervision. In the case of the co-operative creamery the manager is usually an outside man working for a salary and has no personal interest in the working of the creamery.

The Ripon Farm Center Pooling Association was organized with 66 members and about 900 cows. The board of directors of five members was elected and the cream tester and grievance committee appointed.

Some eleven or twelve creameries bid on the cream, which was finally let to the Modesto Creamery. Practically all the dairymen received during the first year of the organization was a square deal in both test and price of their cream, and also a good lesson in co-operation. The second year there was much more competition in the bidding, as the creameries realized the benefits of dealing with such an association. The best bid was made by the Stanislaus Creamery of Modesto, which put up a bond in the bank of Ripon to cover one month's cream checks and paid the dairymen 4c net over daily San Francisco market quotation, regardless of the price of cream. At the present time the association has a membership of over 80 dairymen, with over 1200 cows.

The success of the Ripon Association has spread throughout the county and State. Two other pooling departments of the Farm Bureau have been organized in the county and others are being agitated. The two new ones are the Escalon department with 76 members and 516 cows, and the Waterloo department with 46 members and 350 cows.

The Madera and Stanislaus County Farm Bureaus have organized pooling departments, and others are being contemplated by other Farm Bureaus of the State.

WHERE TO GET DAIRY LAWS.

To the Editor: Can you publish the new dairy laws? If not, advise me where I can get same. How often is a dairy inspector supposed to visit a community?—A Subscriber, Ripon.

Space does not allow us to print the State dairy laws in full, but you can get a copy of same by applying to F. W. Andreason, Secretary of the State Dairy Bureau, San Francisco, Cal. State dairy inspectors have no definite time to call on dairymen for inspection purposes. They have to use their own judgment in this regard. With the large territories allotted them, however, it is difficult for them to cover their entire district more than once a year, as a rule. If your dairy is bad, don't be surprised to find them around several times a year. If they have to come too often though, you are apt to be out some good money, both in fines and improvements.



HOLSTEIN CATTLE

The undeniable fact that the Holstein-Friesian Association of America is the largest and most prosperous dairy cattle association in America, that its membership is over 7,000 more than the combined memberships of the other dairy cattle associations, and that it increased its membership by 1,260 during the fiscal year ending April 30, 1916, are primarily a fitting testimonial to the superior merits of the pure-bred Holstein-Friesian cow, that yields more milk for a day, for a year, for a lifetime and for profit than any other cow.

Send for FREE Illustrated Descriptive Booklets. The Holstein-Friesian Association of America.

F. L. Houghton, Sec'y
Rox 230, Brattleboro, Vt.

Edgemoor Farm Guernseys



Imp. Itchen May King, 25174.

**Pretty
Productive
Profitable**

A Few Animals of Either Sex For Sale

SANTEE, CALIF.

H. F. SCRIBNER, Supt.

W. H. DUPEE, Pres

L. A. DRIVER STOCK FARM

I am offering several young HOLSTEIN BULLS for sale from A. R. O. dams, sired by Creamcup Cornucopia, whose five nearest dams average 26.56 lbs. of butter in seven days. Correspondence solicited.

LESTER A. DRIVER, Nicolaus, Cal.

COST OF CARING FOR SHEEP ON RANGES.

[Written for Pacific Rural Press]

That there is an erroneous idea as to the cost of feeding sheep under range conditions was brought out by Fred Ellenwood of Red Bluff at the annual meeting of the California Wool Growers' Ass'n held recently at Davis.

During a discussion the statement was made that the wool from a ewe would pay her keep for a year, leaving the money received for the lamb as profit. While this idea has been oftentimes expressed Mr. Ellenwood showed that it is misleading, for unlike many sheep men he keeps a set of books and he finds that for the year 1916, with exceptionally high wool prices and well-bred flocks, his wool clip amounted to \$2.00 a year while his cost of maintenance was \$4.50. In this charge he included management, labor, grazing fees, loss of lambs and ewes on the range, and interest on investment.

With lambs selling for \$6 this would mean an annual profit per ewe of right around \$3.50 under conditions as they are in Northern California, but as Mr. Ellenwood has as well-bred flocks as can be found on the range, his profits are doubtless more than the average sheep grower realizes.

Another grower present, in discussing the loss by poison plants, varmits, etc., on the open range, estimated that there is fully 4 per cent loss, which is much heavier than he experiences when his flocks are on valley lands.

THE NEW DE LAVAL

A Bigger and Better Cream Separator for the Same Money



THE FARMER who buys a De Laval this year will get bigger and better value for his money than ever before.

Not only will he get a better machine, a simpler machine, a machine that will skim even closer than any previous De Laval, but he will get a machine of larger capacity.

And the price has not been increased one cent.

Just think what that means to cow owners in the face of rising prices on almost everything else the farmer has to buy, including other cream separators.

Only the tremendous volume of De Laval sales makes it possible to give the farmer more for his money when others are giving less.

The NEW De Laval is the culmination of nearly forty years of experience and development by the largest and oldest cream separator concern in the world. It represents

The greatest improvement in separator construction in the last thirty years

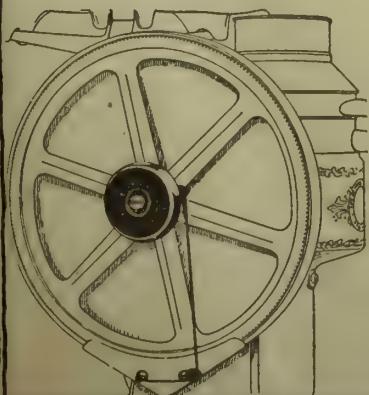
If you are trying to get along without a cream separator, or with a half-worn-out or unreliable machine, why not get a NEW De Laval NOW and stop your cream waste? You don't need to count the cost, because the De Laval will soon pay for itself.

There's a De Laval agent near you who will be glad to explain all the improvements and advantages of the NEW De Laval, and who will set and start a machine for you on your farm and let you try it for yourself.

If you haven't the spare cash right now, that need not stand in the way of your having the use of a NEW De Laval the rest of the winter. We have an arrangement with De Laval agents which makes it possible for any reputable farmer to secure a De Laval on the partial payment plan—a small payment at the time of purchase and the balance in several installments—so that your De Laval will actually pay for itself while you are using it and getting the benefit from it.

Why not see the nearest De Laval agent at once? If you do not know him, write to the nearest office for any desired information.

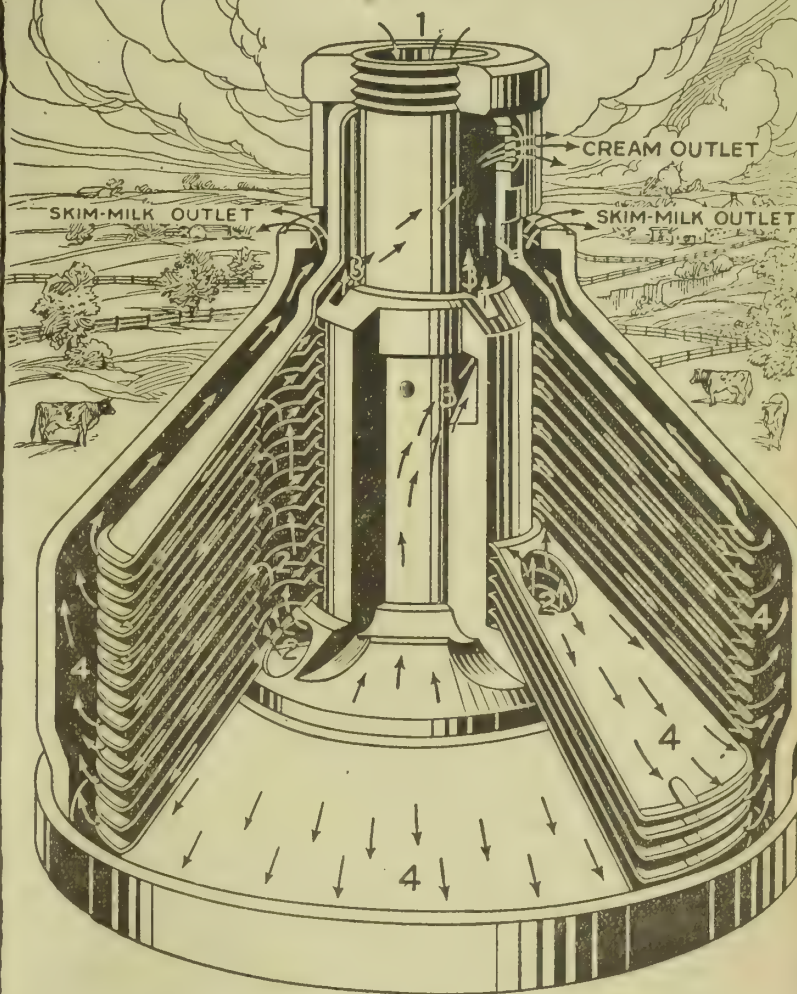
Every NEW DE LAVAL is now equipped with a Bell Speed-Indicator



The "Warning Signal" which insures proper speed and uniform cream

Because nine people out of ten turn the separator handle too slowly and because this always means loss of cream and cream of uneven thickness, every cream separator should be equipped with a reliable speed indicator.

Every NEW De Laval is now so equipped. The De Laval Bell Speed-Indicator is simple. It is accurate. It is reliable. There is nothing to wear out or get out of order. No matter who runs your De Laval, the "warning signal" will tell you when the speed is not right. You hear it and do not need to see it.



THE NEW SELF-CENTERING DE LAVAL BOWL

Some of the points of superiority of the NEW DE LAVAL

The New De Laval bowl design and the new method of delivering the milk into the discs give increased capacity without increasing the weight or size of the bowl or increasing its speed. The incoming whole milk is delivered beyond the cream wall, and this, in conjunction with the improved design of the bowl, makes possible closer skimming than ever before, especially under the more difficult conditions of separation, such as skimming a very heavy cream or separating milk below usual temperature.

The much lower speed of the De Laval than other cream separators (in most cases from one-half to one-third less) insures minimum wear of gears and much longer life of the machine.

The New De Laval concave-bottom, self-centering bowl is so designed and so supported by the detached spindle that it will run true and do perfect work even after long wear, the great importance of which every separator user will appreciate.

There are fewer discs in the New De Laval bowl, and all discs are unnum-

bered and are interchangeable.

By reason of its ample construction and the fewer number of discs, the New De Laval bowl is more easily washed and cleansed.

All New De Laval bowls are automatically oiled, every moving part of the machine being bathed in a constant film of oil. There are no oil holes anywhere on the machine, and the sight feed oil cup on the top of the frame provides for a constant supply of fresh oil.

The gears, pinions and other moving parts of the De Laval are exceedingly simple in arrangement, substantial in dimensions and always interchangeable.

The De Laval tinware is sturdy and heavily tinned, well suited for long and hard wear, and easy to clean.

The low speed of the De Laval bowl, in combination with greater capacity for a given size and weight of bowl than is found in other separators and the automatic De Laval oiling system, make the De Laval the easiest cream separator to turn.

New Catalog will be mailed upon request.

DE LAVAL DAIRY SUPPLY CO.

LARGEST DAIRY SUPPLY HOUSE ON THE PACIFIC COAST.
101 DRUMM STREET, SAN FRANCISCO.

50,000 BRANCHES AND LOCAL AGENCIES THE WORLD OVER.

Live Stock and Dairy Notes.

[Livestock breeders all over the State are invited to send on postal cards, notes regarding their sales, State and County Fair intentions, new stock, etc.]

DAIRYING.

The Modesto Creamery has just made its first shipment of cheese to New York, the car containing 25,000 pounds.

After February 1 all milk sold in the city of Stockton will be graded to comply with the dairy laws that went into effect last fall.

The annual report of the Oakdale Creamery showed that \$120,000 was paid to dairymen in the Oakdale district by that concern during 1916.

Four cow testers are now in the employ of the Imperial Valley Cow Testing Ass'n and another may have to be added to take care of the new herds which are being added.

Among others who are establishing purebred herds of livestock in Tulare county is R. C. Sturgeon who is improving his ranch and already breeding purebred Holsteins and Duroc Jersey hogs.

A field representative of this paper reports that alfalfa hay is very scarce in the vicinity of Fresno, selling for \$14 a ton loose. Dairy cow values have dropped to \$60 to \$70 on that account.

A meeting of Elk Grove and Hood dairymen was held last week to discuss the formation of a milk producers' association in the Sacramento valley. In an address J. M. Henderson made the statement that few if any dairymen in that district are making money.

A bill has been introduced in the legislature by J. E. Manning of Marin county asking for the repeal of the dairy laws which went into effect last October. He takes the ground that the law cannot be enforced accurately because of the uncertainty of the present tuberculin test.

The man who milked Joel Anderson's high grade Guernsey herd in Imperial Valley for three years and kept records of milk and fat, bought 30 of the cows about Thanksgiving, leased 60 acres of the Anderson ranch and is going into business for himself, having selected his cows for their records.

F. H. Stenzel, prominent Holstein breeder of San Leandro, reports the following sales of registered animals: one bull to M. C. Gammon, Lodi; one bull to A. J. Washburn, Winters; one bull to Alameda County Infirmary; one bull to Z. T. Withrom, Fairmead, and a heifer and bull to Ernesto Loida for Mexican shipment.

Dairymen of Tulare county as well as members of the California Creamery Operators' Ass'n propose to fight the reported bill introduced into the legislature which would require the branding of all cows in a herd where reactors to the tuberculin test are found. The dairymen favor the branding of affected animals but are opposed to branding well animals as well.

A. G. McFarland of San Mateo county advises us that his son, E. B. McFarland, is at present in Canada where he has purchased 30 head of registered Ayrshires for California shipment. He states that he has visited all of the prominent Eastern Ayrshire breeders but was unable to secure good stock at any price from them because of the general scarcity of breeding stock.

Malcolm H. Gardner reports that the Holstein record for fat in the junior two-year class for seven days not less than 240 days after freshening has been broken by Jewel Pontiac Segis who produced 473.6 pounds milk containing 17.653 pounds fat. Also that Fancher Farm Maxie has broken the seven-day record for senior four-year cows in producing 597.1 pounds milk containing 37.435 pounds fat.

BEEF CATTLE.

The long cold and dry spell of the past month is said to have worked serious damage to cattlemen in the Livermore Hills. Hay is having to be fed, only fair grades costing \$16 to \$17 a ton.

Two steers weighing approximately 5,000 pounds were recently shipped from Glenn county to San Francisco butchers. They are said to be the largest cattle ever raised in Glenn county.

The Oakland Meat Co. is making weekly shipments of 150 to 200 head of steers from Salinas to their Oakland plant. Most of the steers are being fattened on beet pulp and hay at the Allsal feeding station.

Alexander and Kellogg are erecting another barn on their ranch in Solano county to care for the addition to their herd of Milking Shorthorns. They have recently sold bulls to parties in Fresno and in Madras, Oregon.

Heavy shipments of cattle from Nevada to California points are reported, among those of the past week being 21 cars to Bliss Bros. of Atholene, Merced county, from Elko, and 60 cars from the same place to the Pacific Livestock Co. W. H. Moffat shipped seven cars from Paradise Valley to Galt, Cal., and Miller and Lux shipped 24 cars from Elko to their ranches at Los Banos.

SWINE.

Mrs. Della Foster of Holtville had 528 pigs vaccinated recently to prevent cholera.

The Timken ranches with headquarters at El Centro are using galvanized iron silos.

Wm. Carruthers has recently received what he terms "the best Berkshire sow in America" from the East at his stock farm in Santa Clara county.

The San Francisco Livestock Export Co. have recently purchased four registered Berkshires from York and Son of Modesto for shipment to the South Sea Islands.

Some 750 hogs and pigs were vaccinated for H. A. Terwilliger of Holtville early in January. This took 43 bottles of serum containing 500 c.c. each.

The House of Representatives at Washington has passed a bill designed to regulate the treatment of hog cholera by authorizing the Department of Agriculture to license establishments manufacturing toxins and serums to combat disease in domestic animals.

Dr. C. W. Crawshaw of Hanford advises us that he has recently sold purebred Poland China boars to Sims and Smith of Laton and to a young breeder in southern Illinois. He states that the lot he is consigning to the Kings County Poland China Breeders' sale is the best he has ever offered.

That Holtville hog growers are awake to the value of vaccination as insurance against cholera, is evidenced by the fact that Dr. R. W. Ritter had vaccinated about 3000 head in the month ending Jan. 25. Most of these are pigs weighing around 50 pounds. He has been kept quite busy preventing the disease during all of the past year.

ERRATA IN HOLSTEIN BREEDING.

Mr. DeLancey Lewis of Toyon Farm, Santa Clara county, calls our attention to an error in reporting the sale of Funderne Mutual Fayne Valdessa, the Holstein bull that sold in Washington for \$21,500. Instead of being a son of Spring Farm Pontiac Cornucopia, as stated in these columns, he was a son of King Valdessa. Mr. Lewis further writes

that, as his company has three brothers to this bull, including two three-quarter brothers, and also two sisters to his dam, they are anxious that this mistake be rectified. The pedigrees of these animals are still further strengthened by Segis Fayne Johanna, the 50.68 pounds world's record cow.

JERSEY BREEDERS MEET.

At a meeting of the California Jersey Breeders' Ass'n held at Stockton, Jan. 25, it was decided to allow entries in the Jersey Futurity Stakes to remain open till March 1, although the entry list is already a

large one and augurs a good meet.

A resolution was adopted to approve of a new butterfat test to extend over a period of 300 days, a cow to freshen 290 days from the beginning of the test. Another resolution approved the appointment of a dairymen to the Board of Directors of the State Agricultural Society.

Field Agent J. M. Roberts of the American Jersey Cattle Club presented plans for the organization of breeders' associations in different parts of the State in order to enable Jersey breeders to get together oftener. The next meeting of the association will be held at Davis, April 20.

Classified Advertisements

MISCELLANEOUS.

FREE FOR SIX MONTHS—My special offer to introduce my magazine, "Investing for Profit." It is worth \$10 a copy to any one who has not acquired sufficient money to provide necessities and comforts for self and loved ones. It shows how to become richer quickly and honestly. "Investing for Profit" is the only progressive financial journal and has the largest circulation in America. It shows how \$100 grows to \$2,200; write now and I'll send it six months free. H. L. Barber, 500 28th Jackson Boulevard, Chicago.

FOR SALE—One new Maytag gasoline engine-driven washing machine in original crate never opened includes gasoline engine ready to run. Exactly same as advertised in Saturday Evening Post and Ladies' Home Journal. Cost \$75. Price, \$49, c. o. d. from Berkeley, Cal., with privilege of examination. Reason for selling have given up housekeeping. Apply, Pacific Rural Press, Box 440.

GROCERIES WHOLESALE—Our prices are the Lowest and our quality the Highest. Dollars saved on every order. Freight paid within 100 miles. Send for catalog. Fresno and Company, Mail Order Grocers, 1264 Divisadero street, San Francisco.

EVERY SIZE WROUGHT IRON WATER Pipe and screw casing water pipe, guaranteed as good as new. Prices right. Send for catalogue. We beat no one; everybody gets a Square Deal. Weisbaum Pipe Works 160 Elmwood St. San Francisco.

SECOND HAND WATER PIPE and Screw Casing. New threads and couplings dipped in hot asphaltum. All guaranteed. Send us your inquiry. Shecter Pipe Works, 306-8 Howard St., San Francisco.

AT LAST THE PERFECT SLO—THE Star Round. No hoops. No bolts. No experiments. Any one can erect. Close price. Address D. O. Lively, 215 Hobart Bldg., San Francisco.

PATENTS THAT PROTECT are procured through Pacific Coast Patent Agency. Savings and Loan Building, Stockton, California. Established fifty years.

FOR SALE—One Yuba Ball Tread Tractor, size No. 18, in good condition. For further information inquire of R. C. Minton, Las Cruces, New Mexico.

ASK FOR SNOW'S GRAFTING WAX—In use all over the State. If your grocer does not keep it, send to D. A. Snow, R. D., Box 548, San Jose, Cal.

TO REDUCE THE HIGH COST OF LIVING, send for our Wholesaler to Consumer Catalog. Smith's Cash Store, 108 Clay St. San Francisco.

"HOW TO LIVE ON LESS"—a guide to cheaper living. Wholesale catalogue free. Pacific Co-operative, A236 Commercial St., S. F.

SEEDS, PLANTS AND TREES.

FREE 1917 PLANTING GUIDE and Pure Seed Book! 96 pages handsomely illustrated in many colors. Describes latest, best varieties vegetables, flowers, field crops, fruits, shrubbery, etc. A dictionary on gardening! Flower lover's delight! Field crop guide! An orchardist's manual! Berry-grower's book! A postal gets it. Don't buy seeds until you read it. Galloway Bros. & Co., Pure Seed Specialists, Waterloo, Iowa.

EVERYTHING DELIVERED FREE—Saint Regis Everbearing Red Raspberries, first year. One Dollar Dozen; Six Dollars Hundred. American Beauty Everbearing Strawberries, Hotel Del Monte serve April to December. Fifty Plants One Dollar; Five Hundred, Four Dollars. Gladioli Bulbs, all colors, Sixty Cents Dozen, Four Dollars Hundred. Brown's Berry Ranch, Capitola, Cal.

ORDER NOW—Genuine Giant Crimson Winter Rhubarb. The choicest and earliest of all varieties, producing bountiful crops, when other varieties are out of market. Can grow between orchard rows with big returns. 30c each; \$1.50 per ten; \$10 per hundred. Mail orders booked now and shipped when desired. A. P. Baker, 1110 The Alameda, Berkeley, Cal.

TO OUR FRIENDS AND CUSTOMERS—We wish to announce that our trees for this season have been sold for which we thank you. However, we will be in the business next season with more first-class trees. Yours sincerely, Geyer Bros., Walnut Nursery, 214 South Alameda St. Alhambra, Cal.

5000 MISSION OLIVE—4 to 5, clean, well rooted and stocky, 20c each, \$15 per 100. Fine stock Walnuts, Apricots on Myrobalan, 4 to 6, clean, stocky, \$12 per 100. All leading varieties high grade nursery stock. A. E. Marshall's Nurseries, 5th and Broadway, Santa Ana, Cal.

CALIFORNIA GREATEST PRUNE—Stuart Prune; 27 dried prunes to the pound; bears heavy; strong growth; very sweet like the French prune, only larger. 2000 trees in stock for this year. Also 60,000 almond trees; all kinds of varieties. Write for prices. Ripon Nursery Co., Ripon, Cal.

FRANQUETTE WALNUT TREES—Grafted on Black Roots. Vigorous stock at lowest prices. Oeden Bolton, Jr., Route 6, Santa Rosa, Cal.

FOR SALE—Walnut Trees. Magnolia Nurseries, Whittier, Cal.

SPECIALLY SELECTED ARIZONA ALFALFA Seed—the best there is—at wholesale prices. Shipping warehouses at Modesto, Fresno, and in Arizona. You save at least \$2.00 per hundred by buying direct. Send your address for sample and price. Bomberger Seed Co., Modesto, Cal.

CITRUS TREES—all leading varieties. Large line. Lisbon and Villa Franca, Lemon and Washington Navel Orange Trees. First-class stock and clean. Special prices to dealers or to growers in carload lots. Randall Brothers' Nurseries, Whittier, Cal.

STRICTLY FANCY SEEDS—Alfalfa, Scarflet Sweet Clover, Red Clover, Timothy, Rye Grass, etc. Free Bulletin—"Sweet Clover in the Northwest." Write for samples and prices. Ralph Waldo Elden, Central Point, Oregon.

GIANT WINTER RHUBARB PLANTS—Big profits. From 1/2 acre first season after planting I sold \$75 boxes rhubarb, receiving \$673.70. Grand Prize San Diego Exposition. Big discount on plants for prompt orders. Booklet Free. W. A. Lee, Covina, Cal.

FELIX GILLET STRAIN Walnuts grafted on California Black and Vrooman Franquette. Bears on Japan—Lusty, mountain-grown, with heavy fibrous roots. Write now. Good trees are scarce. Barren Hill Nursery, Nevada City, Cal.

OLIVES ARE OUR SPECIALTY—We offer for sale fine thrifty trees of the best strains of Mission and Manzanillo. Earliest to ripen; earliest to bear. If that is what you want, we have it. H. Dietrich & Son, Exeter, Cal.

WALNUT GRAFTING WOOD—Genuine Franquette. Same strain as Vrooman orchard was planted from. Willson's Wonder, grown by originator, F. C. Willson, Encinal Nurseries, Sunnyvale, Santa Clara Co., Cal.

SWEET CLOVER—The best leucum known for introducing nitrates into soil. A large producing, non-bloating forage and hay crop. Stands alkaline conditions well. Seed 15c per lb. V. M. Shuey, Manzanar, Cal.

ALFALFA SEED—New crop of choice home-grown seed; re-cleaned and guaranteed. Send for sample and price delivered to your nearest railway station. A. F. Scheidecker, Zamora, Yolo Co., Cal.

WALNUT TREES—Franquette, Mayette and Mammoth on Black Root; also Grafting Wood and Black Seedling Trees. Lowest prices. Mammoth Walnut Nurseries, Watsonville, Cal.

BERRY PLANTS—Phenomenal Berry, Cuthbert raspberry, Loganberry, Himalaya Giant, Lawton and Mammoth Blackberry. Now ready. Prices lowest. M. J. Moniz, Sebastopol, Cal.

MISSION OLIVE TREES—Raised from my own bearing trees. This is the only, sure way to get what one wants. W. A. Hayne, Box 461, Marysville.

FOR SALE—Eltersburg Strawberry plants, \$2.25 per 1000. Guaranteed to reach you in good shape. Barker Bros., Hemet, Cal.

FOR SALE—Gold Dollar and New Oregon Strawberry plants, \$3 per M. D. B. Bannister, P. O. Box 185, Oakdale, Cal.

QUALITY TREES—Seedlings 5c. Prunes, 10c. Walnuts, 30c. Cash Nurseries & Seed Store, Sebastopol, Cal.

RHUBARB ROOTS—Wagner's Giant Crimson. \$2 per hundred; 5c each. Currier Bulb Co., Seabright, Cal.

ALFALFA SEED—Why not sow the best? Write for prices to P. S. Vawter, Arbuckle, Cal.

WANTED.

WANTED—Young men and women to attend the Western Normal Courses—Normal and Academic. The Normal Course gives an adequate preparation for teaching at a great saving in time and money. Academic course gives practical finish to education. Write for Bulletin "A." Western Normal, 524 E. Market St. Stockton, Cal.

WANTED—Single man understanding the care of dairy cows to milk three or four cows, operate separator and care for a few chickens on a private estate. Must be thoroughly competent and generally handy. State nationality. References required. Apply Box 34 Menlo Park Cal.

WANTED—Machine and equipment for cannery—new or second-hand. R. G. Root, Box 3 Sacramento Cal.

COUNTRY LANDS.

FOR SALE—648-acre stock ranch in Napa county. Price, \$17,000 net. All modern improvements. Living creek, 175 acres hay, grain and alfalfa land. Free range adjoining. 175 head of cattle can be purchased if desired. Liberal terms. Owner, Box 363, Napa, Cal.

WE ARE AGENTS for the best land in South San Joaquin Irrigation District on the easiest of terms. Address Ripon Nursery Co., Ripon, Cal.

WANTED TO HEAR from owner of good ranch for sale. Send cash price and description. D. F. Bush, Mendocino, Mendocino, Cal.

HUMBOLDT STOCK RANCHES—CATTLE correspondence solicited. C. E. Robertson, 105 Montgomery St. San Francisco.

FREE NEW BLUE BOOKLET—State, Government and Indian Lands. Bargains overlooked. Joseph Clark, Sacramento.

SHORTHORN BREEDERS MEET.

A meeting of the board of directors of the California Shorthorn Breeders' Ass'n was held at San Francisco Jan. 30 to discuss plans for the promotion of their breed. Action was taken favoring the holding of a livestock show in San Francisco in the latter part of 1917 and a committee appointed to investigate ways and means of securing capital for the purchasing of permanent grounds and exposition buildings. It was decided to postpone the holding of a purebred Shorthorn auction sale for the present because of the scarcity of sale stock among members.

TO BUILD STOCKYARDS.

Announcement is made at Sacramento that a union stockyards company has filed articles of incorporation for the establishment of stockyards at West Sacramento. This is the corporation alluded to in these columns by State Market Director Weinstock some time ago. The directors and stockholders are T. S. Glide and J. H. Glide of Davis, Chas. E. Virden of Sacramento, Harry and H. Sam Thorp of Sacramento. It is stated that D. O. Lively will probably be elected manager of the new company.

CARRUTHERS' SHORTHORN SALE

Shorthorn auction sales are to be revived in the State early in May by the holding of the first annual sale of Carruthers' Farms at Mayfield. Mr. Carruthers has been making preparations for the holding of this sale for several months, and promises an offering of foundation animals of rare Scotch breeding that should prove attractive to those in the market for choice Shorthorn cattle. Being an expert judge of the red and roans in both type and pedigree, Mr. Carruthers has been in a position to select his present herd with discretion and prospective buyers should be benefited as a result.

LIVESTOCK DIRECTORY.

Rates in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

SWINE.**Poland Chinas.**

SMITH'S POLAND-CHINAS—Sows and gilts bred to Joker, First Prize Boar at the Wisconsin State Fair, 1915. These sows and gilts, sired by Iowa Wonder, who is a son of A. Wonder, the most celebrated Poland-China boar, living or dead. Litters from this mating are the best I have ever seen anywhere. Prices low quality considered. Will sell one or a carload. As a special inducement each purchaser will be given a year's subscription to the American Swineherd, the best swine paper published, and a copy of the Handbook on the Sow; also a copy of the Pig Feeders' Manual. Geo. A. Smith, Corcoran, Cal.

SEND FOR FREE CATALOG—Finest ever issued. Tells of the famous Whitten Ranch money-making strain of Big Type Poland-Chinas. Make greatest weight in shortest time at lowest cost topping market at 225 lbs. in 6 months. 600 head both sexes, all ages, reasonable prices. Satisfaction guaranteed. Ranch in Tulare County, but address owner, R. H. Whitten, 610-A Security Building, Los Angeles.

GRAND CHAMPION SUPERBA POLANDS—A few choice spring Superba boars ready for service. Sows bred to Superba for fall litters. Prices reasonably low. Rough's Greenfields, Arlington Station, Riverside, Cal.

REGISTERED POLAND-CHINA BOARS of serviceable age. A Wonder and Chief Picture breeding. Every animal guaranteed. Price \$25. Bar N. Ranch, E. A. Noyes & Son, Props., Sutter, Cal.

POLAND-CHINAS—Bred gilts, \$15; young boars, \$10 and \$15; bred sows, \$25. Weanlings, either sex, \$6. Registered and crated, purchaser to return crates. E. A. Hall, Watsonville, Cal.

REGISTERED POLAND CHINAS—Young boars ready for service. Weanling pigs, both sexes. Prices attractive for quick sales. J. H. Cook Paradise, Cal.

REGISTERED POLAND-CHINAS—Prolific, pabulous profitable porkers. Choice boars now ready for service, \$25 each. Weanlings, \$15. Dr. J. A. Crawshaw, Hanford, Cal.

LAKEVIEW STOCK FARM POLAND CHINAS are money-makers. Satisfaction or money refunded. Geo. V. Beckman & Sons, Lodi, Cal.

POLAND CHINAS—Big type. Shoats, either sex, or in unrelated pairs. O. L. Linn, Linview, Route A, Modesto, Cal.

POLAND-CHINAS—Big type combined with quality. Choice bred sows, gilts, boars. W. D. Trewhitt Box 82A Hanford, Cal.

REGISTERED POLAND CHINA SWINE—Prize-winners. Finest stock in the State. \$20 up. M. Russell Hanford, Cal.

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BIG-TYPE POLAND CHINAS—Stock from the best herds of the Middle West. N. Hauck, Alton, Humboldt Co., Cal.

REGISTERED POLAND-CHINAS and Duroc Jerseys. Cholera immune for life. T. H. Beckman, Lodi, Cal.

POLAND-CHINAS—Large type. The Browning Stock Farm. W. H. Browning, Woodland, Cal.

DEACON RANCH POLAND CHINAS—Prize winners. Young stock reasonable. Box 27A, Davis, Cal.

KNOB HILL STOCK FARM—Registered Poland-China Swine. A. M. Henry, Farmington, Cal.

AMAWAGE FARMS—Poland-China hogs and Holstein cattle. G. H. Loughery, Visalia, Cal.

POLAND-CHINAS—Prize-winners. Money-makers. W. Bernstein, Hanford, Cal.

REAOAKS RANCH herd of registered Poland Chinas. W. J. Hanna, Gilroy.

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GRAPEWILD FARM BERKSHIRES—World's Fair Grand Champion Grand Leader 2nd heads our herd, not only himself a champion, but the sire of Champions. At the 1916 California State Fair his daughters won first in all of the senior sow classes, including the Grand Champion Sow. At the 1916 Oregon State Fair a Grand Leader sow was Junior Champion. We are offering a number of choice boars of exceptional breeding and are also looking orders for Fall pigs. A. B. Humphrey, Escalon, San Joaquin Co. Cal.

50 BRED SOWS AND GILTS—50 of true Berkshire type and quality, bred to Grand Champion boars, are included in our private sale list now ready for mailing. Write for it today. Silver Birch Farms, Box R. P., Newport, Wash.

REGISTERED BERKSHIRES—Progeny of Improver B. Young stock now ready for sale. Start your herd with bred and strain of established reputation for California conditions. Geo. G. Meckfessel, Berlin, Cal.

BERKSHIRES—I have one of the best herds on the Pacific Coast, including Grand Champion Sow, Reserve Grand Champion Boar under one year, Third Aged Boar, etc. Frank A. Brush, Santa Rosa, Cal.

FOR SALE—Registered Berkshire Boar Suisun Rival Duke 2nd, 203376. Farrowed May 18, 1914. Apply Geo. McNally, Middletown, Lake County, or 278 Russ Building, San Francisco.

IMMUNIZED NORMANDY BERKSHIRES.—Good type. Breeding stock, any age, for sale at all times. Cast iron guarantee. Arlington Smith, Visalia, Cal.

BERKSHIRES—Bred sows and weanling pigs. Write for prices and pedigrees before buying. Butte City Ranch, Box P, Butte City, Glenn Co., Cal.

REGISTERED BERKSHIRES—Special offering. Three service boars at prices to move them quick. Write us. Imperial Stock Farm, Morgan Hill, Cal.

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ROSE CREST BERKSHIRES—Rivals Champion Best blood. Open and bred gilts. Service boars. F. L. Hall, Ferris, Cal.

CARRUTHERS FARMS BERKSHIRES—Cholera immune. Second annual sale August 2, 1917. Mayfield, Cal.

30 REGISTERED BERKSHIRES—Boars and gilts for sale. J. H. Benedict, Lemoore, Kings County.

HOPLAND STOCK FARM—Registered Berkshires. Prices on application. Hopland, Cal.

REGISTERED BERKSHIRES—Young stock for sale. F. W. White, Elk Grove, Cal.

Duroc-Jerseys.

DUROC JERSEYS—My hogs won highest honors at State Fair, taking first prize herd, first prize sow, second prize boar. Were the largest of their age exhibited. Stock all ages for sale. Prices reasonable. Breeding and satisfaction guaranteed. Haden Smith, Route 1, Box 84D, Woodland.

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CROLEY'S BALANCED HOG FEED—the cheapest feed to fatten hogs. Write Geo. H. Croley Co., Inc., Live Stock Supplies, 631-637 Brannan St., San Francisco.

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RANCHO RUBIUS DUROCS—All sold except a few July and September gilts. Extra good. Write for prices. Elmer Lamb, Ceres, Cal.

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WINTON DUROC-JERSEY FARM, Winton, Cal.—High-class pure-bred hogs both sexes any age.

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REGISTERED DUROC-JERSEY SWINE—Frederick M. Johnson, Napa, Cal.

DUROCS—Big type, both sexes for sale. Ed. E. Johnson, Turlock, Cal.

REGISTERED DUROC-JERSEYS—S. S. Southworth, Napa.

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LARGE YORKSHIRES—Choice spring boars, gilts, and weaned pigs from Champion sow P. P. I. E., or from breeding of champion boar and sow, Sacramento, 1916. If you see them grow you will like them. Riverina Farms, Paradise Road, Modesto, Cal.

CHOICE REGISTERED BERKSHIRES—Fine sows bred to excellent boars for spring farrow, \$50 and \$60 each. Splendid August and September boars and gilts, \$20 and \$25 each. W. H. Waugh, Riverside, Cal.

LARGE YORKSHIRES—The ideal hog for the progressive farmer. Young stock for sale. A. L. Tubbs Co., Calistoga, Cal.

Chester Whites.

BILLIKEN HERD OF CHESTERS—The big prize-winners at the 1916 California State Fair. A real utility breed that makes money for its owners. A few young service boars left; twenty young, open gilts that will be bred as may be desired by buyer. Write for the booklet Chester Whites. C. B. Cunningham, M. L. S. Cal.

REGISTERED IMPROVED CHESTER Whites—Grizzly Bear Ranch, East Auburn, Cal.

Essex.

LITTLE BLACK ESSEX—Service boars and weanlings. Only herd in the State. Limited supply. Yolo Essex Herd, L. W. Millsap, Yolo, Cal.

Hampshires.

BELLA VISTA HAMPSHIRE SWINE—from prize-winning stock. J. W. Henderson First National Berkeley.

DAIRY CATTLE.**Holsteins.**

FOR SALE—From 1 to 100 extra fine, straight, well-marked, light colored, highly bred, registered Holstein heifers from 6 to 18 months old. They are rich in the blood of King of the Pontiacs, Pontiac Korndyke, Hengerveld De Kol, Rag Apple Korndyke 8th, King Segis and other most celebrated sires of the breed. Prices very reasonable. Write Geo. A. Smith, Corcoran, California.

25 HIGH-GRADE HOLSTEIN HEIFERS, sired by Creamcup Sir Walhalla Pontiac 96169, coming with second calf by a high-class bull. All tuberculin tested. Also 35 yearling heifers, sired by same bull. Terms and prices, apply to W. H. Nichols, 2552 Haste St., Berkeley, Cal.

FOR SALE—A bull from a 28½-lb. dam who has three A. R. O.'s up to 27 lbs. Is one year old; fine individual; ¾ white. Sire a good son of King of the Pontiacs. Will sell at a bargain. Also other bulls from \$75 up from A. R. O. cows. Ernest Otto McClure, Rt. 6, Box 8B, Santa Ana, Cal.

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THE MCCLURE RIVER LUMBER CO., Modesto, Cal.—High-class thoroughbred Holstein bulls for sale. Write for prices and pedigrees.

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CREAMCUP HERD—Registered Holsteins Pontiac bull calves. M. Holdridge, Modesto, Cal.

SUNNYSIDE HERD—Registered Holstein cattle. R. F. Guerin, R. 3, Box 58, Visalia, Cal.

REGISTERED HOLSTEIN CATTLE—E. E. Freeman, Route B, Modesto, Cal.

REGISTERED HOLSTEIN BULLS for sale. Sunnybrook Ranch, Willits, Cal.

REGISTERED HOLSTEIN BULLS for sale. C. L. Morse, Route B, Modesto, Cal.

BREEDERS OF REGISTERED HOLSTEIN CATTLE—McAlister & Sons, Chino, Cal.

REGISTERED HOLSTEIN BULLS, \$50 to \$150. Glorieta Stock Farm, Woodland, Cal.

REGISTERED HOLSTEIN BULLS from A. R. O. dams. B. F. Anderson, Modesto, Cal.

CHOICE HOLSTEIN bulls for sale. No females. Millbrae Dairy, Millbrae, Cal.

REGISTERED HOLSTEIN-FRIESIAN CATTLE—J. M. Campbell, Escalon, Cal.

BREEDER OF HOLSTEIN-FRIESIAN CATTLE—Dr. Ben Stetson, Napa, Cal.

A. R. O. HERD OF HOLSTEINS—Alex. Whaley, Tulare, Calif.

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JERSEY BULLS AND BULL CALVES—Sons and grandsons of 2 and 3-lbs cows. None better. Cheap for quality. N. H. Locke, Lockeford, Cal.

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YOUNG REGISTERED JERSEY BULL Calves at reasonable prices. O. J. Ames, Oakdale.

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D. O. LIVELY, 215 Hobart Bldg., San Francisco, offers for sale a registered Hereford bull twenty-two months old and a registered Shorthorn bull coming three years old. Correspondence solicited.

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REGISTERED AND UNREGISTERED—Shorthorn bulls for sale. Paicines Ranch Co., 320 Sharon Bldg., San Francisco.

INNISFAIR DAIRY SHORTHORNS—Registered young bulls for sale. Alexander & Kellogg, Suisun, Cal.

HOPLAND STOCK FARM—Registered Shorthorns. Prices on application. Hopland, Cal.

REGISTERED HEREFORDS—H. H. Gable, Diamond G Ranch, Esparto, Cal.

SIMON NEWMAN CO., Breeders of Registered Herefords. Newman, Cal.

GEORGE WATKINSON—Breeder registered Herefords. Bishop, Cal.

SHORTHORNS—Carruthers Farms, Mayfield, Cal.

SHORTHORNS—Fair Oaks Ranch, Willits, Cal.

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F. A. MECHAM ESTATE, Petaluma, Cal.—Breeders and Importers of Shropshire, Rambouillet and American Merinos, both sexes. Also Red Polled cattle. Tale electric car at Petaluma or Santa Rosa for Live Oak Ranch.

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KAUPKE BROS., WOODLAND, CAL.—Breeders and Importers of Hampshire sheep.

DORSETS AND ROMNEYS—Dorset ram lambs for sale. John E. Marble, Los Angeles.

BISHOP BROS., SAN RAMON, CAL.—Breeders and Importers Shropshire.

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MISCELLANEOUS.

FOR SALE—Stnd Jack at very reasonable price, or will exchange for Holstein cows. J. Lansing Lane, Box 512, Hollister, Cal.

REGISTERED SHIRES—Black Hawk Stock Farm. Importers and Breeders, Easton & Ward, Proprietors, Burlingame, Cal.

SAN FRANCISCO LIVESTOCK EXPORT Co., Eugene R. Croley, Manager, solicits foreign orders for purebred registered and merit breeding animals and fowls. California has great diversity of climatic and other conditions that enable us to select animals that have been raised under conditions similar to those of the location for which they are intended. We should be informed regarding these conditions and be allowed ample time to make selections. Nearly all disappointments in buying afar are the result of insufficient information as to conditions or to lack of time for proper selection. Our plan and terms for "raising animals to order" to fit into peculiar foreign conditions is worth investigating. References: Dun or Bradstreets, or San Francisco banks. Office, 319 Underwood Building, 525 Market St. San Francisco.

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CROLEY'S BALANCED DAIRY FEED—the cheap milk producer; and Croley's Calf Meal, the best California calf raiser. Geo. H. Croley Co., Inc., 631-637 Brannan St., San Francisco.

Calculations on Material for Silo.

To the Editor: How much lumber is required to build an 80- to 100-ton resaw silo? What size studding and how far apart should they be placed? What kind and grade of lumber should be used for the lining? Can the lumber be bought ready to nail on or will the boards need to be sawed after buying at some planing mill? What width boards should be used? What should the material cost?—G. W., Willows.

[Answered by Walter F. Mitchell, Prop. Packwood Farm, Visalia.]

This is a list of material I used in my silos: 12 pieces 1x8x16 feet, redwood; 45 pieces 2x3x32 feet, Oregon pine; 2 pieces 2x3x12 feet, Oregon pine; 2 pieces 2x2x32 feet, Oregon pine; 2900 feet, 6-inch redwood resaw; 18 squares of one-ply roofing paper.

Building Cement Foundation.—To lay out the foundation first, drive a pin in the center where the silo is to be built. Then take a 1x4 and bore a hole in the end, 7½ feet from the out end. This will give the circle for the foundation. Take some of the resaw and stake it down around the circle, then pour the cement five inches thick. When this is done bore another hole 7 feet 2 inches from the other hole in the 1x4 and put a pencil in it. This will give the proper circle for setting the studding.

Now take the 1x8 pieces of redwood and cut them three feet long. Then lay them around the edge of the concrete foundation, doubling them and breaking joints. When this is done take the 1x4, with pencil in the end, and scribe around on them. This will give the line to set the studs to. Take the remainder of the 1x8s and cut and lay around the foundation in the same way, also scribe around them. Cut to this line with a band saw. These are the top plates. Now we are ready to make the ladder of the door or window frames.

Window Frames.—Take four of the 2x3x32 studding and nail together in pairs, then take the 2x2x32 and nail one on each pair of studding; this makes the window stops. Next take the 2x3x12 and cut pieces 20 inches long and set them in be-

tween the stops; this makes the width of the window. Next take the rods and put them through just under the cross pieces; cut fillers and nail inside of the cross pieces, top and bottom of the window. These keep the circle for they are all to be cut on the same circle.

Now the Ladder is Ready to Raise.—This can be best done by a team, steadying it with guy wires, but before raising the guy lines have a man on top of the ladder nail on the circles, brazing them well with number 12 wire as he goes around.

Nailing Resaw.—When the studdings are raised, plumb them and you are ready for the resaw. Run the first layer six feet up the side and then put on the Ruberoid paper, laying it the same way of the resaw and then put on the second layer of resaw. Now put in a staging, using three pieces of 2x6 Oregon pine crossways of the silo. Six- and eight-penny box nails should be used for nailing onto the resaw. When this is done put on four band iron hoops, made in halves and put together with a screw at each end. In nailing on the resaw board up the first four feet before leaving a window, then leave every other opening boarded up thus making a much stronger silo.

Windows.—These can be made of 1x12s covered with building paper so that the paper extends out over the resaw. They can be made when filling is being done.

This makes a 110-ton silo. If a smaller one is needed both the diameter and height can be cut down. I set the studding on 12-inch centers and used resaw that had been sized on all sides. I cannot say exactly now, but any lumber dealer can give you figures on that. The paper and hoops will cost about \$15.

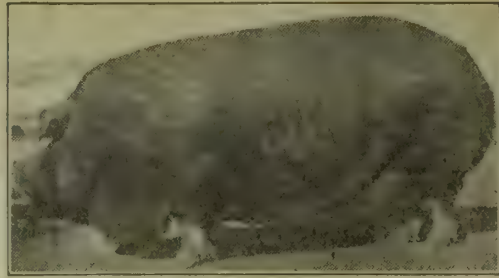
A CRITICISM OF HOG VALUES

To the Editor: I have just read your article on "Razor" and "Chunk," and think you did not go far enough in your deductions. According to your figures the cost of dressed meat in "Razor" was \$.13 a pound and in "Chunk" \$.12, while the selling value of "Razor" was one cent a pound less than "Chunk." This would indicate that, to be fair to the producers, they should have been paid for "Razor" on foot one cent less and for "Chunk" one cent more—i. e., 7½ cents for "Razor" and 10½ cents for "Chunk"—in order to pay the producer the proportionate value of each hog. If there was some such difference as that in the price paid for different classes of hogs I believe it would not be many months before the "Chunk" class would be greatly increased and the "Razor" class decreased.—H. N. Colver, Wasco, Cal.

You are perfectly justified in your criticism, and have struck what we believe to be a constructive note when you suggest a wider spread in hog values. As we understand it there is a committee of growers and packers now at work to overcome this very objection.—Eds.

After a sheep is four years old, one cannot tell by the teeth about the age. One who is purchasing sheep should see to it that it has not lost any teeth, or that the teeth have not become too badly worn to allow good chewing of food.

BASSETT'S POLAND CHINAS



GRAND CHAMPION SOW.
P. P. I. E. 1915; Sacramento, 1916.

For many years at widely separated shows, under many different judges of varying type ideals, my Poland Chinas have been consistent prize-winners. My herd is large and I cull closely. The animals sent out as breeders are the very tops of a large number. I KNOW that my kind of Poland China is a profitable farmer's hog, for I send carloads of them to the packer every year—uniform in size, high in quality, quickly and economically matured and finished.

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Anticipating the present hog situation, we are breeding 50 of our best sows for the Spring trade, and at the prices we are asking for them, they are bargains. We have a little catalog telling about the sows and the boars they are bred to that is free for the asking. Write for it.

We also breed SHORTHORN Cattle, SHROPSHIRE Sheep and PONIES.

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BOX P, BUTTE CITY, CAL. GLENN CO., CAL.



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Aged Ram, First and Second. Yearling Ram, First. Ram Lamb, First, Second, and Third. Champion Ram. Yearling Ewe, Second. Ewe Lamb, Second and Third. Get of Sire, First. Pen of three Lambs, bred by Exhibitor, First and Fourth. Pen of four Rams, bred by Exhibitor, First and Fourth. Flock, any age, Second. Flock, any age, bred by Exhibitor, Second. Flock, one year old, First. Flock, one year old, bred by Exhibitor, First. Flock under one year, First. Flock under one year, bred by Exhibitor, First. Produce of Ewe, First. Second and Third. Premier Championship for Breeder. Premier Championship for Exhibitor. A total, including American Shropshire Specials, of 16 Firsts, 9 Seconds, and 6 Championships.

Purebred Registered Rams and Ewes.
Individuals or Carload Lots.
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Contra Costa County, California.

Champion Ram P. P. I. E.



KIMBLE RAMBOUILLETS.

These sheep are purebred, large and smooth, with heavy fleece of fine, long, staple, white wool. Yearling rams and ewes. Individuals or carload lots.

Prices reasonable.

Correspondence solicited.

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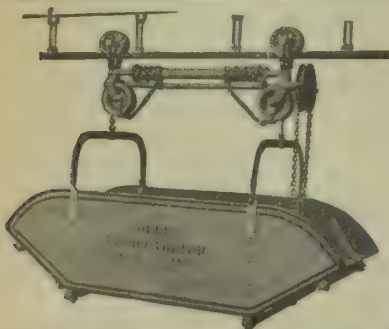
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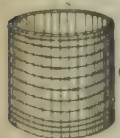
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Registered Jacks

Range raised; Guaranteed satisfactory breeders. Field Jacks a specialty. Registered Shire Colts. Will trade for young mules, horses or land.

James W. McCord
Hanford, California

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Best plow rig. No WHIFFLETREES—NO TRACES. Handiest farm harness. Indispensable in the orchard with special fitness for all low down work. You can hitch closer to your load, plow and cultivate close to the row, and save all the worry to man and team. No weight of whiffletrees for man to lug. Everything clear behind team. Use our outfit and save your trees. Highest endorsement of farmers and fruit growers. Write now. **B. F. BAKER CO., NUMBER (1220) MAIN ST., BURNT HILLS, N. Y.**

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will reduce them and leave no blemishes. Stops lameness promptly. Does not blister or remove the hair, and horse can be worked. \$2 a bottle delivered. Book 6 M free.

ABSORBINE, JR., for mankind, the antiseptic ointment for Boils, Bruises, Sores, Swellings, Varicose Veins, Allays Pain and Inflammation. Price \$1 and \$2 a bottle at druggists or delivered. Will tell you more if you write. **W. F. YOUNG, P.D.F., 86 Temple St., Springfield, Mass.**

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We now offer two young bulls for sale that are old enough for service. No. 1—Born Sept. 13, 1915.



Prince Alcartra Korndyke. Best bred son of Tilly Alcartra.

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Western Meat Company
Animal Food Dept. 704 Townsend St., San Francisco

VETERINARY QUERIES.

[Answered by Dr. H. B. Winttingham, Petaluma, Cal.]

[Subscribers wishing an immediate reply should send money order for \$1.00. No charge for questions answered through this department. Name and address of subscriber must accompany each query.]

OX WARBLE FLY.

To the Editor: What treatment should be given a cow who has several lumps, resembling boils, on her back. They are quite hard and there is a round smooth opening in the skin over each one, through which there is a discharge at times.—C. C. B., San Jose.

These lumps are caused by the larvae of the Ox Warble fly which hibernates under the skin. Press out the worms through the openings. They do no harm unless present in large numbers.

COW COUGHS, CAN'T BELLOW.

To the Editor: What is the cause of a three-year cow's inability to bellow? She has a peculiar throaty cough as of some obstruction, more pronounced when eating dry hay. At times in coughing, she seems to gag. Is in good condition, calved two months ago, and gives three gallons of milk per milking. She has had this complaint since last spring, only it is now worse than ever.—M. G., Lincoln.

Have this cow tested for tuberculosis.

BETTER RATION FOR GOAT DOGS.

To the Editor: I feed my goat dogs on a bread made by baking bran, middlings and corn meal in equal parts, shortened with goat

tallow and flavored with salt, sulphur and soda; the whole moistened with skim milk. They seem to do well on it, but it is very laxative. Could anything be added to counteract this effect, take the place of meat and otherwise strengthen it? The dogs must travel from 100 to 200 miles daily and are invaluable in the coyote question.—M. W., Cool.

Cut out the sulphur, saltpeter and soda. Place a few well-cooked bones in the mixture and you will have a good ration.

COW GIVES CHEESEY MILK.

To the Editor: We have a Jersey cow that is due to freshen about Mar. 30. She gives about two gallons of bright yellow milk, but we notice when we strain it there is quite a lot of yellow "cheesy" particles on the strainer. What is garget? What causes this? Give cause and treatment.—S. R. C., Santa Rosa.

Garget is a general term applied to all chronic conditions of the udder and has too many causes to be taken up in the space allotted here. Give the animal one dram potassium iodide dissolved in water twice a day. It is probable that this cow will come in sooner than you expect, so dry her up.

COWS SCOUR.

To the Editor: Last spring some of my cows got to scouring about four weeks after being fresh, and got very thin. They failed from four to one gallon of milk daily, and have never come back to their full flow. They run on Bermuda and alfalfa, and I feed them a little hay twice daily. How can I prevent them from scouring? What causes it?—J. H. P., Kingsburg.

Give the affected animals six 30-grain tablets sulphocarbolates twice a day. The cause, at this distance, it is impossible to give.

LUMPS ON BAGS.

To the Editor: A cow has a large lump in her bag just at the root of her teat. It gathers and breaks. Seems as if something either bit it or something has been injected into the bag. Every fresh cow is the same. We sold the old ones and bought fresh ones, but they were just as bad.—N. T., Alvarado.

Would suggest that you call in your veterinarian and have him get a vaccine made up from some of the exudate; as you have a chronic infection in your herd.

LOOKS LIKE GLANDERS.

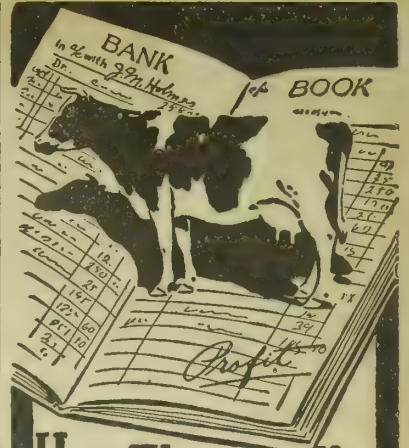
To the Editor: I have a mare that has had distemper for over a year and I fail to find anything that will cure it. She runs at the nose and the large glands behind her jaw are swollen at times. She only coughs when she eats dusty hay or gets warm. Can you tell me what to do?—O. B., New Pine Creek, Ore.

This looks very much like glanders. Have your veterinarian in and the horse tested.

A CASE OF STRINGHALT.

To the Editor: I have a horse that steps about, raising one hind foot and then the other as if the feet were cramped. He is about 12 years old. He does this especially when working. He is, not lame, and I can find no limps or sore places by feeling. Kindly advise me.—G. H. R.

This is a case of stringhalt. An operation is occasionally successful.



Here's Where it Tells.

It isn't a question of sentiment whether or not your cows are in the pink of condition—but it does make a big difference in your bank account. Since you are keeping cows for milk instead of for meat, better see to it that their milk-producing organs are kept working normally.

At the first sign of decreasing milk-flow, look for the cause. Ten to one it is due to some trouble with the digestive or genital organs, and such disorders are best set right by the use of Kow-Kure, a cow medicine backed by twenty years of success. Try Kow-Kure on your poor milkers and watch results. Hundreds of doubting cow owners have been convinced that this old remedy has no equal for the prevention and cure of Abortion, Barrenness, Retained Afterbirth, Milk Fever, Lost Appetite, Scouring, Bunches, etc. Buy Kow-Kure from your feed dealer or druggist; 50c. and \$1.00.

Write for our free treatise, "The Home Cow Doctor."

Dairy Association Co.
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THE J. K. BIGELOW POULTRY RANCH and Hatchery—400 acres devoted to superior vigorous Hogenized White Leghorns. Bigelow chicks are incomparably superior to the product of ordinary commercial hatcheries. Prices same as former seasons—10 cents each till April 1, 9 cents during April and May, and 8 cents thereafter. 10% deposit required with order. The Bigelow Poultry Ranch, Sonoma, Cal.

WHITE PLYMOUTH ROCKS—Baby Chicks, hatching eggs, from heavy-laying strain of Hogenized layers. The following winnings at the California State Poultry Show, Dec. 6-9, 1916, show the quality of my stock: 1st for best egg-type pen; 1st for best exhibition pen, special for best egg-type individual; 2nd and 3rd exhibition pullets and 3rd exhibition cockerel. Mrs. J. B. Tupper, Route 4, Ceres, Cal.

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"FINEST HATCHERY IN THE WORLD"—Baby Chicks, White Leghorns, and Rhode Island Reds, settings, 100's, 1000's, hatched right in our \$60,000.00 brick and concrete hatchery from our quality heavy layers. Reasonable prices. Stock, Hatching Eggs. Pebbleside Poultry Farm and Hatchery, Sunnyvale, California.

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BABY CHICKS—From large, healthy, vigorous, heavy laying thoroughbred Single-Comb White Leghorns. \$10 per 100; \$2 per 100 when order is booked, and balance 5 days before delivery. I pay the express to your nearest express office. H. A. Schlotthauer, Exeter, Cal.

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HOGANIZED AND TESTED—220-egg type White Orpingtons and Buttercups. Hatching eggs, chicks and cockerels for sale. Reasonable prices. For particulars, write M. Woodhams, San Mateo, Cal.

MODEL POULTRY FARM—White Leghorn Specialists. Baby chicks, hatching eggs from heavy-laying stock bred by us for thirteen years. Our prices are right. W. C. Smith, Peon, Corning, Cal.

THE SANTA CLARA VALLEY HATCHERY solicits your orders for Fall and Spring delivery in 8 breeds of baby chicks. Order early and get the best. Jos. A. Bihn, Lincoln Ave., San Jose, Cal.

HATCHING EGGS from our "Bred-to-Lay" S. C. White Leghorns and Barred Rocks. All hens selected strong and vigorous. \$6 per 100, or \$1.50 for 15 eggs. Jay Maxwell, Madera, Cal.

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CHOICE Rhode Island White Cockerels for sale at \$3. A few trios at \$7.50. Eggs for hatching in season at \$2.50 and \$3.50 per setting. A. W. Mumm, Route 3, Sacramento, Cal.

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HICKS JUBILEE HATCHERY, Petaluma, Cal.—White Leghorn and Black Minorca chicks and hatching eggs. Circular "How to Raise and Feed Chicks" Free.

BABY CHICKS—From select free-range White Leghorn stock. Place orders early. Prices on application. Western Hatchery, Petaluma, Cal. W. S. Waldorf, Prop.

S. C. RHODE ISLAND REDS—Pullets and Cockerels. Good Black Orpington Cock Eggs from R. I. Reds and Silver Campines. Mrs. R. S. Snauldin, Woodland, Cal.

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BABY CHICKS (White Leghorns)—shipped on approval before remitting. No weak ones charged for. Schellville Hatchery, R. F. D., Sonoma, Cal.

RUFF ORPINGTONS—Barred Rocks, Kinglet strain. Eggs \$2. \$3. Runner Duck eggs, \$1.50. Glendale Farming Ave., San Jose, Cal.

WANTED—White Cornish Game Cock. Write Chas. Hertzog, Los Molinos, Cal.

Raising Poultry for Profit

COMMON MISTAKES IN BROODING CHICKS.

[Written for Pacific Rural Press by Susan Swayngood, Pomona.]

Brooding chicks in small lots does not require much skill, but when we put several hundred or a thousand chicks into one house, under one hover or compartment, it calls for good management and a lot of patience to brood them safely.

Too Much Liberty Not Good.—The most common mistake people make is in allowing the chicks too much liberty during the first two or three days. The chicks get in corners and fail to get back to the hover before they are chilled. Then perhaps a slight diarrhea attacks that one or two chicks, which is communicated to others that are not strong enough to resist, and in a week or so we have a number of chicks pasted up at the vent. Now, it is always safer to remove the first few cases, if possible and save trouble. Still better is it to protect all of them from straying away from the heat until they have learned well where to run to get warm. If the hover is long, there should be boards about six or eight inches wide with boards of similar width nailed across both ends as an aid in protecting the ends of hover and to serve as legs for the long boards. If these boards are set out about one foot at first, the chicks will soon learn the way back to the warmth under the hover, and each day these boards can be set further out until the chicks have all the width of the room at their disposal.

Protect Chicks from Chilling.—If the brooder is round, like the International and the Victor, get the smallest mesh wire that is pliable, and make a ring to go around the hover, lapping over wire enough to give more room the second or third day. This is the easiest and safest method of protecting chicks from

chilling the first few days and nights. For some days after the guards are taken away it is prudent, to guard against the chicks' early-rising habit, to put them up last thing at night.

Increasing Heat.—Another common mistake made by people who are left in charge of brooders is to think that because the chicks are out from under the hover, exercising or eating, they need no more brooding in the day time. Some people are so bent on saving oil that they shut off the heat almost entirely early in the morning. Instead of lowering or shutting off the heat, it should be increased as soon as the chicks begin to leave the hover. The reason for this is two-fold; first, it needs more artificial heat to replace the animal heat lost by the chicks going outside the hover; again, it is needed to warm the room and hover so that if a chick feels cold it may run under the hover to get warmed up. It should be able to warm up quick

Wonderful Egg Producer.

Any poultry raiser can easily double his profits by doubling the egg production of his hens. A scientific tonic has been discovered that revitalizes the flock and makes hens work all the time. The tonic is called "More Eggs." Give your hens a few cents' worth of "More Eggs" and you will be amazed and delighted with results. A dollar's worth of "More Eggs" will double this year's production of eggs, so if you wish to try this great profit-maker, write E. J. Reefer, poultry expert, 4802 Reefer Bldg., Kansas City, Mo., who will send you a season's supply of "More Eggs" Tonic for \$1.00 (prepaid). So confident is Mr. Reefer of the results, that a million-dollar bank guarantee if you are not absolutely satisfied your dollar will be returned on request and the "More Eggs" cost you nothing. Send a dollar today or ask Mr. Reefer for his Free poultry book, that tells the experience of a man who has made a fortune out of poultry.—Advertisement.

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HATCHED CHICKS from Barred Rocks. R. I. Reds, White Leghorns. Good stock. Send for circular. G. L. Hawley, Madera, Cal.

EASTMAN'S BRED TO LAY Barred Plymouth Rocks, Chicks, Eggs, Cockerels. Fairmead Poultry Farm, Fairmead, Cal.

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LASHER'S HATCHERY, PETALUMA. Write for booklet, "The Day-Old Chick Business" and price list.

PIGEONS—Choice Carneaux, \$1.50 pair. J. W. Noble, Box 513, Livermore.

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BOURBON RED TURKEYS and Eggs for hatching. My birds won all the honors in the Alameda County Poultry Exhibition in Oakland, 1914, and just as fine this year. A. E. Balmer, Alhambra Valley, Martinez, Cal.

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BRONZE TURKEYS—Young stock of both sexes. Large and vigorous. Eggs in season. Order early. Free circular on turkeys, feed, etc. Albert M. Hart, Clements, Cal.

MAAMOTH BRONZE TURKEYS and Eggs. Booking egg orders now for early Spring delivery. M. M. deiman, Planada, Cal.

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MAKE IT EASY for those chicks as soon as they are hatched. Assure them of health and strength in a Model Hover. It will raise them all.

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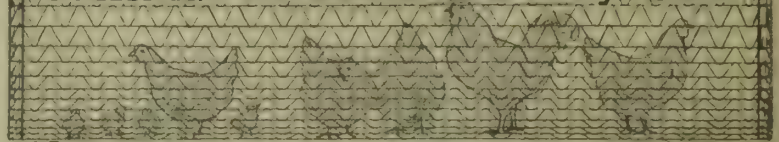
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White and Brown Leghorn Chicks, guaranteed strong and vigorous from Hogenized layers. Price \$10 per 100. I use and sell Pioneer Incubators and Brooders; none better. Write for particulars. James D. Yates, Poultry Judge, Modesto, Cal.

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It is the most economical as well as the most practical of all poultry fences. It costs no more to buy than the old style poultry netting and costs much less to put up.

It is the only fence made with a bottom mesh smaller than one inch. It will turn the smallest chickens. Because of the straight line, continuous weave of "CALMADE GRADUATED" Fence, baby chicks won't hang in it, large fowls can't climb it.

"CALMADE GRADUATED" Fence will not slip at the joints nor unravel when cut. Uniform in weave and width. It unrolls flat as a board—it is easily put up and stretches without bulge, kink or bend on posts 16 feet apart. Learn all about these advantages and let your next fence be a "CALMADE GRADUATED." Write at once for free samples of wire used, free illustrated folder and name of nearest dealer.

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White Leghorn and White Plymouth Rock Cockerels. White Leghorns and White Rock Baby Chicks hatched from specially selected heavy-laying stock. Prices same as last season. White Leghorns, January and February delivery, \$12.50 per hundred; March, \$10.50; after April, \$10.00. White Plymouth Rocks, \$15.00 per hundred. All F. O. B. Hopland.

San Francisco Office,

1210 Flood Bldg.

and get back again to hustle for its share of the feed. If the hover is cold the chick stays there, expecting to get warm, because it has been trained to expect warmth under that hover.

Changeable Heat.—The next mistake in brooding is in not keeping the heat as uniform as possible for the first few days. After the chicks have got a good start, begin to lower the heat according to the strength and size of the chicks. It is a mistake to attempt to regulate the heat according to age of chicks, for some chicks at three weeks old are larger and stronger than others at four or five weeks. If you begin to brood a batch of chicks at, say, 95 the first day, and the next day you let the heat run up to 100, then let it go at 90, is it reasonable to expect little chicks to stand the change without suffering? They will both feel it and show it. There will be pasty vents, down rough and ragged, eyes that look watery, and a general appearance of unthrift. At this stage, many begin to blame the feed, because they do not know what else to blame. They do not realize the difference between the little mite of a chick, with scarcely an ounce of vitality, and themselves.

Putting the Chicks to Bed.—To a great many this may sound foolish. Why, you say, chicks know enough to go to bed. True, most chicks know it after learning where their bed is, but you will find that while they know enough to go to bed, or under the hover, they don't know how to go to bed right. Faulty heating appliances more than any other thing are to blame for chicks going to bed wrong. Some hovers are warmer at certain places and cold in others; but even when everything is O. K. it still pays to put the chicks to bed properly. It only needs doing for a few nights, and the education of the chick is complete. The procedure consists in staying in the brooder house quietly and watching more than doing. If the chicks seem determined to bunch up in one particular place, take possession of that place. If the place is distant from the hover, they won't often bunch up under it, but if it is just outside or in corners, they will. If they are inclined to crowd in corners, wire the corners off with fine mesh wire; and if they still insist on bunching or piling up wait until all is quiet, darken the windows and keep still, when they have settled down, then go around quietly on your knees, and with your hands spread the chicks under the hover. Chicks are always docile in the dark, and while this may be a little trouble, it pays many times over, for if you leave them spread evenly under the hover, unless the heat goes down, you will find them in the same position in the morning. I know of no one feature in brooding that pays bigger returns than putting the chicks to bed for a few days.

POULTRY PRODUCERS JOIN SAN FRANCISCO DAIRY EXCHANGE.

War has been declared by Fred L. Hilmer on the Poultry Producers of Central California, Incorporated, which was recently organized by State Market Director Harris Weinstein, the members of which own or

control about 1,500,000 hens. For several years Hilmer has marketed, under contract, the eggs produced by the members of the Sonoma County Poultry Producers' Federation, a former organization which is now succeeded by the Market Director's organization, and he claims that because his efforts have resulted in higher prices for eggs and greatly bettering the condition of the poultry producers he should be entitled to continue as chief distributor for the newly incorporated company. On the other hand, the Market Director and the Board of Directors have de-

cided that the eggs be distributed by twenty-eight of the members of the San Francisco Wholesale Dairy Exchange. This arrangement will become effective February 10.

Hilmer has sent representatives to Sonoma county and he has established his campaign headquarters in Petaluma from which to direct his battle. As a counter move, J. H. Barber, Vice-President of the Poultry Producers' company, has secured a warehouse in San Francisco as a receiving depot from which to make deliveries to the twenty-eight egg handlers who are members of the

Wholesale Dairy Exchange. The Poultry Producers' company will itself have a seat on the exchange, and the company's representative will be able to bid up the price whenever he thinks quotations are below market values.

The Poultry Producers of Central California, Inc., was organized, under the State Marketing Act passed by the Legislature in 1915, for the purpose of combining all of the poultry-keepers into selling organizations. In addition to the Central company one has been formed in the southern end of the State.

\$1150 F. o. b.
Racine
For Mitchell Junior—120-inch
Wheelbase

Mitchell
SIXES

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Racine
For 7-Pass. Mitchell—127-inch
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\$1150 Model Also Now On Show See the New Mitchell Junior With Hundreds of Mitchell Extras

Now we invite you to see Mitchell Junior. A somewhat smaller Mitchell—a \$310 lower price than the 7-passenger Mitchell. But with generous size and ample power for a 5-passenger car. And with all the exclusive Mitchell attractions, due to John W. Bate.

Another step in Mitchell efficiency appears in the new Mitchell Junior. We urge you to come and see it.

A 7-passenger car, to have ample power and ample room, can't be smaller than the \$1460 Mitchell, which has won for itself one of the envied places in the motor world. But 40 horsepower is enough for a 5-passenger car. And a 120-inch wheelbase gives room enough—more than most cars give.

So the Mitchell factory this year also brings out Mitchell Junior. Not a new type—simply a size reduction. So a man who buys a Mitchell can get the size he wants.

Thousands of these new cars have been run for months, on every sort of road. And they have proved themselves as perfect as the 7-passenger Mitchell car itself.

See the New Extras

In both Mitchell models there are hundreds of extra features. They give you at least 20 per cent extra value over any other car in this class.

These extras—most of them exclusive to Mitchells—are paid for by factory savings. They are the result of efficiency methods, applied by John W. Bate.

This great efficiency engineer built

and equipped this whole plant. Every method and machine is adapted to producing this car economically. These methods have cut our factory cost in two. Nowhere else is a car of this class built anywhere near so low.

You will be amazed to see how many extras these new-day methods pay for.

Double-Strong Parts

One result is the Mitchell standard of 100 per cent over-strength. That is, every vital part is twice as strong as need be.

The Mitchell standard used to be 50 per cent over-strength. That itself was extreme. The Mitchell car has always been a marvel of endurance.

But, in the past two years, we have

doubled this standard to give you a lifetime car. That fact is announced for the first time in the models now on show.

Over 440 parts are built of toughened steel. All parts which get a major strain are built of Chrome-Vanadium, and built oversize. We pay for steels in the Mitchell as high as 15 cents per pound.

31 Unique Features

There are also 31 extra features in Mitchells. That is, features which nearly all cars omit. Things like a power tire pump, reversible headlights, ball-bearing steering gear and never-broken springs.

These extras alone, on this year's output, will cost over \$4,000,000. But all are paid for by these factory savings.

Many New Luxuries

Our new body plant gives us for this year another enormous saving. All Mitchell bodies, open and enclosed, will be built in our own shops.

This saving enables us to add 24 per cent to the cost of finish, upholstery and trimmings. The finish coats are now heat-fixed. A rare-grade leather is employed. A hundred new touches make today's Mitchell the handsomest car in its class.

Every Mitchell extra is something that you want. Nearly all are things you don't find in other like-class cars. They are things which can't be given without added price, save under Mitchell methods. Go and see them. Judge for yourself what they mean to you. And see which size you like best.

MITCHELL MOTORS COMPANY, Inc.
Racine, Wis., U. S. A.

TWO SIZES

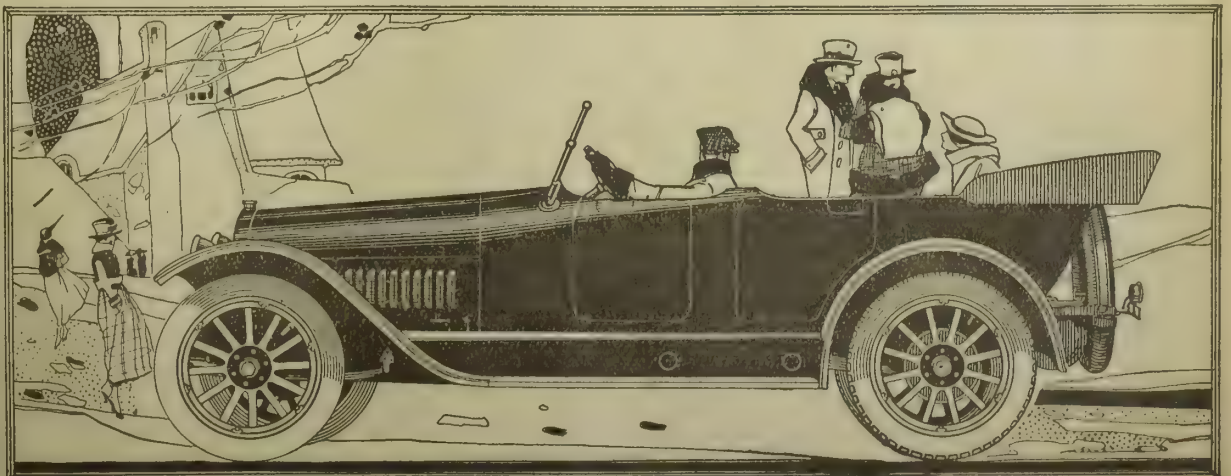
Mitchell—a roomy, 7-passenger Six, with 127-inch wheelbase. A high-speed, economical, 48-horsepower motor. Disappearing extra seats and 31 extra features included.

Price \$1460, f. o. b. Racine

Mitchell Junior—a 5-passenger Six on similar lines, with 120-inch wheelbase. A 40-horsepower motor— $\frac{1}{4}$ -inch smaller bore than larger Mitchell.

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Also all styles of enclosed and convertible bodies. Also demountable tops.



Mrs. Best's Letter.

My dear Friends:

Now that we have all taken advantage of the wonderful January sales and have our winter wardrobes in good condition, it is to be expected that the weather will become balmy and spring garments be in order.

The new spring suits are similar in cut to many we have seen this winter and stitching seems to be first as popular a trimming as ever. Especially in the high collar, military effect, stitching around the collar and down each side of the front is very effective. Some of these coats have a stitched belt, while others have a narrow leather one.

One of the new materials or rather designs for waists is Paisley chiffon and satin. In some cases the whole waist is made of the Paisley satin with collar and cuffs of white while in other cases it is combined with a plain material of harmonious colorings.

Separate skirts are very good style and one of the most popular is a washable white silk made in a box-pleated style. Others are simple two-piece skirts of gay stripes in the new silks that very closely resemble the old rajah or rough pongee.

For wear with these separate skirts, the sweater is invaluable and they range from the real silk to the furry Angoras in all colors and color combinations. There are also pongee sport coats in Norfolk style with bright silk collar and belt that are moderate in price and would be quite serviceable.

The new ribbon hats are not of one color as last year, but have a combination of colors. One I saw was made of narrow picot edge ribbon slightly ruffled and in alternating rows of green, brown, red, white and yellow. That sounds gaudy, but it was not, for the colors were soft and the ribbon narrow. There was no trimming at all upon it. The all-white ribbon hats are so girlish and pretty, I am hoping they will appear a little later.

Jersey cloth continues to be very popular for suits and is being worn the year round, a surprise to many, who had considered it only a summer material.

One of the good shops is showing a large line of sport skirts for early spring wear with tailored suits or for outdoor sports. These are plain of course, with large collars either square or round, or have the convertible collar to wear with stocks, and come in linen, pique, Japanese silk and crepe-de-chine.

Rosabella Best.

ORANGE CREAM.

Orange makes a delicious cream. Pare off a few bits of yellow rind and soak in the water in which the gelatine is dissolving. Squeeze and strain the juice of four oranges. Sweeten and mix with the yolks of four eggs. Add the dissolved gelatine white hot, strain and when almost cold stir in lightly a pint of whipped cream.

To Wash a Clothesline.—Wind around the back of a chair and tie the skein thus formed in several places with white cord. Boil out in soapy water, rinse well, and place on the chair in the sun to dry.

THE HOME CIRCLE

THE SUNSET LIMITED.

Oh, Hush-a-by Land is a beautiful place

For sleepy small people to go,
And Rock-a-Bye Route is the favorite one

With a certain wee laddie I know.

The track lies on sleepers of feathers and down,

No accidents ever take place,
Though there's only one track, and there's only one train,
But it runs at a wonderful pace.

There are beautiful things to be seen on this route—

If you're good you may take just a peep;

But strange as it seems, they are seen best in dreams.

Be sure that you soon go to sleep.

Say good-night to the Sun, for he's off to bed, too—

He can't hear you, so just wave your hand;

The Moon and the Stars they will light up the cars

As you travel to Hush-a-by Land.

So, quick, jump aboard, it is time to be off,

You have nothing to pay, you young elf;

Just think of the luxury, laddie, you'll have—

A whole sleeping-car to yourself!

—Booklovers Magazine.

SOUPS.

A very nourishing and pleasant addition to a meal is soup. Meat soups are heavier, but cream and vegetable soups are rich in nourishment. One of the essential things about soup is that it should be hot and that is more easy to accomplish since the soup tureen has passed out of favor. Now Soup is served in individual dishes direct from the fire and there is no excuse for it not being as hot as can be eaten with comfort.

At this time of year, the dried peas and beans are very satisfactory, for in many households the fire necessary is supplied by the kitchen range and they both require long, slow cooking. They should be soaked over night in plenty of water and the next day cooked until tender. Then rub through a colander and add milk, butter and seasonings. An onion cut in small pieces and added to the soup while the long cooking is going on, adds to the flavor.

A quick cream soup can be made by adding to a white sauce sufficient milk to serve and then adding either tomato that has been cooked and strained, or a can of corn, or hot mashed potatoes or creamed cauliflower. All of these cream soups need butter and careful seasoning.

DRIED PEACH RECIPES.

To Peel Dried Peaches.—Put desired amount of dried peaches in pan and pour boiling water over them; let stand on stove until the peeling slips off easily—about 20 minutes; remove the skins while still warm.

To Cook Dried Peaches.—Peel them according to above recipe, then wash thoroughly two or three times, add cold water and sweeten to taste. When cooked slowly, they are

almost like fresh fruit preserved.

Peach Dessert.—One pound peaches peeled; one-half pound sugar. Soak peaches one hour, then cook slowly until soft and add sugar. Drain and put through sieve and use as a base for half a dozen good desserts. One-half cup added to one can marshmallow creme and one-half cup of chopped raisins and walnut meats is delicious on crackers or as a cake filling.

Peach Tartlets.—Make a good pie crust. Invert patty pans and cover with crust. Bake and fill with peach dessert and cover with whipped cream.

For Breakfast.—Cream of wheat with stewed dried peaches added just before serving is excellent. Serve with cream.

Peach Butter.—Soak peaches over night in just enough water to cover, next morning put through meat chopper. Add enough water with sugar and cook one hour, stirring often to keep from burning. Add clove and cinnamon or cinnamon alone if preferred. Delicious with hot biscuits.

Dried Peach Cobbler.—One pint stewed peaches, one and one-third cups of water, one-third cup of sugar; put in pudding dish and let come to boil. Have ready the following batter and drop in, baking 20 minutes: One cup flour, one teaspoon baking powder, pinch of salt, one tablespoon sugar, one tablespoon butter, rub all together and add one-half cup of sweet milk. Drop into the boiling peaches and bake. Serve with cream.

CLEANING GLOVES AND FABRICS.

When using benzine to remove a spot on a silk skirt or any other article, there is much less danger of leaving a ring if under the spot is placed a cloth to absorb the surplus fluid and then the spot is rubbed dry with a clean cloth. The odor will leave sooner also, as there is less left to evaporate. Gloves are very much whiter if they are rubbed dry with a clean towel after being washed in benzine on the hands. The addition of flour to the benzine helps whiten them also, but they need to be dusted very carefully dry, or they will whiten everything they touch.

For home cleaning, a clear, sunny day should be selected.

BUSINESS.

"Business is poor," said the beggar. Said the undertaker, "It's dead!" "Falling off," said the riding school teacher.

The druggist, "O vial," he said. "It's all write with me," said the author.

"Picking up!" said the man on the dump.

"Business is sound," quoth the bandsman.

Said the athlete, "I'm keeping on the jump."

The bottler declared it was "Corking!"

"Makes both ends meat," said the butcher.

The tailor replied, "It suits me!"

—Implement and Vehicle Record.

Floral Department.

[By Geo. N. Tyler.]

You can plant the hardy perennials now. Get one-year-old field-grown plants, Canterbury Bells, Coreopsis, Lanceolata, Delphinium, Foxgloves, Gaillardias, Gypsophila, Zamculata, Golden rod (divisions), Golden glow (divisions), Hollyhocks, Oriental Poppy, Pentstemon, Shasta Daisies (divisions), Sweet William, Virginia creeper, Cannas (divisions). Also, get your pansy plants for early spring blooming, if you did not sow any last fall.

Now a few words on flats and seed planting, as it will soon be time to sow seeds of asters, etc., for fall blooming. Nearly all kinds of flower seedlings need transplanting. Therefore, it is best to plant in shallow boxes or in the soil of a hot bed. A box called a "flat" is what the florists and nurserymen use for planting seeds and for transplanting the small plants after they are large enough to handle. A flat is a box 26 inches long, 13 inches wide, and generally 3 inches deep inside. Get your strips of good redwood lumber, the ends cut in twelve-inch lengths, one inch thick, and three inches wide. The sides and bottoms are one-half inch long. A strip on each side and four on the bottom complete the box and the strips on the bottom are wide enough apart to give thorough drainage. The box is 24x12x3 inches inside measure, and holds seventy-two plants, planted two inches apart both ways.

Then take light rich earth, one part loam, two parts leaf mould, and one part pure sand. Mix thoroughly and run through a quarter-inch sieve. Some bake the prepared soil to kill weed seeds and larva of insects that may be in it. After you have filled the boxes with the prepared soil, firm it down with a brick or piece of board (I use a plasterer's trowel), then sow your seeds carefully and evenly and press them in with a smooth board and sift over them light soil, or, what is better still, pure sand, sufficient to cover them. Moisten them with luke-warm water, but use a fine spray so as not to wash the seeds. An empty tomato can, with the bottom punched full of small holes, is what I use.

If you have a hot bed or cold frame, or small green house, so much the better, but if not, place the box where there is but little light, but in a warm place, and cover the box with a newspaper. Let them remain thus for several days till the seeds have a chance to swell, before you give them much light. As soon as the seeds germinate, give them light and air. Remember in watering seedlings or seeds to do so in the morning with luke-warm water, and never at night or late afternoon, for the damp surface is liable to form a fungus, which will cause every plant to damp off, or rot at the surface of the ground. Never under any consideration use any kind of manure in the seed boxes for there is too much fungus in it.

Undoubtedly the after half of life is the best working time. Beautiful is youth's enthusiasm, and grand are its achievements, but the most solid and permanent good is done by the persistent strength and wide experiences of middle life.

Good Health.

[By H. E. Pastor, M. D.]

The Fad for Flannels.

Time was when nobody was thought properly clad in winter unless swathed in one or two thicknesses of flannel underwear and be-bundled in heavy woolen outer garments. Time was, too, when coughs, colds, sore throats, bronchitis, pneumonia, and tuberculosis were much more common than they are at pres-

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NATURE'S Health Retreat

WHERE NATURE, understandingly, assisted by capable physicians and the patients themselves, corrects almost every ill humanity is subject to.

The NEW SYSTEM Method of Individual Treatment

—which is neither a "one idea" system, nor a faith cure, nor a fad. It is a broad system of practice, based on the study of mankind and his needs, both mental and physical, from the standpoint of Nature. It is the outgrowth of years of experience in the treatment of nervous and chronic illness. And it is the only rational drugless method of treating so-called incurable chronic cases, many of which have baffled the skill of the best medical practitioners. Results have proven its worth. Send for our booklet, "THERE IS NO EXCUSE FOR ILL HEALTH—EXCEPT ACCIDENT." It describes interestingly and convincingly the NEW SYSTEM way of getting well and keeping well. A postal will bring it—send today.

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28x3	\$ 7.20	\$1.85	\$2.05
30x3	7.65	1.95	2.20
30x3½	9.85	2.20	2.45
31x3½	10.40	2.25	2.50
32x3½	10.95	2.35	2.55
34x3½	12.05	2.40	2.65
36x3½	13.25	2.50	2.90
30x4	14.50	2.95	3.25
31x4	15.25	3.00	3.35
32x4	15.45	3.10	3.45
33x4	16.15	3.25	3.55
34x4	16.45	3.30	3.70
35x4	17.20	3.35	3.80
36x4	17.45	3.45	3.90
34x4½	22.25	4.05	4.50
35x4½	22.95	4.15	4.55
36x4½	23.35	4.30	4.75
37x4½	24.10	4.35	4.85
35x5	26.00	4.95	5.45
36x5	26.35	5.15	5.60
37x5	27.40	5.20	5.70

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Prices subject to change without notice.

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The Oldest Automobile Tire Jobbing
Concern in the United States and the
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ent. And the time when the heavy woollens were worn next the skin and outside it, and the time when these respiratory and pulmonary diseases were so rife, were about coincident. And there is a strong belief among many medical men today that the coincidence was not merely accidental, but that it bears the relationship of cause and effect.

Woolen undergarments (including stockings) may have their place in ministering to the comfort of babes, young children, the aged and infirm, or the debilitated of any age; but it is a grave mistake for the active and healthy to coddle themselves with this excess of warmth. The skin is a complicated structure, and is enabled by its own power of contraction and expansion of its blood vessels to protect itself against cold, and to throw off an excess of heat (transpiration assisting in the latter process).

Besides diminishing the natural resistance of the body to cold and disease, one of the severest indictments that can be brought against woolen underclothing is its fateful property of absorbing and retaining perspiration. As a result of the overheating of the body perspiration is easily started. The moisture absorbed by the woolen garment is held, and when bodily activity ceases the woolen fabric becomes a cold, clammy thing next the sensitive skin and severe congestions result. Cottons, linens and silks part with the moisture taken up much more quickly, and in that respect are to be preferred. In the mild temperatures that prevail in California's valley and foothill districts scarcely any change of clothing from season to season is necessary among the well; and among the more intelligent the fad for flannels is happily passing.

Handle It Gently.

The skin of the infant is very tender and calls for special attention on the part of mother or nurse. Only the blandest soaps should be used in the bathing, and the drying of the parts should be effected by careful rubbing with a soft towel. If there is any abrasion or chafing, bran water may be substituted for the plain water. This is prepared by placing two or three cups of bran in a piece of coarse muslin or cheese cloth and squeezing it into the bath water until it becomes slightly thickened. It acts as an emollient. Parts of the body that are frequently wet or soiled should be cleaned as soon as noticed and the napkin renewed. If the chafing becomes severe use a little sweet oil on absorbent cotton to cleanse the surface, and then dust over with oxide of zinc, or a preparation composed of starch and boracic acid half and half, or the prepared talcum powders sold in drug stores.

Value of Deep Breathing.

Deep breathing is an absolute necessity to abounding health. There is always a residuum of stale air left in the lungs after the act of expiration. A special effort should be made at intervals to expel as much of this residual air as possible. Replace this with fresh air drawn into the lungs in deep breaths. Deep breathing should be practiced regularly by all. It is only when fresh air is inhaled in full breaths that all



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Geo. C. Roeding, President and General Manager

the cells of the lung tissue are filled with this vitalizing fluid. Many persons of both sexes, but more especially women and girls, of inactive temperament, never have the upper part of the lung tissue adequately inflated, if inflated at all. It is here where the symptoms of that dread disease, pulmonary tuberculosis, (consumption) first make their appearance, and mainly for the reason that the function of this part of the lung structure of supplying oxygenated air to the depleted blood flowing through its capillaries, is neglected. This lung substance thus undergoes a sort of atrophy, or wasting away, and becomes easily susceptible to disease invasion. Therefore, not only make deep breathing in the open air a special exercise at

intervals of the day, but cultivate the practice of deep breathing habitually. Few simple things contribute more potently to the maintenance of the general health.

The Sense of Taste.

Try to have all foods and beverages agreeable in flavor. There is an intimate connection between the organs of taste and those of digestion. Insipid food substances, no matter how intrinsically nutritious, are not readily assimilated. The sense of taste is not a mere palate-tickler.

We are all born with passions; they are part of our very being. Don't try to repress them; the effort is futile and undermines the health. Try to control them.

SAN FRANCISCO.

San Francisco, Jan. 31, 1917.

WHEAT.

A slow call has ruled the local market, with values generally unchanged. Eastern markets have shown a tendency to weaken, as peace talk and renewed rumor of diver activity have tended to hold trading down. Local holdings continue light.

Senora wheat	2.75@2.80
Northern club	2.70@2.75
Calif. club, ctt.	2.60@2.65
Northern Bluestem	None offered
Northern Red	None offered

BARLEY.

Spot trade in barley has been at a standstill, owing to the cleaned up condition of this market. Seed sold in larger quantities the past week at steady prices. Brewing barley is in limited demand and hard to move, but feed barley continues firm.

Seed, ctt.	2.50
Shipping, ctt.	2.35@2.40
Brewing	Nominal
Choice feed, ctt.	2.25@2.27½

OATS.

A strong demand and moderate sized stocks were contributing factors in advances on both red feed and white oats.

Red feed	\$1.85@2.00
White	2.25@2.50

CORN.

Delay in delivery of Eastern stock has brought firmer prices. All of the other varieties of corn rule firm while a small advance on Egyptian has occurred. Cleaning up of the poor stock on hand brought this change.

[First-hand prices on strictly first-class grain, San Francisco.]

Eastern Yellow, ctt., bulk	\$2.15@2.22½
California, sacked	2.20@2.25
Mid. Maize	2.00@2.20
Egyptian	2.25@2.50

BEANS.

No material changes in beans are reported for the past week, trading in this line having been rather slow. Limas were in somewhat better call and blackeyes have advanced about twenty cents per cental. It was reported that southern holders of Limas were asking as high as \$8.25 but the highest local quotation was \$8. Eastern inquiries for this variety are still being received, but most parties balk at the prices asked.

[Uncleaned, on wharf, San Francisco.]	
Bayos, per ctt.	\$5.75@6.00
Blackeyes	4.40@4.60
Cranberry beans	6.50@6.75
Horse beans	7.00@7.50
Small Whites (south)	7.00@7.50
Large Whites	8.10@9.50
Pinks	6.90@7.10
Limas (south)	7.85@8.00
Red Kidney	9.00@10.00
Mexican Reds	6.50@7.00
Tepary beans	5.90@6.00

HAY.

While a firm market is reported, sales have fallen off here to a very noticeable degree. The cold dry weather in the country compels feeding on a still larger scale than reported last week and withdrawals from up-State warehouses are very heavy. It is generally conceded that the old crop will be practically cleaned up before new hay is available and this has caused present holders to ask better prices. Dealers are buying all available stock in interior districts and the prices paid are said to have ranged very high for the quality purchased.

[Price per ton, carload lots, San Francisco.]

Wheat, No. 1	\$17.00@19.00
No. 2	15.00@17.00
Tame oats	14.00@19.00
Wild oats	14.00@16.00
Alfalfa	14.00@17.00
Stock hay	13.00@14.00
Straw, per bale	.70@.90

FEEDSTUFFS.

Feedstuffs are still in heavy demand, and prices generally range from steady to firmer. The one exception is middlings, some lower grade stock being offered as low as \$37.00 per ton here.

[Per ton, San Francisco.]	
Beet Pulp, per ton	\$20.00@21.00
Alfalfa meal, per ton	21.50@22.50
Bran, per ton	30.00@31.00
Oil Cake	40.00@41.50
Cocoonut cake or meal	31.00@32.00
Cracked corn	47.00@48.00
Middlings	37.00@40.00
Rollad Barley	46.00@47.00
Tankage	47.00@48.00
Rollad oats	46.00@47.00
Rice middlings	33.00@34.00

POTATOES, ONIONS, ETC.

Still higher prices on potatoes and onions have been features of the past week. The general price on good deltas is \$3.00 per cental and some holders are asking higher. Ice-house onions are being held at \$8.00 per cental with street sales at \$6.00@7.25. Offerings of green vegetables are still of secondary importance in the market. A few southern tomatoes that are not badly frost bitten are being offered and selling at 75c@1.25 per crate. Lettuce is lower under increased arrivals with celery and rhubarb about unchanged.

Lettuce, crate	\$1.00@1.50
Celery, Delta, crate	2.90@4.50
Tomatoes, crate	.75@1.25
Rhubarb, box	1.30@1.50
Potatoes, ctt., Delta	2.50@2.75
Saltinas	2.75@3.00
Oregon	2.50@3.00
Onions	6.50@7.25
Garlic, lb.	.35@.40

POULTRY.

California receipts still fall short of supplying local demand, but arrivals of Eastern stock have been enough to prevent any sharp advances. Interior shipments for the past week have run largely to young fowl with the result that earlier prices are noted

on fryers, broilers, and young roosters. On the other hand, the market is insufficiently supplied with hens and quotations on this line have stiffened under a good demand.

Turkeys, dressed, large, lb.	26@28c
Turkeys, live, lb.	24@25c
Young, large	26c
Broilers, 18 lbs to doz and less	28@30c
do. over 18 lbs. to doz	25@27c
Fryers	24@26c
Hens, extra, per lb. colored	20@22c
Small leghorn	18@20c
Smooth Young Roosters, per lb.	
(3 lbs. and over)	22@25c
Geese, per lb.	18@20c
Squabs, per lb.	40@43c
Ducks	20@22c
Old	20c
Belgian Hares	12½@14c

BUTTER.

Continued light arrivals are responsible for a very firm undertone in the butter market. An added factor in this firmness has been the general advance on butter in the Eastern markets and the sudden demand for butter at Los Angeles. For some unknown reason, the southern city has been so anxious to get stock that on several days of the past week the Los Angeles quotation on butter has been above the San Francisco figure. A few small lots of butter were sent to the Northwest this week as a result of a three-cent advance in the price of butter at Portland. Arrivals during January were 1,388,200 pounds.

	Thu. Fri. Sat. Mon. Tu. Wed.
Extra	37 37½ 38 39 39½ 40½
Prime	35½ 36½ 36½ 38 38½ 38½
First	35 35 35 37½ 37½ 37½

EGGS.

A partial reaction from the sharp declines of last week has served to hold egg quotations about steady. The pick-up in the retail demand as the result of lower prices and the outside call has cared for heavier receipts. Three cars were sent to New York and Chicago and nearly a car to Salt Lake City. The first shipment of eggs, 180 cases, from the newly organized Central California Poultry Producers' Association reached here Tuesday and the stock was divided between three houses by the Association's agent. Arrivals during January were 1,500,870 dozen.

	Thu. Fri. Sat. Mon. Tu. Wed.
Extra	32 32½ 32½ 32½ 32½ 33
Sel. Pul.	30 31 31 31 31 31½

Special Citrus Market Report.

Shipments of citrus fruit from Southern California from November 1 to January 28: Oranges 4831 cars and lemons 191 cars. Same time last year, oranges 2967 cars and lemons 1249 cars.

Shipments from Central California from November 1 to January 28: oranges 3931 cars and lemons 139 cars. Same time last season: oranges 4128 cars and lemons 111 cars.

The Eastern markets showed a little more strength and all good highly colored oranges met with a very good demand and the more popular brands brought a little more money. Poor fruit, however, was slow sale and showed no improvement. Lemons were in light supply, better demand and higher East. Locally the market remains much the same as a week ago. Local packers bought sparingly and confined their purchases mainly to the larger sizes of highly colored oranges. The free offering of culls, which have to be sold for what they will bring, working against the general market. The best oranges are still being bought at 1c per pound in the orchard picked, grapefruit in fair demand at 2c per

pound in the orchard picked. Tangerines slow sale at 1½c per pound in the grove picked. Lemons dull at 1½c per pound in the grove picked, for the best. Poor have to be sold for what they will bring. Offerings only moderate. While the crop of navels is said to be a good one, it is not thought to be burdensome and there is a feeling that all good fruit will continue to meet with a very fair demand.

AUCTION SALES.

New York, January 29.—Twenty-five cars navels and one car of lemons sold. Oranges firm and lemons higher. Weather cloudy. California navels averaged \$1.55@3.40. Lemons averaged \$2.80@3.25.

Boston, January 29.—Fifteen cars sold. Market easier on oranges; stronger on lemons. California navels averaged \$1.65@3.00. Lemons averaged \$2.15@3.45.

Philadelphia, January 29.—Three cars sold. Market firm on oranges at prevailing prices. Higher on lemons. California navels averaged \$1.95@2.45. Lemons averaged \$3.05.

1917 Figs Sold.

The California dried fig market is fairly booming, and some packers estimate that about 75 per cent of the 1917 crop of Calimyrna and white Adriatic figs around the Fresno district have already been bought and sold again by the packers, being now owned in the East; while black figs are being steadily bought up.

The movement here is based rather on an urgent demand from the East than on information as to future prospects possessed by local interests. Eastern buyers apparently have a well-founded belief that the shortage of fig importations will continue, and have been offering high prices for all the white figs they could get, wishing to be certain of covering their requirements. This has resulted in an advance to 7½c for white Adriatics and 11c or perhaps a shade higher for Calimyrnas.

Spot figs have long been cleaned up, as the Smyrna market was closed last year, and only about 7,000 tons was brought in, under great difficulties. A good sized lot of inferior Portuguese figs, fit only for bakers' use, was brought in; but this relieved the shortage very little, as there is ordinarily about 25,000 tons imported. The California crop is a very small part of the entire requirements of the country.

A good-sized tonnage of the California crop was contracted somewhat below present quotations, but the growers have been taking a firmer stand for the last week or two, and most of those who have not sold are holding for more than is yet offered. As the amount still available runs into no very great tonnage, and mostly in the hands of a few large growers, it will probably be very closely held.

HOPS.

Prices on hops are weaker, due more to a lack of first quality offerings than any let-up in the demand.

Sacramento	8@9c
Sonoma	10@11c
Mendocino	9@10c

HORSES.

Drafters, 1700 lbs. and up	\$250
Drafters, 1550 to 1650 lbs.	150@200
Chunks, 1350 to 1500 lbs.	150@175
Wagon horses, 1050 to 1350 lbs	110@150
Green Mountain range horses	
950 to 1200 lbs.	20@75
900 to 1200 lbs.	50@100
1000 to 1200 lbs.	150@175
1200 to 1400 lbs.	175@200

HIDES.

Almost the entire hide list has suffered a decline within the last week, buyers apparently not caring to purchase heavily at this time. Peace talk has brought a lull in the Eastern market and local traders are marking time until something more definite is learned from that source.

GROCERIES.

Few changes of note are reported in the grocery list. Sugar has apparently settled down at \$6.75, granulated basis. A few brands of olive oil have been advanced and one firm announces an advance on spice, to take effect on March 1.

PETROLEUM.

Engine distillate has been marked up	4c
Red Crown Gasoline, drums, etc.	per gal.
Red Crown Gasoline, cases, per gal.	28c
Engine Distillate, drums, etc., per	gal.
Engine Distillate, cases, per gal.	18c
Pearl oil, bulk, per gal.	9c
Pearl oil, cases, per gal.	17c
Zerolene, lt. med., heavy, bbls., per	gal.
Zerolene, heavy duty oil, bbls., per	gal.
Arctic cup grease (No. 0 to No. 5)	10 lbs., per lb.
25 lbs., per lb.	8c
10 lbs., per case "A"	\$1.25
Zerolene, transmission, lubricant,	25 lbs., per case "A"
	2.50

LOS ANGELES.

Los Angeles, Jan. 30, 1917.

BUTTER.

Receipts of week ending Jan. 30, 1917—250,002 cases.
Receipts of week ending Jan. 30, 1916—301,650.

A dropping off in the receipts and light production and the stocks of cold storage butter much lighter than a year ago, all encouraged higher prices the past week. Consumption, too, holds up well notwithstanding the high prices compared with a year ago. Extras selling now on this market 13½c higher than this time last year. Extras advanced here 2c up to Monday and San Francisco the same, while in Chicago extra is 1½c higher and in New York 2½c higher. The government report from 227 cold storage warehouses Jan. 1 showed a shortage of 4,303,683 pounds compared with the same date last year and the February report is expected to show a much heavier reduction.

Tuesday under light receipts the market showed further strength on call. Extra was bid for at 40½c and no sellers.

We quote extra creamery	40½c
Prime first	38½c
First	38c
	Wed. Thu. Fri. Sat. Mon. Tu.
1917	37 37 38 39 39 40½
1916	31 31 27 27 27 27

EGGS.

Receipts (railroads) for week ending Jan. 30, 1917—1370 cases.
Receipts (railroads) for week ending Jan. 30, 1916—870 cases.

There has been but little change in this market from a week ago. Receipts were much heavier than for some time and buyers were inclined to be bearish. The lower prices encouraged consumption and packers were very good buyers at the lower range of prices. San Francisco as well as Los Angeles showed no change up to Monday, while Chicago declined 1c and New York was steady with a week ago. Buyers failed to bid prices up until Tuesday when they were advanced 1c and are 7½c higher now than this time last year.

We quote fresh ranch case count.	34½c
Extras	33½c
Pullets	32c
Candled 2c and selected 3c over quotations.	
	Wed. Thu. Fri. Sat. Mon. Tu.
Ranch	32½ 31½ 32½ 32½ 32½ 33½
Extras	33 32½ 33 33 33 34½
Pullets	31 31 31 31 31 32

POULTRY.

The firmness noted in this market the past week has developed since into a general advance. No eastern receipts the past week and local arrivals light and demand good. Hence higher prices all round. Consumption continues good, which with the light offerings favored a firm market throughout.

We quote from growers:	
Broilers, 1½ to 2 lbs.	26@27c
Fryers, 2½ to 3 lbs.	23@24c
ons, over 4 lbs.	20@21c
ons, under 4 lbs.	17@18c
Ducks	19@20c
Geese	16@17c
Roosters, 3 lbs. up (soft bones)	22c
Turkeys, heavy, 12 lbs. and up	28@29c
Turkeys, light	24@25c
Squabs, live, per doz.	\$1.50@2.00
Dressed	3.75@4.85

HONEY.

It was very quiet in this market the

Tomato Industry Growing.

The California tomato acreage, which was greatly increased last year, promises to grow still further this season, in response to an exceptionally strong demand and high prices. Last year's pack, though greatly curtailed by bad weather in the fall, was much larger than the previous year, and is estimated at about 1,750,000 cases. This cleaned up very quickly, and a great shortage developed later in the season, in view of which prices advanced from very moderate to extremely high figures. The advance was due to various causes: the shutting off of imports from Italy, which had formerly supplied a large part of the New York trade; unfavorable weather in the East, and lack of fertilizer, which seriously shortened the Eastern crop. The consumption, also, was larger than usual. Owing to the shortage the canneries in parts of the Bay district paid as high as \$12 per ton toward the end of last season, compared with \$8 early in the season.

The Eastern shortage and low rates by the Gulf route placed California tomatoes in the New York market, where they had never appeared before, and they have found a great deal of favor, especially with the Italian trade, which uses large quantities. As a result there is a strong demand again this season; and the trade looks for another year of short production in the East, with Italian imports cut off, which will give the California stock a good field. The leading packers named opening prices for the 1917 pack at 95c per doz., compared with 70c for the 1916 pack, and it is understood that advance orders have been booked at this price which will cover the entire pack. This of course warrants higher prices to the growers; but other expenses have advanced. Cans alone are about 15c per doz. higher, and other expenses make the increased cost, exclusive of raw tomatoes, about 20c per doz. cans. The packers have been actively contracting for the new crop, offering \$9 to \$10 in the Bay district, compared with \$8 in Santa Clara Valley last year. In the interior, where more freight must be paid, prices are of course much below this. At these prices, the packers now state that they have secured fully their normal acreage, and with a good crop they will have all they can handle; though there are reports from the country of continued inquiries for acreage. There have been rumors of offers as high as about \$12 in well-situated districts, but such propositions appear to have been only tentative. At any rate, the canners deny that they have made any such offer, and the leading interests name \$10 as the outside figure. Owing to the high prices, packers believe there will be serious danger of overproduction of tomatoes next year.

past week. There was very little demand for either extracted or comb, but as stocks are light old prices were fully sustained and holders rather firm in their views.

We quote from growers:
Water white, pound7½c
White sage, lb.7½c
Light amber sage, lb.7c
Light amber alfalfa, lb.6½c
Fancy white comb, lb.10c
Light amber comb9c
Beeswax30c

BEANS.
There was a little better movement the past week. Receipts were only moderate and limas are higher. Buyers were inclined to take hold more freely than any time since the opening of the new year. Blackeyes were more quiet than limas and whites, though they too met with a fair demand.

We quote from growers:
Limas\$8.00@8.25
Large white10.00@10.50

Small white10.00@10.50
Pinks7.25@7.50
Blackeyes5.25@5.75
Tepary5.75@6.25

HAY.
There was a little more doing in this market the past week. Receipts were not heavy though they showed quite an improvement over the week previous. Grain hay made up a good percent of the arrivals and was dull, while alfalfa met with a very good demand. Local buying was only moderate, though there was a very good shipping inquiry from nearby points. The reserve stocks in the country seem to be light, especially of alfalfa, which encouraged country buying. Prices steady and rather firm of alfalfa.

We quote f. o. b. Los Angeles:
Barley hay, ton\$18.00@29.00
Oat hay, ton19.00@21.00
Alfalfa, northern, ton16.00@17.00
Alfalfa, local, ton18.00@20.00
Straw, ton9.00@19.00

Special Livestock Market Report.

San Francisco, Jan. 31, 1917.

[Prices paid for stock, live weight, off cars, without feed or water, at Stock Yards, South S. F. Hog prices subject to seller standing one-half of all hogs condemned by government inspectors.]

CATTLE are still scarce and prices are marked up on everything except calves. Supplies are mostly from the feedlots with all offerings quickly snapped up. Attempts to relieve the situation by Montana buying have stopped as advices say that northern growers are holding for a 9½-cent market. Lower prices are not looked for till grassers begin to move and with the continued cold weather this supply does not look promising.

Steers, No. 18½@8¾c
No. 28@8¼c
Cows and Heifers7½@7c
No. 26½@7c
Bulls and Stags5½@6½c
CALVES, light9@9½c
Medium8½@9c
Heavy7½@8c
SHEEP that are arriving are from feedlots and even this source of supply is getting well cleaned out. Some Utah lambs are being received but prices are again marked up in the hope of attracting still larger offerings.

Prime Wethers8½@9½c
Ewes7½@8c
Lambs11½@12½c
HOGS are not being offered as freely, a falling off of fully 30 per cent having been realized in the past week. A few soft hogs are finding their way to this market but are being docked 2½ to 3 cents a pound when slaughterers are compelled to take them. All grades are quotably higher, "packers" bringing 10½ cents.

[Rough, docked 20 pounds, piggy sows, 40 pounds, stags 30 pounds.]
100 to 150 lbs.8¾c
150 to 300 lbs.10¼@10½c
300 to 375 lbs.9¼@10c

Wool buyers are still keen to do business, the center of activity so far as country buying is concerned having moved to San Joaquin Valley points although there is still activity in the Red Bluff section. Nevada clips are said to be about all contracted for at this writing. From reports in the country

our quotations are not as high as conditions would seem to warrant but it is difficult to establish higher ones at this market. Boston wire says "wool market continues quiet but sales, when made, are at strong prices." Sacramento Valley, spring clip, 22@30c; Mendocino, year's32@33c; Southern, spring clip26@28c; Southern, 7 months13@16c; Imperial Valley, 7 mos.14@15c; Nevada, year's31@32c

HIDES.
Nothing new has developed in this market. Our quotations are changed on pelts, Kip and calf hides.

Buying Future Prunes.

Many rumors are current as to offers for 1917 prunes. In most cases it is apparent that the packers are merely feeling out the views of growers, as very few reports of firm offers can be verified, and most packers in San Francisco declare that they are unwilling to take such a gamble as purchases of prunes so far ahead would involve. Several thousand tons, however, have been contracted in the Santa Clara district by at least one house, at about 5c.

This is attributed in part to the desire of the buyers to cover their requirements well in advance; but the movement seems to be due partly to a desire to interfere with the formation of the new Association; especially as many growers have reported provisional offers, or at least suggestions of offers, as high as 5½c on long-term contracts, on condition that the Association movement falls through. Most packers in San Francisco profess entire ignorance of such offers being made; and comparatively few growers have been willing to consider any such propositions.

From present appearances, the prune situation is extremely strong. There are not over 8,000 or 9,000 tons left in the State, probably less, against 17,000 tons a year ago; and that amount was closely cleaned up before the new crop appeared. The stock is practically all in packers' hands; only two or three large blocks remaining with growers. While present trade demands are limited, with jobbers buying from hand to mouth, there is no indication of curtailment of consumption. Domestic requirements are sufficient easily to clean up what is left at full prices; and whenever the war ends an enormous foreign demand is expected. Packers are offering about 6c for spot prunes, with perhaps ½c premium for choice lots in small sizes.

Steers21 @23 c
Cows21½ @23 c
Light hides, 25 to 48 lbs.21½ @23 c
Kip20 @22 c
Calf and veal29 @30 c
Dry Hides32½ @33½c
Dry Kip35 @36 c
Dry Veal and Calf38 @40 c
Pelts, long wool\$2.25@2.50
Short wool1.25@1.50
Horse hides, wet, large, ea.5.00@5.50
dry, large3.00@3.50

No. Portland, Ore., Jan. 29, 1917.

BEEF STEERS: Today's trading in the beef steer division was very active especially on all good to prime grades. Prices were a good 25 cents higher on all prime beefs while ordinary to good grades scored a 10-15c advance, tops selling for \$9.00. Good steers realized from \$8.25 to 8.50; medium grades brought around \$8.00. Ordinary beefs are meeting with but little call from packers.

COWS AND HEIFERS: The supply of cows here this morning was light, with a good demand for fat stuff. One lot of Idaho cows realized \$7.75, with a number of small bunches at \$7.50. Fair to good kind brought \$6.75 to 7.00. Medium and ordinary dairy types from \$4.50 to 6.00.

HOGS: Hog values on the North Portland market this morning bounded to within 15 cents of the record prices of 1909 when another big 25-cent advance was made on all grades. One load of prime medium weight porkers crossed the scales at \$11.35 with the bulk of the good hogs bringing \$11.25. Ordinary kinds sold down to \$11.00, of which there was a good-sized spread. The pig supply is rapidly diminishing and the price along with others advanced 25 cents, the bulk bringing \$9.75.

SHEEP: Arrivals for the day were in goodly numbers. The demand for both sheep and lambs is large; an unlimited amount can be taken care of. Quotations on all sheep were advanced again this morning, prime east of mountain lambs bringing \$12.10@12.25. Best yearlings were quoted \$10.25 to 10.50; with wethers from \$10.00 to 10.25. Good mutton ewes are quotable at good 50 cents higher at \$9.00 to 9.25, for prime stuff. Prime shorn lambs are realizing \$10.00 to 10.25.

Los Angeles, Jan. 30.

CATTLE: A firm market and very good demand was had the past week for all good killing steers and fat cows. The advance of last week was fully sustained. California and Arizona furnished most of the supply and what cattle coming in very good condition. Eastern markets continue high and very good beef market was had, which caused killers to bid up well for everything that suited.

Per cwt. f. o. b. Los Angeles:
Beef steers, 1000 to 1100 lbs. \$8.75@9.00
Prime cows and heifers7.00@7.25
Good cows and heifers6.50@7.00

Quotations f. o. b. Los Angeles:
Beef steers, 1000 to 1100 lbs. \$8.75@9.00
Stockers and feeders5.50@6.00

HOGS: Not so many in the past week and the market was firm for good mixed packing and lights. But while killers bid full quotations there was no disposition to advance prices. California and Arizona furnished most of the supply and some very good hogs. But few Idaho hogs in, most of them being drawn East by the high prices there.

Per cwt. f. o. b. Los Angeles:
Heavy, averaging 250@300 lbs.\$9.25@9.50
Mixed, 200@250 lbs.9.25@9.50
Light, 175@200 lbs.9.25@9.50

Rough docked 20 pounds, piggy sows 40 pounds and stags 40 per cent.

SHEEP. Last week's advance was fully sustained and lambs were bid up another 50c per head. A fair number of both sheep and lambs were in, but the supply was light for the demand, causing a very firm market. Utah and Arizona furnished most of the supply with a few from Idaho. More could have been disposed of if here. Killers all buying both of sheep and lambs.

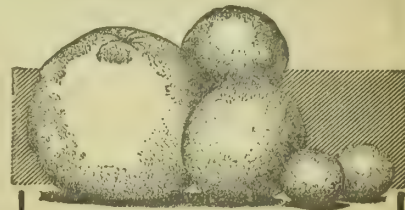
Per head f. o. b. Los Angeles.
Prime wethers\$8.00@8.25
Prime ewes7.50@7.75
Yearlings7.50@7.75
Lambs7.50@8.00
CALVES: Offerings light and market firm. Demand good for what few coming in. Selling at \$8.50@9.50.

WEEKLY BUTTER AVERAGES.

Cents per pound for Extras.		San Francisco		Los Angeles	
Week Ending	1916	1917	1916	1917	
Jan.	9....	26.65	34.91	28.16	36.90
"	16....	27.83	35.83	28.10	37.00
"	23....	28.85	36.91	28.50	35.00
"	30....	36.33	38.48	36.66	38.87
Feb.	6....	30.25		32.33	
"	13....	31.40		32.25	
"	20....	32.00		32.00	
"	27....	30.90		35.25	
March	6....	24.08		24.16	
"	13....	29.91		28.83	
"	20....	28.33		27.16	
"	27....	28.50		28.08	
April	3....	28.50		28.83	

WEEKLY EGG AVERAGES.

Cents per dozen for Extras.		San Francisco		Los Angeles	
Week Ending	1916	1917	1916	1917	
Jan.	9....	31.41	27.91	32.00	38.16
"	16....	33.33	41.83	30.75	40.83
"	23....	34.83	32.50	34.33	33.12
"	30....	36.33		36.66	
Feb.	6....	35.66		35.50	
"	13....	28.90		28.00	
"	20....	23.66		20.33	
"	27....	20.30		18.50	
March	6....	18.33		18.00	
"	13....	19.50		18.91	
"	20....	20.00		19.08	
"	27....	21.41		20.83	
Apr.	3....	21.75		21.00	



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Dear Mr. Hayne: Answering your kind favor of the 15th, I am enclosing herewith photograph of some of this year's fruit on the Fogg grove, and you will note that they are above the average Mission. We also were able to harvest this entire crop before the frost, which shows that they are early ripeners.

We will be glad to keep in touch with you on this matter, and if we can be of any further service, don't hesitate to let us know.

Yours very truly,

I propagated the Fogg orchard thirty years ago. The origin of the Fogg trees was directly from the old Mission at Santa Barbara. The trees I have now for sale are full brothers to the Fogg olive tree, and like the Fogg trees, they are all propagated from the large size cuttings.

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Military service is not compulsory in Canada, but there is an extra demand for farm labor to replace the many young men who have volunteered for the war. The Government is urging farmers to put extra acreage into grain. Write for literature and particulars as to reduced railway rates to Supt. of Immigration, Ottawa, Canada, or

Gilbert Roche, Canadian Government
Exhibit, San Diego, Cal. Canadian Gov't Agt.

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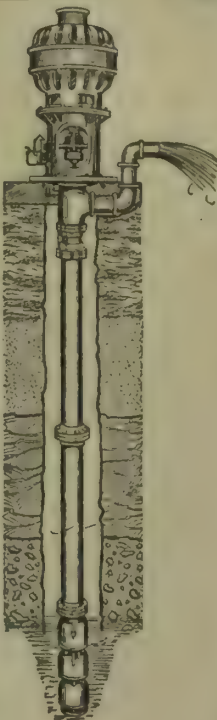
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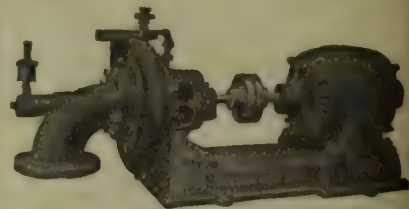


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SAN FRANCISCO.
LOS ANGELES STOCKTON, VISALIA

THE PACIFIC RURAL PRESS

SAN FRANCISCO

FEBRUARY 10, 1917.

LOS ANGELES

California Table Poultry and Brown Eggs.

[Written for Pacific Rural Press.]

IN THE opinion of three of the largest handlers of poultry, the methods of marketing poultry in California have been crude and wasteful because it has been customary for fowls to pass through from four to six hands after leaving the producer before reaching the ultimate customer. However, during the past two or three years improvements have gradually been made, and at present a fair percentage of the fowls marketed in the large cities now pass through only two or three hands and the fowls are of a much better quality, more attractively dressed for market and sorted into uniform grades. These improved methods have encouraged the increased production of the heavier birds, most of which lay brown eggs. Not only has the producer been benefited because of an increased and steadier price for table fowls, but the increased production of choice brown-shell eggs has awakened a keen demand for these colored eggs when they are delivered perfectly fresh, of even size and uniform color. In regard to the marketing of eggs in San Francisco market, those produced by the members of the newly organized Poultry Producers of Central California, Incorporated, comprising the output of about 1,500,000 hens, will be sold through members of the San Francisco Wholesale Dairy Exchange. This association is represented on the Exchange by a member who may exercise at any time the right to buy in the eggs when he considers it may be to the best interests of the producers.

It is reported from Los Angeles that the eggs from the Poultry Producers of Southern California, Incorporated, have been contracted by one firm. The handling of eggs commercially is thus largely provided for during the coming year.

In San Francisco the handling of poultry has attained large proportions. Three of the largest firms were interviewed and the following statements from them give a very fair insight into the present situation:

Prices Advance with Increased Production.—Higher prices are now being paid for table poultry than ever before in the history of California, states V. O. Harbaugh, of Harbaugh & Co., who handled 3,400,000 pounds of poultry during 1915, and that about 90 per cent of the poultry arriving in this market are broiling or fricassee chickens, making a shortage of other classes and the high prices that prevail. But there has been a noticeable increase in the larger breeds of the Pacific Coast, and at the present rate of increase of these larger breeds all shipments of live poultry from the East will be eliminated within the next three or four years.

What the East Sends Us.—There has been an average of about 300 cars of live poultry, consisting of the larger breeds, such as Plymouth Rocks, Rhode Island Reds, etc., shipped here each year from the East. This does not include the chilled or frozen poultry shipped from the East, which amounts to approximately 100 cars per year. During the last year there were shipped here from the East approximately 5,500,000 pounds at an average price of 20c per pound, and approximately 2,000,-

000 pounds at 22c per lb., all of which could have been produced in California if special effort had been made to the raising and culture of large breeds. This represents in money over \$1,500,000.00.

One reason that Eastern poultry is quoted in the market as selling higher than our California birds is that all Eastern poultry is grain-fed on the farm, and while en route on cars they are similarly fed on cereals and condensed buttermilk diet, which places them in the best condition when offered for sale on the market. If our local poultry raisers would put their poultry through the same fattening process before offering on the market the results would be much better and the quality of the poultry brought up to a standard.

Increased Production of Large Breeds.—W. E. Coleman, manager of

the California Poultry Company, states that the increase in production of the larger breeds of fowls in California during the last year was about 300 per cent and that this State will soon rank first in production of these larger fowls. The average person in speaking of poultry seems to have in mind the production of eggs and does not realize how large is the poultry industry in this State when viewed from the standpoint of poultry for table use. The present demand for table fowl is mostly for fricassee or roasting chickens. There should be a much stronger present demand for broilers, but Mr. Coleman says that the general public does not know there are broilers at this season of the year. Broilers bring the highest prices per pound.

Modern Crate Feeding.—Regarding crate feeding or fattening of fowls for the market, he states that the average raiser of poultry has not the facilities to do this properly, and advises the shipping of country raised or range chickens to market to be crate-fed or fattened, where it can be done by the most modern methods. When fowls are fattened on the farm for the market, the flesh is naturally soft and the shrinkage during shipment is considerable; especially is this true in shipping young ducks. The country or range-fed fowls stand up better during shipment; but the young farm-fattened birds cannot stand the journey.

Brown Eggs Now Popular.—He also states that one of the former reasons why the poultry producer

of California did not raise more of the larger breeds of fowls was that there has been more or less of a prejudice against the brown egg which is laid by most of these larger breeds, such as the Plymouth Rock and Rhode Island Red. The cause of this prejudice was due to the fact that there were not a great many of these larger fowls raised in this State, consequently these brown eggs were shipped in from the East, and when not carefully candled the public received some of these eggs which were far from being up to standard. Now that California poultry raisers have gone more extensively into the production of these larger breeds of fowls there is no reason why the brown egg should not command the same price and arrive in the market strictly fresh. The matter of allowing

(Continued on page 187.)



A full-breasted fowl, the type popular for table.

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EDITORIALS

IF WE SHOULD GO TO WAR.

ACCORDING to the humor or heroism of one's habitual outlook upon the affairs of life, the assumption by the United States of a warlike attitude toward Germany has different aspects.

To the one humorously inclined our nation becomes the big, fat boy who has no mastery of his fists, but whose tender heart forces him to lay soft hands on two belligerent kids, supplicating them to "fight fair," until he gets so many vicious punches in the ribs that he has to turn his back and protect himself by placing the weight of his smooth posterior curves upon the offender. Memoirs of boyhood convince us that there is no better way to vanquish a crazy fighting kid than to sit on him—if you have weight enough. We imagine this will be the manner of our war with Germany—if it should come to that.

To one of heroic thought, such a picture is, of course, an insult to the proper conception of our birthright and function as a nation. To such a one there now arises an opportunity by which the United States, having demonstrated for a century and a half the practicability, profitability and humanity of popular self-government, shall stretch forth a heavy hand to smite the world's latest and perhaps greatest embodiment of absolutism, tyranny, and inhumanity, the Hohenzollern-Hapsburg combination of Central Europe, and draw their subjugated peoples out from overhanging clouds of oppression to the blue sky of self-government, for which their wonderful intellectual and industrial attainments fully qualify them. In such heroic thought, the United States of America will be beneficent father to the United States of Europe.

OUR DUTY IN THE MATTER.

WHETHER one takes the humorous or the heroic aspect of the matter, our duty is the same. Whether it is for us merely to sit on the lid, or to catch as catch can in a struggle, we must prepare to sit tight or catch hard. From an athletic point of view we are overweight, unwieldy and soft. We must go into training at once. Perhaps, also, we have indulged so long in the joy of thinking humanity better than it is, that we have become too tender-hearted and have given so much consideration to the ambitions and aspirations of all men as pure and sincerely actuated by emotions for the good of all mankind, that we have lost that hatred of absolutism and class-domination which made our forefathers such a power in the world. But the physical, intellectual, and moral strengthening and stiffening of the United States will be the burden of written and spoken eloquence in this country from this day forward, by all who wield powers in those lines, and this writing need not try to pursue them.

THE CURE FOR HYPHENITIS.

THERE is one thing which gives us joy and confidence, and that is that this cloud of war, whether it prove silvery or fiery, will lead this country to greater unity and strength

in pursuit of its manifest destiny. The outbreak of the European war disclosed the fact that we had people who were with us but were not of us. For some reason or other, some of them choose to live and prosper in a country governed for the people, but, in their cases, not by the people. Others choose to participate in the government and opportunities of this country, but not to imbibe its spirit. When the founders of this nation proclaimed its function to give a real chance in life to the oppressed of all nations, they could have had no idea that people would ever think of exploiting this country while still holding in their hearts loyalty and worship for dynasties from under whose domination they desired to rescue their bodies and their life-laborers. The conflict between European nations disclosed the fact that we had numbers of un-American persons posing as American citizens, and that we also have numbers who have lived as though they wished to avoid the burden of citizenship in any country. Fortunately, the threat of war is awakening all such people to their duties to leave no doubt whatever as to their manhood and their recognition of the fact that when they swore allegiance to this country they also swore allegiance to any other. Those who are joined in associations with names linking American with hyphens to other world alliance, are hastening to declare that they are Americans, first, last, and all the time in loyalty and patriotism. Thus, at the very first hint of a warlike state, we are winning a great victory at home. It seemed to need a threat of conflict to demonstrate to the world that the United States is not a great aggregation of heterogeneous peoples, from which all old powers could recall their contributions, but a thoroughly organized and unified people, whose solidarity and spirit were American because they love the principles of freedom for manhood upon which this country was established and for which it continues to exist.

HOW IT WORKS.

LET the reader suspect that this passing of the hyphen, by the laying-on of patriotic hands during a crisis which compels choice, is rather fanciful than real, we hasten to the demonstration. As we write, there is only a cloud of war, and yet there is a rush of citizens of recent or remote escape from foreign yokes to declare their attitude toward the nation which they or their ancestors chose out of all the world for their home and country. This is a significant item in the current news from Portland, February 5th:

"German-American citizens of Oregon had planned a celebration and entertainment in honor of the Kaiser's birthday, but when 1500 of them assembled at the German House they found it decorated entirely with American flags, all German costumes discarded, and German national songs eliminated from the program.

"William Rechmann, chairman of the committee on arrangements, told those assembled that the purpose of the meeting had been changed, and that it would be for the German Red Cross. English was spoken by most of the speakers, and when 'America' was played by the orchestra those present rose en masse and sang with a will."

This shows a fact which no one should have ever doubted, that Americans of German extraction are just as good Americans as there are. Doubt was, of course, engendered by the antics of a few recent immigrants, who were infected with Kaiser-worship—but that has now gone by. The Portland Germans sang in English, and sang lustily, because they knew full well there was no requirement to do so. They spoke and sang in English because it is the prevailing language of their chosen country, and is now their language and the language of their children. They sang the language of their newer and superior love and loyalty. Thus our first victory in the possible war with Germany is won within our own territory and citizenship. It is a victory which makes for everlasting peace.

SWEET LAND OF LIBERTY.

AS ALL Americans are not expected to think alike, the same freedom of thought belongs to the hyphenated as to other varieties of them. It is, therefore, perfectly right for Ger-

mans of San Francisco to differ from Germans of Portland, if they so desire. We judge they do differ, if the statements of a morning paper are accurate. It seems that on Monday evening the German-American League met in this city, and after discussing the international situation, adopted the following:

"To the Hon. The President of the United States: "The Executive Officers of the German-American League of California, assembled at the German House in San Francisco, urgently request your Excellency to submit the question of declaring war to a referendum. Thus, we are sure, a way will be found to keep our beloved country out of the hellgates of war."

"H. F. Budde, Sec."

"John Hermann, Pres."

The Americanization of our Teutonic brethren is clearly shown by their desire to hold an election: it is a perfectly American recourse. But the impracticability of the proposition is seen in the fact that President Wilson cannot be sure whether he should call this election in this country, or in Germany. We piously believe that such an election, held in either place, would close the gates of hell upon the makers of this war—providing such election was held in an American and not a Kaiserliches way. But as we write on Tuesday a dispatch comes that the Kaiser "will probably declare war on the United States tomorrow." As we cannot stop our press for the Kaiser, or the President, or anybody else, we cannot wait to see this thing out. At this moment, however, it does seem as though the election to save us from war would have to be held in Germany.

DID NOT KNOW IT WAS LOADED.

WE ARE writing of a matter which may unfortunately become serious, but while it appeals to one as a sort of diplomatic joke that the United States should be at real war with anybody who can fight, we may write somewhat lightly of it. We have been incubating peace pigeons in this country so long, it seems incredible that we could hatch out a war eagle—though that depends upon the egg rather than the hatchery, of course. We are not sure that the Germans do not also consider it a joke, by the comments which the wireless brings from them. Against this surmise, however, comes their traditional inability to see a joke after four o'clock, even by turning back the clock an hour to get more daylight on it. For the wireless brings from Berlin this very humorous statement:

"The general feeling in Germany is regret that the American President gave to the German note an interpretation which was not intended by Germany. The German measures are not intended to damage neutrals, but were caused by the necessity of defending Germany against hostile measures, which are contrary to international law—Germany's enemies therefore being charged with the whole responsibility."

Thus it seems that Germany claims not to have known that its recrudescence of submarine barbarity was loaded for the United States. They claim that we have misinterpreted an order to blow us off the ocean, where we have a right to be if we wish, because they desire to have the ocean for their own purposes. The disingenuousness of this claim is shown by a current event which is thus recorded:

"I have orders to sink every vessel coming to England," said the commander of the submarines to the crew of the American steamer "Housatonic," flying the American flag and having the American colors painted on her side.

And so the American merchant ship "Housatonic" went to the bottom, fully and deliberately identified as such. And as the United States misinterpreted Germany's message to keep off the face of the earth, she had to send us to the bottom of the ocean! If Germany did not take herself so seriously and keep running amuck in peaceful countries, one would be prompted to credit her with playing operabouffe!

WAR FORCE AND FARMING.

OTHER writers in other journals will give ample exhortation as to what resources of men and munitions must be developed in this country if war should really come. It is our province to emphasize the need for food and to

urge its production in the fullness of the country's capacity. It was Frederick the Great, perhaps, who declared that armies move upon their bellies, and the reader of Carlyle can never forget the activity of Frederick's meal-wagons, for they had quite as much dash as his flying artillery. And frightful as has been the efficiency of the new agencies and materials which the present war has developed for man-killing, it now looks more and more as though the present war would be won by the party with the full dinner-pail. Supreme effort is being made on all sides to employ a gnawing stomach against a stout heart, and it is this war measure of the Germans which impels them to barbarity and to the destruction of the lives and property of peaceful peoples who maintain their rights to sail the seas. It is therefore the duty of all those who listen to our suggestions to

prepare for maximum production of foodstuffs this season. There has been an exceptionally good season thus far for getting in crops. Seldom have so many days good for field work filled a winter, and values have encouraged an unusual effort to sow the winter-growing cereals, which are now waiting for the pushing rains to make seasonable advancement. Besides, interest in other field crops of spring and summer growth is very keen and values very promising. The production of them should reach a maximum. If war goes on they will be needed; if the war is ended during the summer, as all hope, there will be an export demand beyond measure, because all Europe has been but scantily fed for a long time and has developed a fierce appetite. All the Americans can do will not oversupply the feasting which will celebrate the return of peace.

too dry. Would you advise planting new vines in their place this year?—C. E. B., Durham.

Dying back in that way indicates some acute injury or physical condition in the root which arrests sap flow. Sometimes the vine is gophered; sometimes the condition is so obscure that it is called "over-exertion," "constitutional weakness," and other things borrowed from human analogies and not understood any better when so named. Dig out a big hole, removing all root wreckage encountered, fill the hole with fresh soil from a distance and plant new, well-rooted vines.

Canary Island Palm.

To the Editor: Is there difference between the Phoenix Carariensis and the Phoenix dactylifera palms, on the botanical basis, and are they identical in their original habitats? I argue that they are originally botanically different; but a friend argues that they are identical, and changed only in habit of growth by removal from their originating locality.—E. S. P., Stockton.

Phoenix Canariensis is a distinct and well authenticated botanical species and it has a different habitat, viz., the Canary Islands, while Phoenix dactylifera is native in Arabia and North Africa. The botanical differentiation of Canariensis from dactylifera is rather recent, having been demonstrated within a few decades, but it now seems widely recognized. Canariensis has in its habitat the same characters by which we recognize it.

Too Much Fun for Fruit.

To the Editor: I have a problem on hand here in a young bearing apricot and peach grove about 8 years old which is in a very healthy condition and makes a very heavy growth each year, but does not turn off a reasonable tonnage. What effective method can I apply to check excessive growth and make the trees put on fruit?—Grower, Banning.

Stop winter-pruning except as may be required to shorten branches which may break out by weight and wind. Stop fertilizing. Stop irrigating, except as may be necessary to be sure the trees do not suffer in late summer and fall. If the trees swing around and set plenty of fruit this spring, you can thin out and shorten shoots after setting to reduce burden of tree as may seem desirable to get good size. If this fruit does come, more irrigation will be required than if the trees dodge again this year.

Give the Trees the Better Land.

To the Editor: I have 18 acres, part of which I wish to set to figs and part to grapes. About 7 acres is about 30 inches higher than the general level surrounding it and is fairly loose soil, deep, and well drained. The other part is very flat but can be well surface-drained, but is underlaid at a depth of 2 or three feet with spots of hardpan and other spots of the stickiest clay. Which part is best adapted to the trees and which to vines? The water level, I might add, is very close during the wet season and probably never lower than 6 feet down.—E. W. D., Merced.

Put the vines on the flat. They are hardier against ill-fortune and will stand soaking for two or three months when dormant.

Fig Trees and Ground Water.

To the Editor: Is it safe to plant fig trees on a sandy loam with water within eight to ten feet of the surface? Some say the water is too near the surface to be successful. Will the roots grow that deep, and if they would, would they rot off and so destroy the trees?—H. L. S., Coalinga.

It will be safe. The roots will not be injured unless the ground water should rise considerably nearer the surface.

California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau at San Francisco, for the week ending at 5 p. m., February 6, 1917.

STATIONS	Past Week	Rainfall Data		Temperature Data	
		Seasonal To Date	Normal To Date	Max'm	Min'm
Eureka	10	16.78	26.29	60	28
Red Bluff	00	11.14	14.73	72	28
Sacramento	00	6.54	11.48	68	30
San Francisco ..	00	10.16	13.38	70	38
San Jose	00	6.47	9.57	72	26
Fresno	00	5.23	5.49	68	20
Independence ..	00	.....	.....	.....	.....
San Luis Obispo ..	00	14.99	11.52	80	34
Los Angeles	00	9.89	8.79	82	42
San Diego	00	6.66	5.67	76	44

By
the Editor

QUERIES AND REPLIES

Inquirer Must
Give Full Name
and Address

Great Whitewash Expectations.

To the Editor: I have been advised to whitewash the trunks and crotches of my fruit trees with lime and bluestone to keep the bugs down and to save spraying with lime-sulphur. Heretofore I have each spring sprayed with the latter and have had no pests or diseases. I have over 100 young black walnuts whose trunks are becoming rough and it was suggested the whitewash on them would discourage bugs planning to make their homes on them and afterward migrate to the other trees. Do you approve of the idea, and if so, what proportion of whitewash and bluestone would you recommend?—M. B., Walnut Creek.

Stop spraying with lime-sulphur until you know what you are doing it for. One can get the spraying habit just as some people take castor oil—for their peace of mind. Both habits are irrational. Of course you will learn what pests are, watch for them and use such remedies as their several natures require when you see the first presence of them. Use a good durable whitewash on your smooth-barked tree stems to protect them from sunburn. Your rough-barked black walnuts probably do not need it. Treatment of them to ward off migrating insect is a fanciful consideration because it gives fancied and not actual protection. A proper mixture of lime and bluestone is the Bordeaux mixture for which you will find formula and directions in all your California horticultural books. It is a remedy for fungi and is seldom of any account for insects.

Layering Vineyard Fillers.

To the Editor: In my Malaga vineyard quite a few are missing. I have left one or two suckers next to the missing spots with the intention of running them underground to the missing places to be filled, but some of the canes are not long enough. Do you think I can graft another cane on a short one to make it reach the missing spot? The vines are planted eight by twelve. If not, what is the best way to start vine growing?—A. C., Dinuba.

Running canes below plow-depth and turning up the ends where you need new vines is an old French prescription—the value of which we do not know. It is designed to meet the difficulty of getting a new vine to grow in an old vineyard. Such a graft as you propose would take unless you get it so far down in cold wet ground that the tissue decays before becoming active. You might reduce that chance by leaving the trench partly open for a while. You will get a new vine in the vacancy all right as a rule, but whether it comes from the old vine or simply by rooting of the cutting you can only tell by digging. If the former, it will not be long helped by the old vine. Rather than do all the work involved in such layering we would dig good holes, plant rooted vines, mulch with manure, keep moist enough to force free growth and keep fruit off for a couple of seasons.

How About Millets?

To the Editor: Is it advisable to plant millet in Siskiyou county? I never heard of any being grown here. How does it affect horses? I wish to plant it for dairy cows. Is it a good cow feed?—S. N., Hornbrook.

If we knew what plant you mean when you write "millet" we might give an opinion, for we have quite definite convictions about at least half a dozen plants which are called by that name. Sometimes the sorghums are called millets and when that is the case we have more respect for the bunch. There are several plants which look like coarse grasses and are called Italian, Japanese, German, etc. They yield a seed useful in feeding small chickens and a coarse forage which cows will live on, but it is rather poor stuff. It will also do for poor horse feed provided it is fed before the bristly heads appear. They are rather bad for horses. There is another "millet" which is one of the water grasses, making our rice-growers so much trouble. On the whole, unless your own experience shows that some particular millet is good for some particular thing, we should try to forget them. They are all summer growers and afraid of frost, and when one has summer water enough to get a free growth of them he can usually do better by using the water to grow alfalfa, fodder corn or cow peas or some other tender plant which is worth many times more than any other millet we know unless it is one of the sorghums.

Spring Treatment of Alfalfa.

To the Editor: I have alfalfa, planted last spring. The soil having become considerably packed and there being numerous weeds among the alfalfa plants, would it be desirable to either disk or harrow the field? Considering cost, which would be preferable to spread over the field, cow manure, horse manure, or a good commercial fertilizer?—J. H. M., Menlo Park.

It is a good idea to disk lightly when the surface crumbles well. This will improve the packed cover and kill much foul stuff. The relative value of cow and horse manure depends more upon the way the animals are fed than upon the kind of animal. Usually horse manure is worth more because horses are more apt to be fed grain. Cow manure is "cooler," which means that it does not ferment so fiercely, but that has little if any relation to the fertilizing contents but to the different physical condition of the excreta. A good commercial fertilizer gives you a maximum plant food for the money, but the humus content of barnyard manure and its effect on the nature of the soil may make its actual value for top-dressing alfalfa more than its fertilizer content would show on analysis. If it is convenient, try application of each on different areas which you can compare next summer and let the alfalfa plant advise you as to which menu it prefers.

Death of Garden Grape Vines.

To the Editor: I have two dozen grape vines in my yard. All have been doing good until the first of last July two of the vines began to die at the end of branches and continued to die back till one vine is entirely dead and the other nearly dead. They had made a growth of 4 or 5 feet and were loaded with large bunches of grapes. What could be the cause? The vines next to and between them are healthy. Strawberry vines four feet away from one are doing well, so it cannot be

How the Smyrna Fig and Fig Insect Came to California.

[From a paper read at the Fresno Fig Institute by George C. Roeding of Fresno.]

Early Efforts at Introduction.—In 1880, the San Francisco Bulletin Company, through the efforts of G. P. Rixford, made an importation of fig cuttings from Smyrna and Asia Minor. Later, they made a second importation, in which the late Governor Stanford actively co-operated with them. These cuttings were distributed to their subscribers, but when the trees bore and all the fruit fell off, the people who had planted them concluded that they were worthless and the Bulletin Company was censured for its enterprise in this matter. The Bulletin people themselves were finally forced to the conclusion that they had been tricked by the wily Smyrnans.

In the year 1885, E. W. Maslin, who owned a property at Loomis, Placer county, California, raised a lot of trees from seeds of the finest imported figs and planted them in orchard form. In 1889, in an address which Mr. Maslin made before the State Fruit Growers' Convention, he stated that the trees had made a wonderful growth, bore an abundance of fruit, but had all dropped off without maturing. My father, the late F. Roeding, sent the foreman of our nursery to Smyrna, at a very heavy expense, to investigate conditions there and to bring back a lot of cuttings. These were planted in nursery rows in 1887, and in 1888 the first orchard of twenty acres was planted under my supervision. The orchard was gradually extended until in 1890 there were sixty acres. These trees were pruned, cultivated and irrigated up to the year 1901 without harvesting one single crop of fruit, due to the absence of the fig wasp.

Effort to Get the Insect Goes Wrong.

—The perplexing difficulties which arose in connection with the introduction of the fig wasp might have been avoided, and the many years which intervened before the valuable insect, *Blastophaga grossorum*, was finally established, might have been brought about much sooner had the man whom we sent to Smyrna devoted closer attention to the work he had before him instead of allowing his duties to be interfered with by other matters of a more exhilarating nature.

Doubt of Desirability.—During all this period I faced ridicule, discouragements innumerable, and even my father, as interested as he was in the subject, tried to prevail on me to dig the trees up and say "good-bye" to my fig folly. It finally resulted in his deeding the Roeding Place to me, for he feared that between the nursery business (which he regarded as the most hazardous on earth) and the fig business, that I would put him in the poor house.

The general doubt of the desirability of the insect is shown by the fact that in 1889, the late B. M. Le-long, Secretary of the State Board of Horticulture, in his annual report wrote as follows about "Caprification":

"It has often been claimed that 'the fig in this State does not set, that caprification is absolutely necessary, that the seeds having no kernels fully establish this fact.' If caprification is absolutely necessary, this question arises: 'Why do figs

produce and set their fruit as well as they do in this State without it?' * * * In many parts of Italy and the south of Europe, in olden times cultivators paid much attention to setting the figs by the method of caprification. This practice was much believed in, but is condemned by most modern scientific writers as absurd. Caprification, according to the experience of practical growers, is altogether a delusion, and many of the largest plantations of the Old World have continued to bear fruit without the aid of the caprifig."

Proof that Caprification is Indispensable.—On November 10th, 1891, I read my first paper on the Smyrna fig, reviewed my experiences and outlined what I expected to accomplish. In the previous year, in the early summer months, I had demonstrated to my own satisfaction the absolute necessity for caprification, to produce the genuine Smyrna fig. I gathered pollen on the end of a wooden toothpick, forced this through the eye of a Smyrna fig, and every fig thus treated matured its fruits, while others fell off. In the year 1891, in the month of June, I carried on the same experiment again, except that I improved on the original idea by blowing the pollen gathered from the Profichi crop into the Smyrna fig, by using a glass tube drawn down to a fine point, and inserting this into the eye of a fig. The interior of the fig was not injured by this method and the result was far more satisfactory. In October, 1891, I exhibited caprificated Smyrna figs in San Francisco, and I quote from an article in the Pacific Rural Press of October 10th, 1891, written by Professor E. J. Wickson, the editor:

"We enjoyed on Tuesday a call from Geo. C. Roeding of the Fancher Creek Nursery, who brought samples of his Smyrna figs from goose-quill caprification; also White Adriatic figs to compare with them. All were cured and packed in good style. The White Adriatic figs were as well cured as any we have ever seen, and handsomer than we supposed they could be made without processing and sulphur. They were, however, very inferior in appearance and notably so in flavor to the Smyrna figs cured in the same way. The Smyrna figs had plenty of well-filled seeds, pulp of a translucent character, and with more true Smyrna na flavor than we have yet found in a California dried fig. The White Adriatic had fewer seeds, pulp of a more opaque character, and flavor far less acceptable. These samples certainly showed that there is something in the cross-fertilization of the Smyrna fig at least. Mr. Roeding operated on about 150 figs this year with the pollen of the Caprifig. These perfected fruit; those not thus pollinated did not reach perfection. Mr. Roeding will proceed with his work in this direction, will introduce the *Blastophaga* on his own account, and spare no pains to reach a demonstration of the proposition."

Continued Effort Carried to Success.—In the eight years that followed, I carried on my experiments in artificial pollination by the blow-pipe method. Meanwhile I continued my efforts to secure the *Blastophaga*, and did during this period obtain live insects at several different times, but they invariably failed to establish themselves. Finally, particularly through the action of E. W. Maslin, who never lost interest in the subject, and with the assistance of the late B. N. Rowley of the California

Fruit Grower, the importance of the subject to the fruit interests of California was ably presented to James Wilson, U. S. Secretary of Agriculture.

It was referred to Dr. L. O. Howard of the Division of Entomology. It just happened that Dr. Walter T. Swingle, Agricultural Explorer of the Division of Seed and Plant Introduction of the United States Department of Agriculture, was studying in Italy on his own account at the time. It was through his great interest in the subject and the painstaking methods that he pursued in sending Mamme figs over in the month of March in the years 1898 and 1899, that in the latter year the insect finally decided, after so many years of constant and persistent work

on my part, to become domiciled in the new world, and small as it was, to make history for the fig, as well as to place California commercially as a competitor of Asia Minor in the production of the far-famed "Genuine Smyrna Fig."

In the year 1901 I made a trip to Europe and Asia Minor to personally investigate fruit conditions, and more particularly to see for myself how caprification, cultural and packing methods are carried on in Smyrna. I spent two months in Asia Minor in carrying on my investigations. I was appointed a Commissioner of the United States Department of Agriculture, and my work was very materially facilitated thereby.

The Claim of Prior Introduction.—Strange to relate, but in the year 1908, Mr. Rixford made a wonderful discovery, and he was ably supported in the theories that he advanced by Dr. Walter T. Swingle, for in an

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address made before the State Fruit Growers' Convention in 1910 at Stockton, these gentlemen were very positive in their declarations that this much-sought-after wasp, the *Blastophaga grossorum*, which had caused me so many sleepless nights, so many thousands of dollars, and such a tremendous effort, had been quietly reposing, undisturbed, in the Gates tree, about five miles southwest of Ripon. The tree was planted in 1867. From 1868 to 1908, according to the statements made in the address, this tree was colonized with the *Blastophaga*.

Shortly after this paper was read, I replied to it, fully explaining why I did not think the views expressed by the gentlemen already referred to were tangible. No reply was ever made to this article, although both Messrs. Swingle and Rixford have, from time to time, reiterated their views, claiming the insect was in the Gates tree from the time they claim it had been there, but offering nothing new to substantiate their contention. I still insist, as I did then, that the wasp became established in this Gates tree through colonies which I personally placed in the Caprifig trees in the neighborhood of Ripon and Modesto. The following is an excerpt from the article which I wrote for the "California Cultivator," of December 29th, 1910:

Another strange feature in connection with the Gates tree is that Mr. Watkins and others at Ripon, who have trees which are not much over five miles from the Gates tree, showed no signs of infestation until colonies of wasps were actually placed in these trees. How different has been my own experience! The year following the introduction of the insect on my place, it found its way into Roeding's Capri No. 3, growing on the vineyard of Mr. F. M. Roessler, five miles northwest of my place. I was not aware that the tree was growing there, and my attention was first drawn to it by samples of figs brought to my office in the month of March, 1900.

Apocalypse!—Poor *Blastophaga*, you for whom I worked and strived; is it possible that the ridicule I endured, the care of a sixty-acre fig orchard for a period of fourteen years without any returns until you came; the sending of a special agent to Arizona; the effort to secure one of your tribe from Mexico, through the recognized entomological explorer, Mr. Koebele; the plowing and harrowing I gave the U. S. Department

of Agriculture to awaken an interest in this subject; the investigations by Dr. L. O. Howard and his able assistant, Mr. A. E. Schwartz, in fully elucidating the most complicated entomological and botanical problem of the day; was all for naught? Is it possible as a poor despised worm, ant and fly you have resided in Stanislaus county these many years? Oh! that I could believe it!

[At another time we will give Mr. Roeding's practical conclusions concerning the present status of the Smyrna fig industry in California, to which the foregoing was the dramatic prelude.—Editor.]

In Conclusion.—In all fairness to myself, I consider it the duty of Messrs. Swingle and Rixford to present more conclusive evidence than they have succeeded in producing thus far, in connection with the establishment of the fig wasp in the Gates tree.

I wish to add that it is a great source of satisfaction to me to have growers claim so many superior virtues for this little wasp now, which for so many years occupied the position of an interloper in the fig industry.

SUDAN GRASS RABBIT TRAP FOR ORCHARD.

[Written for Pacific Rural Press.]

Rabbits girdle trees, and many are the efforts to prevent them. Early last spring, O. Bertinsen of Colusa county read an item in Pacific Rural Press about an almond grower who had protected a large young orchard by a few rows of Sudan grass. Mr. Bertinsen bought about five pounds of seed and drilled it in four rows nearly around his 46 acres of three-year almond trees. There were no other young trees close, and the foothills a mile away contained "lots of rabbits." The seed was planted May 9 and by mid-July most of it on one side was waist high and some shoulder high. On the other side the ground was poorly prepared and rabbits more numerous; so it was eaten down more. Every morning Mr. Bertinsen made a trip around the orchard with a dog, which killed the rabbits found in the grass. The trees were not touched because rabbits preferred the sweet grass. A gun might have been as effective as the dog.

Berry Outlook Good.

[Written for Pacific Rural Press by M. J. Moniz, Sebastopol.]

The annual meeting of the Sebastopol Berry Growers, Inc., was recently held in Sebastopol, being one of the largest attended meetings of that association which now numbers over 500 members. The annual report of the auditor showed that the organization is in fine standing financially and that in addition to handling the members' berries it is doing a large mercantile business. The 1916 season proved one of the best the growers ever had, all berries selling for a high price both in the East and for local cannery purposes.

During the season some 61,320 crates of berries were shipped to Eastern points, as far as Chicago, and 1977 tons were turned in to the canneries, making a total of 2600 tons handled, the season being a light crop one. The total volume of business done amounted to over \$315,000 and a large dividend will be paid to the growers on their stock.

President Wm. Hotle stated at the meeting that from direct information given him from large cannery representatives growers are certain of receiving a still better price for their berries the coming season, which is expected to be between \$55 and \$60 per ton. A large portion of the coming crop is already contracted.

As there is a large amount of acreage of berries being grubbed out yearly to give room to the fruit trees which are planted together, and realizing that there is a comparatively small acreage of berries being planted out, it would seem certain that a profitable future is in store for the berry industry, when taking into consideration the new markets that are being continually developed.



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Cows Help Peaches---Both Make Cash.

Cows were bought and bedded with straw to provide humus and fertilizer for the orchard, in which alfalfa is grown for the cows and to provide humus and fertilizer.

[Written for Pacific Rural Press.]

Commercial fertilizers did all they could be expected to do in C. H. Schmidt's peach orchard in Fresno county; and still the trees did not act satisfactorily. The soil needed humus daily. Commercial fertilizers could not exert their best effect without humus; and the soil could not hold moisture. The fertilizer had usually been three or four per cent nitrogen in nitrate of soda and blood meal, 10 per cent phosphorus, and 8 per cent potash. A ton of this per acre of 100 trees had been regularly applied in winter so rains would carry it down. Probably a higher proportion of nitrogen would have shown better results; and probably a large part of the other constituents were being simply stored up in the soil for lack of nitrogen to balance them. These fertilizers were probably not carried below reach of the tree roots, for "lots of tree roots have been found here 10 feet deep."

The trees had begun to show the need of something before 1914, to give the yields that have made this eight-acre orchard of Phillips and Tuscan clings eight years old, famous around "The Home of the Peach." Now they average over 100 tons per year, which are sold under a 10-year contract at \$25 per ton to the cannery less than a half a mile away.

Two Lines of Humus making have been employed. Alfalfa and barley are sown in strips about 10 feet wide in the centers, and manure is applied on the strips remaining in the rows. Lots of manure was hauled from town, and a 20-cow dairy was put in two years ago to furnish manure on the place. Mr. Schmidt estimates that he gets about a ton a day from the cows, young stock, mules, and horses.

Handling the Manure.—None of the manure is lost. The cows stand on deep straw bedding which absorbs all the liquid manure so it can be handled. A cement floor helps save it until the straw absorbs it. This strawy manure is hauled every day to the peach orchard except when the ground is too soft or during fruit picking. When the ground is wet the manure is stored in a concrete-lined shallow pit handy for the wagon. During fruit picking, it is applied in deep furrows on another piece of land on which green feed is grown for the cows. A heavy galvanized-iron tank-wagon is used, for the same reason that the pit is concrete lined; when the strawy manure stands awhile, some of the liquid part settles free. This manure lying in the orchard, catches leaves too, and holds them from blowing away, retaining much of the soil fertility and adding humus. It is especially rich in fertilizing elements; for the cows' feed is chopped alfalfa, beet pulp, and mill feeds, most of whose fertility elements are found in the manure. Being strawy, its use on light land would be objectionable if plenty of water were not used; but Mr. Schmidt is a crank on watering, as will be discussed below. Moisture soon enables the straw to be turned into humus.

Manure is not applied direct to the alfalfa, for the straw would mix with the hay and not get into the soil to rot; manure would make the alfalfa distasteful to cows. In warm weather, too. Mr. Schmidt thinks it would burn the alfalfa if applied heavily. Its fertility reaches the alfalfa, however, as explained later.

Barley was sowed about Sept. 1, eight or ten pounds per acre, as thin as it could be flipped broadcast with three fingers. It grew a foot tall before frost, and was pastured down close by the cows to prevent its choking the alfalfa, for it stood very freely.

Alfalfa also was seeded with a sort of drill, 10 pounds per acre, but in 10- or 12-foot strips as mentioned, so it is as thick and about 20 pounds per acre in the open. This Mr. Schmidt expects to cut about May 1 when well along in bloom. Much of it will be chopped and fed green, the object of letting it mature well being to avoid scouring the cows by feeding "slushy" green alfalfa. Some alfalfa hay is fed with it. This is bought and chopped.

Much of the alfalfa grows waist high, though when the foliage gets dense, it is almost like a house under the big trees, and the alfalfa grows spindly. "I have plowed the alfalfa time and again, when it was all the mules could do," says Mr. Schmidt. It cultivates the subsoil with its roots, and absorbs or distributes the alkali which is more or less prevalent in this district.

Commercial fertilizers containing potash and phosphorus have been regularly applied until last season. It was omitted then in the belief that a surplus of these elements has been already supplied. Tree growth and crops will be watched to see if this is true.

Irrigation Distributes Fertilizer.—In common with most of his neighbors, Mr. Schmidt irrigates by flooding. The checks are made according to the lay of the land so he can turn in six inches of water all over a check; and then turn it into another check. This flood water becomes a yellowish brown on account of the fertilizer in it. This is distributed unobjectionably over the alfalfa, too.

Ditch water is used freely at 75 cents per acre per season for all that he wants. A pumping plant was installed when the orchard was planted, to provide water in the fall when the ditch supply may be minus.

Frequent Irrigation.—Most people irrigate two or three times per season, and the trees often suffer for water. Mr. Schmidt irrigates five times per season; and insists on keeping the lower strata moist. Otherwise he would expect a light crop or injured trees; for digging has shown the lower soil to be full of root feeders. Cultivation also is used freely to save moisture along the rows. But clean orchard cultivation is abhorred as the destroyer of humus.

Some places take more water than others, for while the soil is generally uniform as far down as you



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would care to dig, it is mostly light ashy land washed down from the mountains and contains a mixture of feldspar, quartz, silt, etc., in varying degrees in streaks more or less noticeable.

Fall Irrigation caused Mr. Schmidt's friends and neighbors much uneasiness for his sake. They said it would kill the trees; that it was unnecessary. But he says it is very essential to peach growing on rich soil. As soon as the fruit is picked, the trees look dilapidated, the foliage is pretty much dried up, and the trees are nearly dormant. Their fruit buds have started, but are not developed into good vigor ready for a reasonably sure setting of fruit next spring. An irrigation now starts new vigorous growth on the trees in a few days. If fertility is there and kept available by enough water, the fruit buds become fat and strong, and the terminal buds mature well. Without water, even a vigorous tree would stay dormant and not have circulation enough to develop the fruit buds satisfactorily.

If trees are not vigorous, and fertility is not supplied, this fall irrigation and the growth it starts would exhaust the tree more or less; and if oft repeated may kill the tree. Many trees die anyway, for lack of water during fruiting and in the fall.

Pruning was done to get early bearing; and this did not hurt the trees, for they were well nourished. The land had been manured heavily. Otherwise, his system of cutting off only the terminal buds of the young trees and thinning out what was necessary, would have resulted in spindling trees. The 70-ton crop claimed for the 8 acres of three-year trees, indicates his success in that direction, while the tall, stocky, abundant main limbs covered with heavy new growth and foliage require heavy pruning now. They are well spread and the centers kept clear of all but short growth; for daylight, inside and out, is necessary for permanent results. Fruit is encouraged to the limit on the lower parts of limbs; and none of them are sunburned.

The Dairy.—High grade Guernseys and Jerseys are bred to a purebred Guernsey bull. It is intended

to work into purebred Guernseys. They are kept in the barn during bad weather and fed liberally on the balanced ration mentioned. An expensive sterilizer has just been secured to insure clean cans. A steam boiler packed in asbestos, and burning distillate, supplies the heat for washing and sterilizing utensils. Pure raw milk is bottled in a light, screened and cement-floored dairy house. It is sold to a private trade which has been worked up in the nearby town.

Mutually Helpful.—So the cows furnish milk for part of the cash income, and manure for the orchard and alfalfa. The orchard also furnishes cash income, and feed for the cows. About \$15,000 worth of fruit have already been sold from the trees, and the milk money from 20 cows would seem enough for one man. Thus is illustrated Mr. Schmidt's purpose to show what can be done by intensive farming of a small piece of land.

CALIFORNIA PRECOOLING PLANTS.

One of the most interesting papers read at the Illinois State horticultural convention was that by Prof. John W. Lloyd of the University of Illinois, in which he explained California's method of precooling fruit. An outline may be interesting to readers who are not directly engaged in fruit handling:

A number of precooling plants have been established in California, and every year many carloads of fruit are precooled preparatory to shipment. There are two types, car-precooling and warehouse precooling. In the former the freshly packed fruit is loaded into an uniced refrigerator car and hauled to a central precooling plant where cold air is forced through the cars for from three to five hours. Under this method the temperature of the air forced into the car is sometimes as low as 20 degrees, but it does not freeze any of the fruit unless treatment is continued too long. As soon as this process is completed, the car is iced in the usual way and shipped.

In warehouse-precooling, the packed fruit is stored up in tiers in a thoroughly insulated room and there subjected to cooling by means of cold air forced from a conduit through numerous small holes in the floor. In the case of oranges, the desired temperature is about 35 degrees and requires 36 to 60 hours' treatment, depending largely upon the temperature of the fruit when put in. After the fruit is cooled it is loaded into a car that has been previously iced, the car is closed tightly and in the spring shipments, is not re-iced in transit. Eleven days are required for cars to reach New York, and in the month of May usually arrive with bunkers one-third full of ice and fruit in fine condition. These precooling plants, which depend upon ammonia coils and refrigeration machinery for reducing the temperature, require a large outlay of capital, and workers in the Department of Agriculture have devised equipment for a small precooling plant in which the air is cooled by forcing it through a mixture of crushed ice and salt. Such a plant is used by the Sebastopol, California, berry growers' association.

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Mr. W. A. Hayne, Box 461, Marysville, Cal.

Dear Mr. Hayne: Answering your kind favor of the 15th, I am enclosing herewith photograph of some of this year's fruit on the Fogg grove, and you will note that they are above the average Mission. We also were able to harvest this entire crop before the frost, which shows that they are early ripeners.

We will be glad to keep in touch with you on this matter, and if we can be of any further service, don't hesitate to let us know.

Yours very truly,

I propagated the Fogg orchard thirty years ago. The origin of the Fogg trees was directly from the old Mission at Santa Barbara. The trees I have now for sale are full brothers to the Fogg olive trees, and like the Fogg trees, they are all propagated from the large size cuttings. W. A. HAYNE.
Box 461, Marysville, Cal.

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SAN JOSE, CAL.

Alfalfa Helps Apricot Yield.

[Written for Pacific Rural Press.]

A thousand dollars for the crop from about 300 ten-year Newcastle apricot trees in Imperial county is last season's record for E. H. Erickson. Three reasons for this are emphasized.

Alfalfa among Trees.—The trees bore a big crop their fifth year. From the sixth year, the crops diminished in spite of heavy manuring. The ground under most trees was covered thick with tons of rotted horse and cow manure, but some trees were left without it. No difference was noticed.

A row of old trees along the edge of an alfalfa field, however, had always borne heavy crops regularly. So two years ago, alfalfa was planted in the orchard. It made a good stand, was cut, and pastured. Last spring it was plowed up about six inches deep. Shallower plowing is impracticable in alfalfa because "you can't hold the plow less than six inches deep." It came up again, flourished all last season in a fair stand, was cut four or five times in little batches; and within the rows it went to seed so that late in January, 1917, a multitude of new plants were coming up. It is furnishing pasture for the family cow. For the sake of cultivating the trees, it will be plowed again this spring, and expected to flourish again. "The alfalfa seems to be just what the trees need," says Mr. Erickson. It furnishes nitrogen, for much of the tops are turned under and the cut-off roots decay, the lower soil is permeated with humus; and perhaps the shading of the ground has something to do with it.

Results Encouraging.—The new wood growth the past season has averaged six feet long, fat, plump, with as many as four sets of fruit-laterals and lots of fruit buds on the main stems of the new growth. These fruit buds are as fat as can be found outside the Valley. They are in striking contrast with almost every other orchard in the Valley, for most of the rest have peaked little fruit buds on slender thin short little weazened-up twigs, scarce and discouraged. Mr. Erickson's trees are ready for as good or a better crop than last year.

Irrigation is given much of the credit for the crop and wood growth. High borders surround the checks, and the water was run into them nearly two feet deep around the trunks of trees all day long once last fall; for Imperial Valley normal rainfall is only two or three inches per year. Next morning the water was all gone. The soil is light and the subsoil lighter. Mr. Erickson has dug five feet deep and was then able to push his shovel handle deep into the subsoil. With a retentive subsoil, he points out, this might easily be too much water.

Throughout the growing season, he gives the trees water whenever they need it, which is likely to be every two weeks. Only when in blossom must irrigation be withheld. The orchard was to be plowed early in February and worked down, and then after blossoming, given a good soaking.

"It is my experience here on this

soft porous soil," says Mr. Erickson, "that the more water I give the apricots after they are well set, the earlier they ripen. Last year was an extra early season; and my first shipments of apricots went out late in April."

Pruning.—The third reason for Mr. Erickson's good crop of 1200 or 1400 crates last season is his system of pruning. This was done late in January, 1917.

The limbs had been cut back rather short from early life, so that the years can be easily counted by the crooks in them. They have, however, been kept thin enough so that laterals now growing out of the wood of all the years except the first have thrifty new growth with plenty of fat fruit buds. Practically all of them are well matured to the tip, not being shriveled at the ends for lack of nourishment.

An important trouble with the training of young trees in Imperial Valley, says Mr. Erickson, is that in their first years they were cut too long and have not adequately shaded themselves. Their bark got hard and black-and-blue. Fruit wood grows only in the top; and the fruit there is small and inferior.

Though he was cutting back the new wood-growth severely, not even leaving fruit buds or laterals on it in most cases, all laterals from last year's and older wood were left entire, except where thinning was necessary.

The extraordinary fruit-wood growth down all over the main limbs not only shades the bark from sunburn; but it bears fruit as juicy and fine and considerably larger than that in the tops of the trees where more sunshine gives it redder cheeks.

The general plan was to keep the center open, and to leave only one shoot of new growth at the end of the two-year wood where several usually grew this past season. Since the trees are pretty big (some even touching across the 24-foot space between them) only the vertical shoots were saved; and this year these were cut back to about eight inches, below the first burst of laterals. Shoots leaning outward were cut off, even though plumper and stronger than the vertical ones left.

DATE PLANTING.

No date offshoots from abroad are available for planting and there are practically none from California date gardens. Seedlings, however, are quite numerous. Planting such has already produced more good varieties in 10 years than were produced in the old country in 300 years, according to Bruce Drummond whose work in charge of the Mecca and Indio Government date experimental stations has contributed most of what Californians know about date growing.

It is reliably estimated that 5 per cent of the total orange crop of the Redlands district was frosted but much of the district escaped injury. Frost fighting preparedness would have been a good investment for those who, as it proved, were in frosty locations.

NOW is the Time to Fertilize Fruit Trees

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PLOWS ORANGE COVER CROP IN JULY.

[Written for Pacific Rural Press.]

Much of the orange soil on the ridge southeast of Redlands is heavy and likely to harden when it gets dry. It seems to be decomposed granite without enough humus for good orange growing. Melilotus winter cover crops are generally grown, with clean cultivation through summer. It seemed to W. N. Barlow, who has charge of the work on H. H. Ford's ranch, that clean cultivation and sunshine through the summer was burning out much of the humus put into the soil by winter cover crops. Moreover, by plowing them under early in spring, he was not getting the full amount of humus. So last year he selected the worst two acres on the top of the ridge and allowed the melilotus in alternate centers to grow until all the green color was gone and all possible raw material for humus was made. This was plowed under after the July irrigation, and Mr. Barlow says the trees very soon showed a marked advantage in leaf color and growth over those in rows next to the two acres. He also notices considerable improvement in softness of the ground. This piece, which was the worst on the ranch to wilt in the summer, now takes water so that it will be safe to leave melilotus on the whole area to mature next season. He says that if he had left all of it last season, the water would have run through and off from its hard crust with the trees wilting for water even at the time. Working this land in connection with irrigation does not keep it in good shape; for where it takes 50 inches of water to cover an area in summer, by late fall it is so cemented that 10 or 15 inches will cover it and of course the roots get very little benefit. In spring, after winter rains have soaked it, on this particular piece, water soaks away too deep, for there is not enough humus to hold it where roots can use the water. Of course where not enough water is available, as seems to be the case here, it should all be permitted to penetrate to tree roots and not beyond them. This, the extra humus is expected to make possible. That the trees on the two acres are not this February in much better shape than their neighbors, is ascribed to water shortage all around. But that they are in equally good shape shows greater improvement than their neighbors.

CULTIVATE AFTER RAIN.

Two neighbors in Fresno county plowed their vineyards at the same time just before the last rain last spring. One of them didn't touch his vineyard, waiting for another rain, till about five weeks later. Then he ran the water through, and "had an awful time replowing."

The other man, Mr. Pickup, ran a revolving harrow over his vineyard as soon as possible after plowing; and three weeks later when he replowed, most of the vineyard turned up moist dirt. He cultivated eight or ten times before ripening and got a good crop of Muscats.

"This heavy land," says he, "must be worked after every rain or it will bake hard and then will not take water unless the water is backed up and held to soak."

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James Mills Orchard Corp.
Hamilton City, California



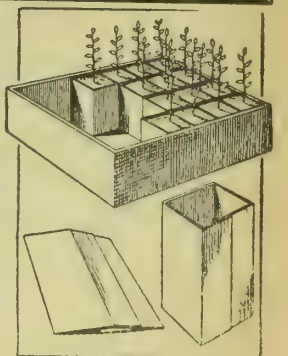
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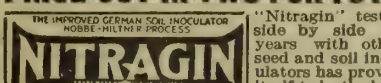
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Turlock Cantaloupe Planting and Culture.

Unusual system of planting reduces damage to vines at picking time and saves labor. Careful culture gives over 4,000 crates from less than ten acres.

A heavy yield of fine cantaloupes right up to frost is the unusual feature of Geo. D. Mead's farming in Stanislaus county. It is due partly to his system of planting and partly to his way of picking. From 9 or 10 acres he sold over 4,000 crates last year through the Turlock Merchants' & Growers' Ass'n.

Mr. Mead and his family learned a lot about cantaloupe growing in their first year. They lost half of that crop due to various causes.

Early in January, 1917, they were plowing ten acres for the 1917 crop. This winter plowing was eleven or twelve inches deep to get a soil reservoir for winter rains and to turn under the manure, which is applied thinly all over rather than heavily on a part each season. Straw manure is likely to "burn out the ground" in this sandy soil and should be worked in well and deep. The next plowing is only six or seven inches deep. This is done early in March just before planting time, which would best be about Mar. 15 if the soil is warm and the rains over. Last year the Meads planted just before the last hard rain. The crust which formed needed loosening even at expense of plants. A couple of little spike harrows hitched to a pole fixed two rows at once.

Rows Uniquely Laid Out.—In their first year, the Meads laid out their rows in the customary way, omitting every ninth one for a driveway for convenience in picking season. Then the pickers, two or three of whom were hired, but most of whom were in the family, had to pick as far as the sacks they carried would hold the melons, then climb over several rows to unload into crates in the drive. This damaged the vines and reduced the later settings of melons. It also wasted the pickers' time.

To avoid this loss, last year no rows were omitted for drives, but the drives were laid out with a harrow, crosswise of the rows. They were put just far enough apart, about 10 rods, so that a picker commencing at one drive would pick a row and arrive at the next drive with his sack full. It would be dumped there, and he would proceed on across the field.

In their first year the Meads had inferior varieties which ripened all at once and got soft, so nearly half rotted before they could be marketed.

"Pollocks 25 Rust Resistant" seed from Rockyford was supplied last year by the T. M. & G. at cost to its members. This was \$1.25 per pound; and two pounds were supplied per acre, though Mr. Mead thinks a pound is enough, barring unfavorable weather or loss of seed by pests. Only this variety is desired by T. M. & G. because they need uniform melons on which to build and keep their reputation. Their men had inspected the Colorado fields and selected those bought for seed last season.

Sprouted Seed.—Much or perhaps all of the seed was sprouted before planting, but Mr. Mead points out that this practice is fraught with danger. If seeds are kept too warm, they are forced too quickly; and if the tender sprouts get longer than just a nib on the seed, they are likely to break off and the seed dies. If at the right stage of sprouting, the weather and ground are cold or the weather rainy, obvious results follow.

The seed are put in a sack, soaked about 12 hours, flattened out not over an inch thick so they won't overheat, and buried in sand. They sprout in two or three days, depending on the heat, and must be planted at once. The field is harrowed two or three times while the seed are sprouting.

Planting.—Seed were planted on the level in rows about six feet apart by machine last year, but by hand the year before. The machine uses more seed, but is so much faster that neighbors borrow the Mead planter when they are not using it. Some folks use a sweet potato planter. Any machine requires one person to drive and one to work out the seed. The Mead machine will be described elsewhere. It drops the seed thickly in rows, not in hills. The straighter the rows, the easier they are to cultivate and the easier it is to cut out volunteer plants from the undesirable varieties previously grown.

If plants are very thick, they are thinned with a hoe as soon as they come up; but later if not so thick. The final thinning comes about June 1 when the vines average a foot long, showing which are strongest. These are left as nearly as convenient three feet apart.

Irrigation and Cultivation.—If continued cultivation does not keep the vines growing, they probably need water. This was given once last season through a furrow in each center. Plenty of time was allowed for a thorough soaking, but no water was allowed to touch the plants, because that would bake the soil around them. Several rows were irrigated at once with a small stream. Within two or three days the ground was cultivated and the vines soon showed better growth. The first year the irrigator would fill a ditch or two and then run the whole head into the next one or two, but that system did not supply enough water and consequent vine growth. About two more cultivations were given before vines prevented.

Nurserymen report sales very heavy and some lines cleaned up. One large company states that they have sold their entire stock of pears, apricots, prunes, nectarines and almonds. Apples have been above the

average in demand, cherries have been slow in moving, peaches also slow, but there is some demand for clings and early sorts. Good call for table and raisin grapes. Ornaments of all kinds are selling well.

LAST CARLOAD THIS SEASON BOLTON ORCHARD HEATERS

WILL ARRIVE
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PROTECT YOUR CROP
THIS SPRING
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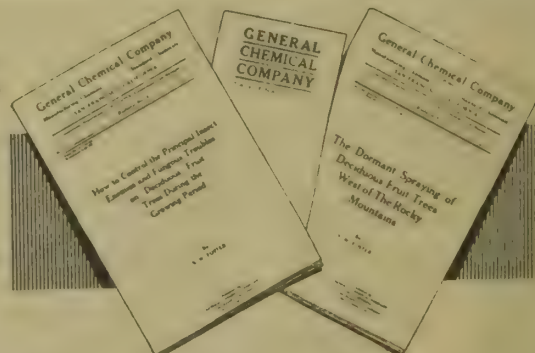
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E. J. Chubbuck Co., Dept. B San Francisco, Cal.

That Dose of Gypsum.

To the Editor: In your issue of January 13th you suggest a dressing of gypsum to alfalfa at the rate of 1000 lbs. to the acre. Is not this a printer's error and should it not read 100 lbs.? I ask this as it is a most important matter and I have never heard of such quantities being recommended except to overcome the poison of black alkali or by salesmen. Though I cannot recall the many interesting experiments I saw at Rothamstead 30 years ago, it has been firmly implanted in my mind and substantiated by practice that nitrate of soda and gypsum are both in the nature of stimulants. They leave nothing desirable in the soil but take away from it.

Nitrate of soda, of course, gives immediate nutriment to the plant and robs the soil for the next crop unless other permanent ingredients be applied afterwards. Gypsum robs the soil if applied in large quantities and gives nothing. I think, from one to four hundredweight of gypsum applied during a dry spell on any of the legumes or alfalfa would be beneficial. More than that will result in dilapidation no matter how vigorous the stand or how rich the ground. We are all trying and trying to better the conditions of our soil—the most valuable in the world—to give it more humus and nitrogen, to make it more friable with judicious applications of lime and careful working. Our experiment stations are doing splendid work, but they need years behind them yet. Because splendid immediate results are obtained by the use of gypsum our farmers should be warned to use it with caution and not abuse it. Gypsum does best on light, sandy or gravelly loam and not so well on heavy soils unless they have been well limed beforehand.

We have not yet learned how to conserve our stable manure satisfactorily in this dry climate and we are all trying our best to reduce loss from exposure and firefang. Here is where gypsum is most help and where its use can be fearlessly advocated, i. e., as an absorbent and fixative for the ammonia. It is very useful to keep also as a dust for the

chicken houses. Here again it is said to fix ammonia in the hen manure where the use of lime would release it.

J. J. F.

Napa.

[The prescription was based upon the (at least tentative) demonstration by Reimers of the Oregon station that sulphur is often a good plant food for alfalfa and sulphur can be had from raw sulphur or from gypsum or from superphosphate. While it is of course true that gypsum does act upon potash and set it free to be used by a plant or washed away by drainage, it can be hardly held to rob the soil, because potash has a way of its own of resisting washing out. As for leaving anything in the soil, gypsum leaves lime, which may or may not be of much value. In some cases the plant may need it directly as a plant food or indirectly as a promoter of bacterial action in the soil. On the whole, gypsum now appears to have more value and less injury than was held at the earlier time to which you allude. Still your point is perhaps well taken that 400 lbs. per acre would be a wiser amount than 1000 lbs. You are right about the superior desirability of plaster on lighter soils, because gypsum is apt to increase acidity in heavy soil for which lime and not lime sulphate is the corrective.—Eds.]

About 5,000 carloads of cantaloupes were shipped from some 8500 acres in Imperial Valley last year according to Horticultural Commissioner F. W. Waite; and the nearly 12,000 acres signed up this year are expected to yield about 8,000 cars. If plans go through, the total shipped out will be considerably less than the yield; for it is hoped to prevent shipment of inferior melons this year by county ordinance if the State Legislature fails to act satisfactorily.

Agricultural Bills Introduced.

Interest centers in various bills affecting the office of State Markets Commission. One bill calls for the repeal of the commission because of a doubt as to its continued existence, while two other bills would enlarge the powers of the Market Director.

A bill introduced into the assembly specifies the manner in which fruits and berries of many kinds may be packed.

A bill relating to land ownership and settlement will provide a way by which those entering on colony lands may have a lien of some equity in the land.

In his eighth biennial report Dr. Chas. Keane states that to accomplish the work which the law calls for his office will need \$70,000 instead of \$10,000.

It is reported that reclamation and flood control will be big issues at Sacramento this session.

A bill has been introduced which would prohibit the sale of eggs in bad condition and their use in manufactured products.

A bill providing that no foodstuffs of a perishable nature be kept in storage for more than 90 days.

Drainage districts organized under an act of 1903 would be validated by passage of a drainage bill introduced.

A seed commissioner with a salary of \$2400 per year whose duties would be to establish the purity of agricultural seeds is provided in one bill.

On request of 15 per cent of the qualified voters of a district a county free market would be established, according to another bill.

An appropriation bill for \$800 was introduced to defray expenses in making an official search for an insect to destroy beet leafhopper.

A bill introduced enlarges duties of county horticultural commissioners to compel eradication of plant diseases or animal pests and allows filing a lien on property to cover expense.

Companion bills proposing the establishment of a land settlement board of five members to promote better agricultural settlement and to enable the State to acquire 10,000 acres for colonization purposes were introduced.

A bill asking for an appropriation of \$150,000 for the establishment of a University Farm in Southern California.

The Imperial Valley Agricultural Assembly this year is to be held Feb. 10 at the annual meeting of the County Farm Bureau. Dr. Elwood Mead and Director Forbes of the Arizona Experiment Station are among the programmed speakers.



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Torrens Title System and Farm Loans.

[Written for Pacific Rural Press.]

The farmers in this part of San Joaquin county are becoming much interested in the "Torrens Title System." In fact plans are being formulated whereby an organization will soon be effected, and immediate steps taken to pool their interests that will materially redound to the financial benefits of all the property owners who take advantage of this movement.

For the benefit of those who may not have become sufficiently interested in the law to familiarize themselves with it, it might be of interest to make a brief explanation of its purpose and how it works.

The Old Way with Titles.—We have in this country two different methods of dealing with land or property titles. The first system, and the one most generally used, is the recording system, of which most property owners are already quite familiar. The second one is that of the Torrens System. While this is not a new system, yet, it is not generally in use, although many of the Eastern States are using it quite extensively. In this State it is being put into practice quite generally in the Southern part, and leading judges and attorneys pronounce it a decided success. Just why it has not been put into practice in Northern California more than it has is probably better known to the present abstract companies who have all these years reaped a fat harvest from the property owners.

The Torrens Way.—The Torrens System is a system under which all instruments affecting title and real property are filed with the registrar and proper notation made by him on certificates of title kept by him. In brief, the Torrens system is a method that does away with the expensive and long searches of title by providing what is practically a land index in the office of the registrar of title. All land brought under the Torrens system is immediately indexed, not only according to description of the property, but also according to the name of the owner. For every parcel of land there is an original certificate of title in the registrar's office; that certificate of title shows the condition of the title to that property and is always up to date. By examining the certificate, which is a decree of the State of California, vesting the title in a certain individual, one can ascertain in a few minutes the exact condition of the title to the property and can learn whether or not there are any mortgages, liens or incumbrances of any kind against it, the names of the holders of those of adverse interest, and their addresses, and also the amounts of such liens or mortgages. When property is transferred, the seller, or the buyer in his behalf, merely files in the registrar's office his dupli-certificate and his deed to the purchaser, and the registrar cancels the old certificate and issues a new one to the purchaser. This requires but a short time and costs the purchaser only \$1.00. When property is mortgaged the owner presents the duplicate certificate and the mortgage at the office of the registrar, who receives and files the mortgage and makes a proper note thereof on

both the original and duplicate certificate; this costs only fifty cents and requires but a few minutes of time. The certificate, as to all people who act upon it in good faith, is conclusive evidence of the title to the property, and behind it is the guaranteed fund provided by the Torrens law to protect any person who might suffer injury by reason of any mistake that might be made in the certificate. With every transfer of land a new certificate is made out, with the result that the title is always up to date, and one wishing to know about it does not need to go back to the original source of the title, or make anything in the way of a long search.

How Title is Determined.—The method by which property is brought under the Torrens system is as follows: Property is registered under the Torrens law by filing a petition in the Superior Court of the county in which the land is situated, requesting said court to determine the title to that land and order the same registered. In this State, any number of owners, and any number of parcel is less than it is in those united in a petition. The result of this provision in our law is that the cost of registering any particular parcel is less than it is in those States where each owner must bring a separate petition. After the petition is filed the court refers it to an examiner of titles, who searches the records and reports back to the court as to the condition of the title to the property. The court then orders notices to be given, which is done by publication in some newspaper of the county, and also by personal service on the owners of the adjoining lands and on any who hold interest in the land that is being registered. After notice has been given, a day of hearing is set at which time the owners testify as to the way in which they acquired title to the property and whether or not there are any liens or mortgages against it.

After hearing, the court signs the decree that establishes the title to the property and the registrar makes out the certificate according to the facts set forth in the decree.

The Difference in Cost.—One of the advantages of the Torrens system over the old recording system which is chiefly used in this State, is the difference in the value of the certificates. The certificate of title one gets from the ordinary title companies merely guarantees that the records were correctly searched and that guarantee is only good for two years, which means that, if because of any fact that arises outside the records, as is often the case, the title is no good, or if some mistake, even in the search of records, if after two years from the date of the certificate, the injured party has no recourse whatsoever against the title company. It is not at all uncommon for persons to lose their property by reason of facts outside the records that are never covered by the title company's guarantee.

Guaranteed by the State.—The certificates obtained under the Torrens system is not merely a statement to the effect that a search of the records shows the title to be so

and so, but is a statement from the State of California, vesting the title in a certain individual and behind that statement is the guarantee of the State to protect any person who might in any way be injured by reason of any mistake or error.

In other words, in case the property owner loses his property through an error of the title companies he has no recourse whatever, while under the Torrens title, the State pays him the amount of the loss he has sustained by reason of an error made in the title.

Again, there is a material difference in expense and convenience of the two systems. The initial expense, by reason of the fact that companies have been organized for the purpose of registering property under the Torrens law and are able to combine in one petition anywhere from one to one hundred or more parcels, the

initial expense of getting one's property under the Torrens system is in few cases greater than the cost of getting an ordinary certificate of title.

The registering of property under the Torrens system wipes out all the old clouds on the title that do not really affect it, and yet are inconvenient every time a new certificate is required. In other words, the title is given a new birth when brought under the Torrens system.

When property is registered the question of whether or not it is community property is determined at the time, thereby preventing perjury and fraud frequently committed under our present system, especially in probate matters.

When property is registered under the Torrens act, all people who have any interest in it are from then notified whenever any street liens, or



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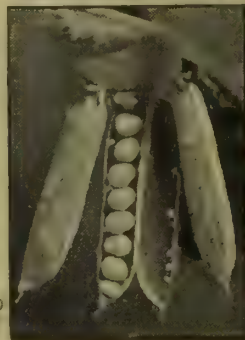
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Hens of any kind are filed against it.

Leading attorneys in the United States who have made a thorough study of the Torrens law have unanimously recommended it as a great improvement over the old system and have decreed it to be constitutional. In every State where the Torrens system has been questioned before the Superior Court of the State, its constitutionality has been decreed. Justice Holmes of the Supreme Court of the United States; Ex-Justice Hughes, and the Hon. Chas. C. Tarry, President of the American Bar Association, all have decreed the Torrens system constitutional.

Relation to Farm Loan Business.
—Thus we find ourselves, upon investigation, in possession of a law enacted for the purpose of benefiting

us, but of which we have not yet taken advantage.

Apparently, in this part of the State at least, the property owners are awakening to their privilege. With the advent of the Federal Farm Loan Bank, and the birth of the different Farm Loan Associations throughout the State the old and expensive system of title searching is doomed to be relegated to the rear. Let the property owners take hold of this, their privilege, at once, get in touch with the different secretaries of the National Farm Loan Associations of their immediate districts, and arrange to get under the Torrens system of obtaining title to their property.

J. B. Jorz,
Secretary of North San Joaquin
National Farm Loan Ass'n.
Acampo.

Early Sweet Corn.

Sweet corn planting is on, Feb. 1 to 15, in Coachella Valley. R. R. Cheatham is one who makes a neat sum from the Early Adams variety by shipping to the Los Angeles market. From four acres last year he averaged 30 cents a dozen for the whole crop of over 3000 dozen ears.

He drills 10 pounds of seed per acre in rows three feet apart on ground previously flooded and worked down fine. It is a light silty sand more or less mixed with heavy silt from last spring's floods and those of previous years. The ground is already well warmed up, though the winter has been unusually cold. As soon as the corn is well up, it is hoed and thinned to about 15 inches apart in the row; is watered and cultivated about every 10 days until the tassels come, usually about two months after planting. It is forced along so fast by the water and hot weather that worms are too slow to damage it much.

Some of this sweet corn has been picked ten weeks after planting, though this is not usual. In about 10 days after the first picking, the third and last picking has been made, the corn packed in boxes of three dozen each, and shipped.

The stalks are cut right after the last picking and while still green in June. They cure overnight and are

hauled and stacked within 24 hours after being cut. In this Valley the dryness and heat make possible such prompt stacking, and the stalks never spoil. They come out of the stack bright and green; and are eaten up clean by the cow and horses.

Beans Follow Corn.—To fertilize the land and shade it from sun as well as to get another crop, 20 pounds of pink beans were planted per acre on the corn land after the fodder was taken off. About Nov. 1, a crop of 1,000 pounds per acre was cut. If 40 pounds of seed had been planted, Mr. Cheatham says the crop would have been increased 500 pounds per acre; for with the thin planting, the beans made too much vine growth. The vines were offered to stock, but only the pods were eaten. The fine stuff from the vines was put back on the ground to supplement the fertility added by flood silt last spring.

Weather Bureau officials have started a campaign for more accurate terminology for various kinds of frozen rain. Sleet is officially described as small globules of rain frozen before striking the earth. When rain freezes after falling and forms a glassy coating on the ground, trees and wires, the condition is called a glaze, and when this is severe and accompanied by wind, it is reported as an ice storm.

What About California?

Dr. B. M. Rastall, head of the industrial survey conducted by the San Francisco Chamber of Commerce, has devoted a great deal of time to analyzing the resources of San Francisco and the State in natural resources aside from those supporting agriculture. Among other statements made by him are these:

"California is very rich in the most important lines of raw materials. The Pacific Coast has five-elevenths of the standing timber of the United States and 20 per cent of California's area is in forests. At the present rate of cut, California has a visible supply of 140 years of redwood and 350 years in mixed timber.

"In the minerals, California is the fifth State in value of output but in the opinion of leading geologists is first in the variety and value of its mineral deposits. The State has deposits of practically every mineral known in America. In gold production California is first in this country.

"The Pacific States have 40 per cent of the developable water power of America. Only 8 per cent of California's water power is at present being utilized.

"The situation is even more extreme with regard to oil. Two-thirds of the world's supply of petroleum is produced in the United States and nearly two-fifths of the American supply is furnished by California, or approximately one-quarter of the total world supply. This oil is brought to San Francisco bay by pipe lines of so low operation cost that for all practical purposes San Francisco is placed directly alongside the wells."

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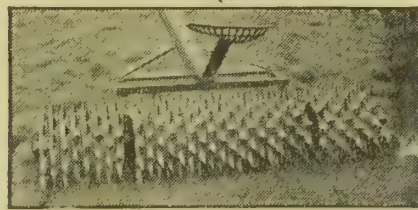
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The Life of Chilean Nitrate Deposits A. D. 1917

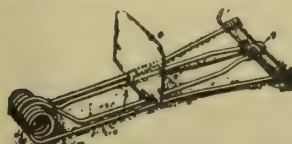
Total Nitrate deposits in Chile	720 million tons
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Estimated life of deposits at present rate of World's consumption	300 years
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The Manteca Canning Co. propose to double their capacity this year, having at the present time over 500 acres of tomatoes signed up for the coming season.

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in amounts not less than \$10,000

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How can I have a good garden with least expense? How can the wife have plenty of fresh vegetables for the home table with least labor?

IRON AGE Combined Hill and Drill Seeder

solves the garden labor problem. Takes the place of many tools—stored in small space. Sows, covers, cultivates, weeds, ridges, etc., better than old-time tools. A woman, boy or girl can push it and do a day's handwork in 60 minutes. 38 combinations, \$3.25 to \$15.00. Write for booklet.

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General Agricultural Review.

FIELD CROPS.

Asparagus shipping from Imperial Valley will begin early next week, according to advices of a Rural Press representative.

Prospects are good for a big barley oat crop in the Ramona district of San Diego county. Planting is being done at this time.

Reports from Imperial Valley say that there will be about 11,000 acres of cantaloupes planted in that section this year. Shipments will begin about June 1.

Two thousand 50-pound crates of Bermuda and Crystal Wax onions were harvested from two acres in 1915 by E. A. Miller of Coachella Valley.

The Timken Ranch Co. announce that they will plant 1400 acres in cotton at their Imperial county ranch this year and 1400 acres to alfalfa.

According to George Hewlett, President of the Cal. Hop Growers' Ass'n, a 20 per cent reduction in the hop acreage of the State would materially benefit the hop markets.

As a result of a satisfactory try-out of the Globe rice mills at Woodland recently that mill is now in daily operation milling some 150,000 sacks of rice which the concern has in warehouse.

One picking of peppers yielded 1800 pounds from an acre for Fred Miller of Imperial county last year. It was planted Feb. 20. The peppers are only good from early May till early June.

Nine cuttings per season, averaging 1½ tons per acre are claimed for Peruvian alfalfa on 45 acres worked by A. H. Smith of Coachella Valley before it was covered by the floods of 1916.

It is said that Edward Swanson, in the Pixley district of Tulare county, will plant 2000 acres to rice this season. This will be the largest acreage of rice under one management in the State.

A Rural Press representative writes that about 2,000 acres of land in the Brentwood district of Contra Costa county will be planted to sugar beets this year, most of the land for which is being subsoiled.

A report from Turlock says that 4,000 acres of land along the Tidewater and Southern railroad in Stanislaus county will be planted to sugar beets the coming season. Much of this land has not been farmed in recent years.

Potato buyers have been quite numerous in the Gold Ridge district of Sonoma county recently paying growers \$2.20 per cwt. in carload lots. Only two or three carloads of last season's crop remains in growers hands and seed is selling at a high figure.

Asparagus shipments will be made from Walnut Grove and other Sacramento river points about March 1. It is expected that 325 cars will be shipped from those sections this season. It is estimated that there will be 1,000 acres more asparagus planted in the district this spring.

The coming season promises to be a prosperous one among ranchers of Southern California. The price of all produce is so high as to make crop growing profitable. The rainfall so far has been rather light, but the mountains are full of snow, which means plenty of water for irrigation.

The aphid pest in San Luis Obispo county is to be combated by the bean growers, the County Horticultural Commissioner having started the State and Federal machinery at work on the pest. The damage done to the bean growers last year is estimated at \$200,000. It is said that the horse bean acts as an alternating host and so helps the pest through the winter.

CITRUS AND SEMI-TROPICAL.

Orange shipments increased in size from Riverside last week, 41 cars going forward as against 28 the week before.

Some planting of pineapple quince trees is reported from Porterville where the fruit is said to bring good prices and crops.

Five acres of young date seedlings in Coachella Valley were recently bought for \$5,000 by Dr. Duffield of Los Angeles county.

The directors of the Cloverdale Citrus Fair have decided that the opening date will be February 21. The fair will be open five days.

Heavy citrus planting is expected to follow in those districts of Tulare county which were not visited by frost during the past winter on the assumption that there is little if any danger in such locations.

The 340 date palms 10 and 12 years old which were moved from Heber to Indio are all thriving and the only set-back noticed was due to irrigation not going as deep as irrigators judged without digging.

The dreaded citrus canker has been found by E. H. Paddock, Horticultural Inspector at Santa Ana. It was received there in an advertising box of kumquats mailed to a Villa Park rancher from Mobile, Alabama.

It is said that Frank A. Tetley, the well-known Riverside nurseryman, who has extensive grove and nursery interests in North Whittier, will begin soon to dig and pack 16,000 lemon and orange trees for shipment to Donna, Texas.

Forty varieties of avocados growing on C. E. Needham's ranch in Los Angeles county all stood the frost better than Eureka lemons among which they were interplanted. The avocados were practically dormant while the lemons were growing thriftily.

W. L. Briscoe, general manager Sharyland Orchards Nurseries Company of Sharyland and Mission, Texas, was in Pomona last week buying nursery stock for his locality. He has contracted for 20,000 citrus trees. A car of ornamental stock was also bought.

An agreement has been entered into by the Southern California Retail Grocers and the Cal. Fruit Growers' Exchange whereby grocers in that part of the State will be supplied with the choicest of citrus fruit instead of being compelled to take large quantities of cull and other inferior fruit.

Citrus shipping was again started from Tulare county points last week, the water separators doing very satisfactory work in culling out the frosted fruit. Packing house people declare that the loss of Valencias will not amount to over 5 per cent and less than that where smudge pots were used.

About ¾ cent per pound to the grower for cull lemons is made possible while war prices last by the recent discovery of a commercial way to make U. P. citric acid at the Corona laboratory of the Cal. Fruit Growers' Exchange. It is now up to the company to produce commercially, a U. P. lemon oil. So far the experiments have failed to produce the fine aroma with their pure distilled lemon oil.

It is announced from Pomona that the days when orange packers made from \$6.00 to \$9.00 per day is a thing of the past. This year they are making from \$3.00 to \$3.50 on the average. The San Antonio Fruit Exchange is paying 3½¢ per box for packing and the independent shippers are paying 4¢. Instead of allowing the girls and women to crowd the fruit into the boxes as rapidly as they can, the managers are requiring them to wrap carefully and put a pig-tail twist on every wrapper.

DECIDUOUS FRUITS.

An apple institute is to be held at Yucaipa Feb. 28.

Almond trees at Banning are full of fat, vigorous fruit buds.

A considerable acreage of pears is reported to be going in around Colfax.

Fifty-four acres of peaches are being planted on the Silva ranch near Gridley.

Byron D. Beckwith is planting an 80-acre prune orchard on his newly acquired ranch near Colusa.

The Yucaipa Apple Ass'n has re-elected P. B. Hasbrouck president and Frank Dillon vice-president.

Almond spraying for brown mite and shot hole has been going on at Banning for two weeks. It is claimed that this also helps control of gumming of the nuts.

It is reported that J. F. Siems, who has extensive interests at Chicago Park, Nevada county, will plant 3,000 Bartlett pear trees at that place this spring.

The promotion committee of the Prune and Apricot Growers' Ass'n have asked for an extension of the time limit for incorporation from March 1, 1917, to May 1, 1917.

The Banning Almond Ass'n handled 235 tons in 1916, an increase of 35 per cent over 1915, due to additional acreage coming into bearing according to Manager R. H. Coombs.

Almond growers in the vicinity of Durham, Butte county, have purchased 10 carloads of smudge oil with which they expect to protect their orchards against freezing weather.

According to S. W. Baker of Sonoma county the prune acreage of that county is being materially increased by the interplanting of prune trees in hop fields and wine vineyards.

Three new apple evaporators are being built in the Sebastopol district this year to assist in handling the apple crops in that district. There are already over 100 evaporators in that district.

A severe slump in the prune markets of Santa Clara county is reported as a result of the war talk. Thursday of last week they were reported to be offered at 4½ cents for 40-60's for fall delivery.

Peach shipments from California, while not so large this season as in previous years, are bringing almost twice the returns to the growers that they have in previous years according to figures just issued by the California Peach Growers, Inc.

According to County Horticultural Commissioner Harry Lad of San Joaquin county, prunes will lead all other fruits insofar as planting in that county is concerned the present season. Already 500 acres have been planted there this year.

The plant of the Green Valley Canning Co. of Graton, Sonoma county, was leased last week to J. W. McCarthy, Jr., for a term of five years. Mr. McCarthy has been leasing this cannery from year to year in the past but expects to operate it on a larger scale from now on.

VINES AND VINEYARDS.

Imperial Valley Malaga grapes are being contracted for at \$35 a ton on the vine.

The vine pruners' strike in Fresno

Driver Agents Wanted

Ride in a Rush Car. Pay for out of your commissions on sales, my agents are making money. Shipments are prompt. Rush Cars guaranteed or money back. Write at once for my 40-page catalog and all particulars. Address J. H. Rush, Pres. Dept. 1N, BUSH MOTOR COMPANY, Rush Temple, Chicago, Illinois.

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| 10 Cannas, all different..... | \$1.00 |
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| 8 Assorted Shrubs, Lilacs, etc..... | \$1.00 |
| 5 Fruit Trees, 3-4 feet, cut back..... | \$1.00 |
| (Apple, Peach, Plum, Pear, Quince, Fig.) | |
| 6 Assorted Shade Trees, 3-4 feet..... | \$1.00 |
| (Elm, Ash, Maple, Sycamore, Poplar, Linden) | |

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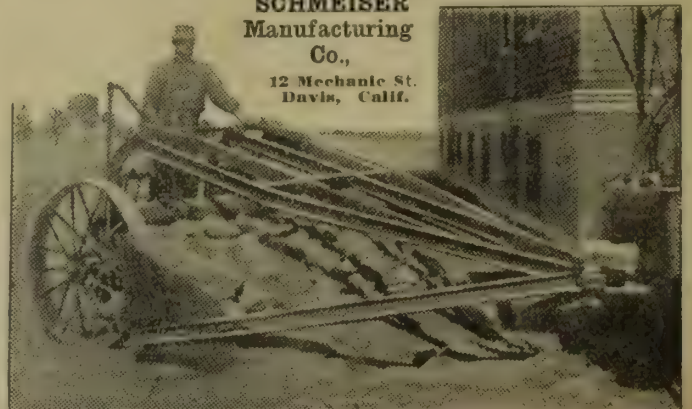
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county continues to be a source of worry to vineyardists, no settlement having been arrived at as yet.

An increase in the grape acreage of Imperial county is expected this year by County Horticultural Commissioner Waite. There are 1010 acres of bearing grape vines in that county, most of which are table varieties.

William Gould, newly appointed horticultural commissioner of Yolo county, has completed the inspection of 100,000 grape cuttings, most of which will be planted by P. N. Ashley and E. W. Bray. Thompson Seedless and Sultanas are the varieties being planted.

County Horticultural Commissioners in the San Joaquin Valley are urging the passage of legislation which will make it compulsory for all shippers of green grapes to comply with the sugar test. The claim is made that many growers ship in lug boxes to overcome the present law, which only applies to crate shipping.

Practically all of the 1916 raisin crop has been cared for by the 34 packing plants of the Associated Raisin Co. and as a result they were all shut down last week for the season. Because of rain damage the 1916 crop was very little more than that of 1915, but prices have been good and very little of the crop will be carried over.

MISCELLANEOUS NOTES.

C. A. Robertson has agreed to give 100 acres to the Chowchilla Fair Association near the town of Chowchilla. It is understood that the land will be used exclusively for the holding of agricultural fairs.

The Board of Prison Directors have set the price of jute bags for 1916 at 10 cents each. This is one cent less than the cost of manufacturing Calcutta bags, it is said. It is estimated that the State will be able to deliver 3,000,000 to 4,000,000 bags this year.

At an enthusiastic gathering of farmers and business men of Napa county at Napa last week steps were taken toward the establishment of a Napa County District Fair. It was necessary to form such an organization in order to secure an appropriation from the State.

Announcement comes from Stockton that a third sugar beet company is to be organized in San Joaquin county at once. The new company will erect its factory adjacent to Stockton and will have both rail and water transportation facilities. It is their purpose to secure a large acreage of beets in the delta districts.

Water will be turned into the main canal of the Modesto Irrigation District at La Grange dam within the next few days, according to reports from Modesto. The ditches and reservoirs of the district are said to be in good condition, and with a heavy snowfall in the mountains a good run of water is looked for.

Announcement is made at Sacramento that Governor Johnson has reappointed the following members of the State Board of Agriculture: John M. Perry, Stockton; Chas. J. Chenu, Sacramento; T. H. Ramsey, Red Bluff; Theodore Gier, Oakland; E. Franklin, Colfax; E. F. Mitchell, San Francisco; I. L. Borden, San Francisco and E. J. Delorey, Los Angeles.

About 600 of the required 650 farmers of San Bernardino county had signed up for a farm adviser previous to Feb. 3. H. A. Cherrier, chairman of the Redlands Chamber of Commerce committee to secure a farm adviser, and State Ass't Leader C. W. Rubel had been holding meetings about the county for a week or more and the final arrangements are expected soon.

PRUNE MEN ELECT AND START WORK.

Returns from the final election of trustees for the Prune and Apricot Growers' Selling Association show the following men elected:

District 1: W. J. O'Connor, F. W. Wilson.

District 2: Henry Wheatley, H. C. Dunlap.

District 3: A. B. Abshire, P. W. Bussman.

District 4: T. S. Montgomery, H. G. Coykendall, F. L. Barnhisel, J. J. Stanfield, George Glendenning, Nathan Lester, A. Kammerer, J. S. Williams, S. E. Johnson, I. E. Pomeroy, Frank Swett, Henry Hecker.

District 5: E. F. Eggen, W. E. Riesland.

District 6: David Felsenthal, F. E. Bagnall.

District 7: J. W. Macaulay, Arthur Swall.


The first meeting of the trustees was called for Feb. 8 at San Jose for the purpose of perfecting a permanent organization.

HAY SCARCE AND HIGH.

The following reports have been received from Pacific Rural Press representatives during the past week regarding the hay situation: Fresno, alfalfa hay scarce, dairymen paying \$14 a ton loose in the stack; Kingsburg, alfalfa baled on ranch \$15 a ton; Imperial Valley, baled alfalfa in stack brings \$20 a ton with a very scant supply; alfalfa in

San Diego county selling for \$22 a ton, loose in the stack, and baled oat and barley bringing \$20 a ton on the ranch.

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HEAT DOESN'T AFFECT TRACTORS.

[Written for Pacific Rural Press.]

The market for automobiles in Imperial Valley may possibly be limited; for most everybody that has a roof to sleep under in rainy weather already has a car garaged under a shade of arrowweed, palms, or grass.

But the market for tractors ought to be tremendous; for only a few are yet in use, and the heat of summer makes the working of horseflesh inhumane. Folks tell us it is so hot in summer that even houseflies are under the weather and do not bother; but that is only relatively true. Some folks say it is too hot to stay in the Valley through summer; but that is not true, for we found many families in pleasant, comfortable homes, who hadn't been out of the Valley for years. They had such homes because they had stayed and attended to business.

Some folks tell our solicitors it is too hot to read in summer; but that is not true, for a large proportion of Imperial Valley farmers read Pacific Rural Press.

But we must agree that it is too hot to work livestock through the summer days; and we have found the crop system regulated to avoid summer work.

A man could fix an umbrella or awning over himself on riding implements and do ranch work in the heat. This is where the tractor comes to the rescue. With big fans and good radiator capacity, a tractor does not overheat even in Imperial Valley. If it did, an evaporation system could be worked on the radiator. A fan can be connected to the belt wheel to keep the operator cool as breezes can.

Needed for Seedbeds.—In all our conversations with farmers all over California, we have never found a place where careful seedbed preparation made so much difference as in Imperial Valley in a season of water shortage. Yet at the proper time for seedbed preparation, most folks think they are too busy to work the soil deep and fine.

With a tractor, a man does so much more in the same time that he keeps ahead of his work and keeps it done thoroughly. He is then in position to harvest maximum crops.

NOT ENOUGH WATER TO SUPPLY PUMP.

To the Editor: I have a well with a 12-inch casing, 101 feet deep. I figured on putting in a 20 h.p. engine, but finally decided to use ditch water for irrigation so put in a 4 h.p. engine with a No. 2 centrifugal pump having a 3-inch suction and discharge pipe. Now the water stands about 12 feet from the surface and my pit is 10 feet deep, so the water is about two feet from the bottom of pit. My pump is on the bottom of the pit, but the water pumps down so that I have to lift it about 16 feet and I do not get enough water to suit me. When they dug the well they passed through about a foot of water and sand at 60 feet, but I thought that might not furnish me with enough water so had them go deeper. A neighbor who bored a well and stopped at this 60-foot stratum has plenty of water with the same sized

engine and pump. I had thought some of perforating the well at that stratum. Is there danger of the well filling up with sand if I do so? The trouble is that in the summer when everybody is irrigating the water gets higher in the well, but as soon as I start pumping it pumps down and as soon as I stop pumping it raises about 10 feet in one minute. What can you suggest?—E. L., Merced county.

[Answered by Prof. F. W. Woll, University Farm, Davis, Cal.]

We have read carefully the description of the above pump installation. We do not believe that there is anything wrong with this installation and that the whole difficulty lies in the fact that the water cannot get through the well casing fast enough to supply the pump. We would be inclined to suggest a perforated section in the casing at the first water bearing stratum. One foot of sand and gravel is not adequate, but perhaps with a screen installed here to supplement, preventing the water coming from below, there would be enough flow to supply the pump. Whether or not the one foot of sand and gravel will be adequate depends largely upon the coarseness of the sand and gravel. The pump will not operate efficiently with such a varying lift as described and some change should be made.

CHEAP FARM ELECTRICITY AND WATER.

[Written for Pacific Rural Press.]

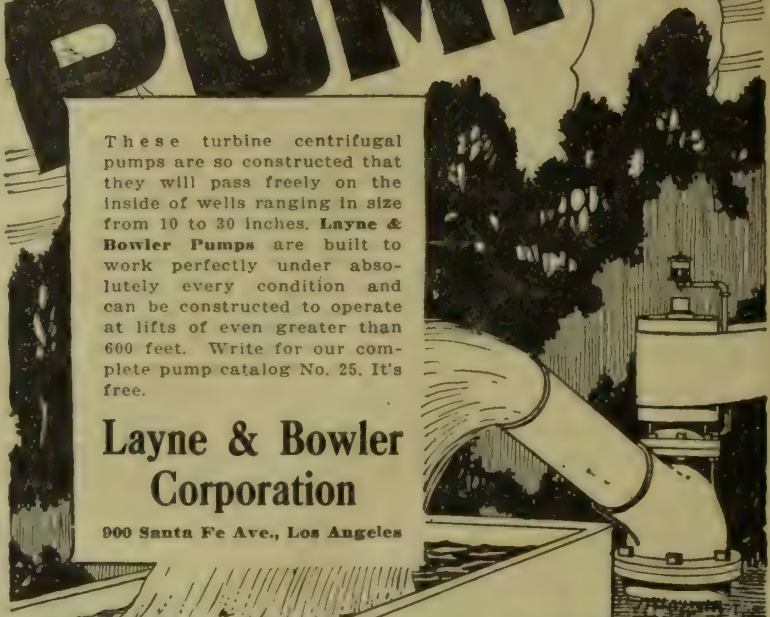
A three-horse-power gas engine runs a two kilowatt dynamo on the ranch of W. E. Gird in San Diego county to light the house and ranch buildings. From the other flywheel, a plunger pump is operated to supply water for house conveniences and fire protection.

The engine and dynamo are both on a concrete floor in an ornamental house which contains also a storage battery of 56 cells. Wires run through a tube imbedded in the concrete to the battery. The dynamo supplies a 16-ampere current at a pressure of 125 volts, which will light the ordinary incandescent lamps, of which there are about 80 in the new home which Mr. Gird has recently built in the hills, and perhaps as many more about the place and in the old home. Not over a dozen lights are ordinarily in use at once; but with the battery charged and the dynamo running, many more can be used at will. A sewing machine motor and vacuum cleaner are used; and of course electric flat irons, toasters, washing machines, etc., are available. The engine is started by turning electricity from the battery through the dynamo.

The well is drilled 96 feet deep; and supplies water to a 5,000 gallon concrete tank set higher than any of the buildings. Water is piped all through both houses for all modern conveniences.

Don't turn full power into an electric motor at once if a rheostat, or controller is used. This causes excessive heat, strains bolts and machinery, and consumes an abnormal amount of starting power.

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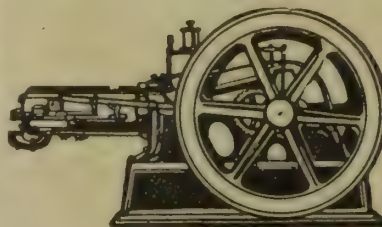
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RELEVELING ALFALFA FIELD.

[Written for Pacific Rural Press.]

There was a 15-30 tractor in the alfalfa field acting somewhat like a dog chasing its tail. The "tail" was a three-bottom moldboard gang plow and we thought the operator was demonstrating the tractor's agility.

Not so: it was performing stern work. The 150 acres on which it was working had been checked, and alfalfa had been grown on it for some years. But there were lots of high places where water could not be plentifully applied without drowning the rest. The ranch has since become the property of the Timken Ranch Co. and the high places are being leveled right. The plowman was kept busy regulating the depth of the plows; and when he got them too deep in that alfalfa sod he didn't raise them, but waited for the engine to take a breath and pull them out.

On the same field were about 20 teams of four horses or mules each, plowing and running scrapers. When we found that the tractor had done good service here for two years, we asked why they didn't have some more.

"There's another one coming," said the operator; and so it is on hundreds of Imperial Valley ranches.

LIKES WHEEL TRACTOR.

[Written for Pacific Rural Press.]

"If it is too wet to use my wheel tractor, the ground ought not to be plowed," says Warren E. Hyde of Santa Clara county. Mr. Hyde has 50 acres on which he uses his small tractor to plow, spring-tooth seven feet wide, slab-harrow 10 feet at a trip, and to pull a spike harrow. He mentions the light upkeep of wheel tractors, but does not seem to have any wet spots that must be plowed when the rest is ready. The effect of a tractor in mashing all clods before the end of the season is noted, where the ground is so thoroughly worked.

PUMPING PLANT SUPPLIES PASTURE.

[Written for Pacific Rural Press.]

A little pasturing in the middle of the day during the summer, supplied by a pumping plant, helps to keep up the milk flow and doesn't do much, if any, damage to the alfalfa, in the opinion of Simon Lanini of Monterey county who farms his own land.

To turn the cows directly into the alfalfa field with empty stomachs would be dangerous on account of bloat; so alfalfa hay is fed in the morning before pasturing is commenced. To leave the cows in the field long enough to give them all of the green succulent feed they need, would also be bad practice because of the harm done to the alfalfa. This is overcome by cutting green alfalfa and feeding it after it has wilted, that which is cut one day being fed the next day at the evening meal.

The conditions under which this practice has seemed advisable are, a well drained, sandy loam soil, where irrigation is done by pumping plant, cement supply pipes, and galvanized iron surface distributing pipes.

POWER NOTES.

A 25 h.p. tractor is used to run the alfalfa seed huller by C. C. Bowles of Imperial county. An extra advantage is that the huller may be quickly moved from stack to stack in the field.

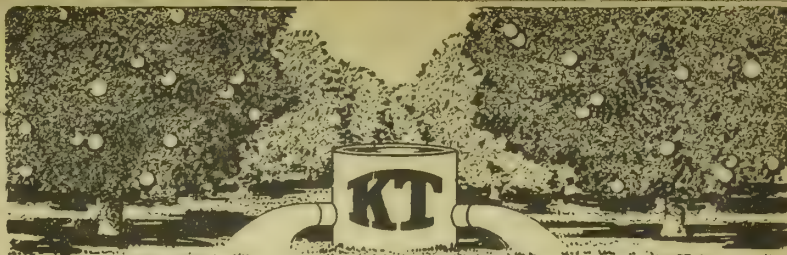
We recently watched a plowman stick a tractor with six moldboards shoved deep into heavy stick soil. He simply waited while the tractor operator backed up and jerked several times, slipping the tracks and straining every bearing. Of course the repair bill on that tractor won't please the owner.

During the present winter there has been plenty of weather in California when it was the part of wisdom to drain automobile and auto truck radiators before leaving them to stand overnight. It has been noted that the radiator won't freeze in ordinary freezing weather if a cupful of wood alcohol is kept in it with the water.

Testing a carboned spark plug in open air does not tell what it will do in the cylinder. Under the pressure in a cylinder, the carbon may be compressed so it will conduct electricity between the points and thus prevent a spark, while in open air, the carbon may fill the space but be too loose to conduct the current, thus permitting a spark.

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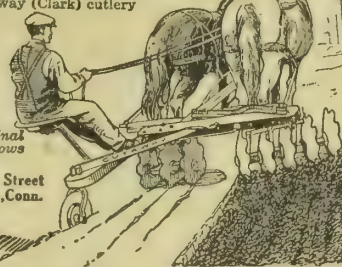
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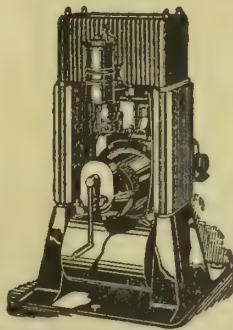
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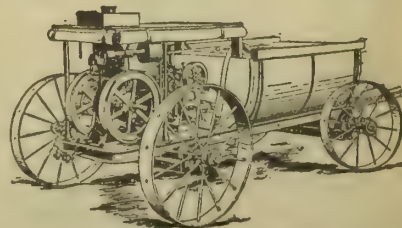


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Is Beef Probable on Alfalfa Land?

[Written for Pacific Rural Press.]

There has been a growing interest for the past several years in the possibilities of alfalfa land for the growing of market beef; and this idea has continued to gain adherents as the acreage of alfalfa increased and the grazing of mountain and hill areas contracted.

There has never been any question as to the desirability of this practice, but rather as to its practicability, with land values as they now are in the State and where profits are the chief consideration.

Straight Alfalfa.—In reply to a number of questions concerning this phase of the cattle industry submitted to us by a subscriber, W. G. Stimmel, former superintendent of the Stanford University's ranch at Vina and one with considerable experience along this line, says, "I believe it is practicable to raise beef cattle on a straight alfalfa farm, but I have no figures to show that it would be profitable. As a matter of fact I do not believe that beef cattle can be so raised, except at a financial loss. I believe that under present market conditions the ranges offer the only possible opportunity to raise beef cattle alone at a profit."

"It is my belief that our only way out on the cattle business on the irrigated alfalfa land is through the dual-purpose cow and the baby beef. The dairyman may argue strenuously against this, but if this can't be done successfully then, in my opinion, we might as well dismiss from our minds all hope of making profitable beef on high-priced lands, with intensive cultivation. The present price of beef on hoof will not pay cost of production under such conditions."

E. W. Little, superintendent of the Whitehall Estates ranch at Tracy, where alfalfa and beef are both grown, is emphatic in his statement that beef cannot be profitably raised on alfalfa alone in California, and W. E. Premo, who feeds great numbers of steers on alfalfa near Porterville, is certain that it is not profitable to raise beef on alfalfa alone at present prices.

E. A. Noyes and Son of Sutter City, experienced beef raisers with

some alfalfa acreage, do not believe a straight alfalfa proposition is practicable, although they think it might be feasible if part of the alfalfa was irrigated and part of it on higher un-irrigated land, and supplemented with hay during the winter months.

Amount of Hay.—Answering the question as to whether some alfalfa should be fed as hay at all times of the year Messrs. Noyes, Little, and Stimmel do not think so. Mr. Noyes preferring to feed hay only during the winter and when preparing for market, while Mr. Little does not believe it an economical practice at any time. Mr. Premo on the other hand thinks some alfalfa hay should be fed all of the time. By feeding hay he thinks 100 acres will furnish feed for 100 cattle, but not if the alfalfa is pastured.

Pasturing Alfalfa.—The question as to whether cattle can be pastured some of the time on green alfalfa naturally brings up the old question of economy that is so often advanced by dairymen. Generally speaking, no dyed-in-the-wool cattleman will hand-feed cattle, when pasture is available, for it is an old saying among them "that the less farming you do the more money you will make." It is probably on that basis that both Mr. Little and Mr. Stimmel think pasturing advisable, as does Mr. Noyes also, who further advises not to feed more than an hour a day for the first few days and never while there is dew on the alfalfa. Some, he says, prefer to feed some hay in the morning just before turning onto the alfalfa pasture and this is no doubt the safest way to prevent bloat.

Supplementary Feed.—While all of the above answers leave little doubt as to the impracticability of raising cattle on alfalfa lands, there is some difference of opinion as to what other feed, if any, should be raised if cattle raising under such conditions is contemplated.

Mr. Stimmel says this: "I would not raise other feed under such conditions unless rotation was necessary. As long as my alfalfa yields were good and the condition of the soil right for alfalfa I would not attempt to raise supplementary feed, but would buy such feeds and by so doing, through careful disposition of the fertilizer, maintain productivity of my alfalfa land."

Messrs. Noyes, Little, and Premo do not quite agree with this doctrine, Mr. Noyes saying that "for a small herd, corn or rolled barley can be fed successfully; for a large herd, would use oat or barley hay as a part of the winter feed and when finishing for the market." Mr. Premo would raise silage corn and some small grain and Mr. Little would grow carbonaceous soiling crops together with corn, barley, and oats. This is only practicable though, he thinks, with purebred animals, for intensive management must be compensated by quality and breeding prices.

Range and Alfalfa.—Probably the most practicable manner of including alfalfa in the production of beef at the present time, is to use it in connection with some range or mountainous area. The amount of land

Paicines Ranch Co.



San Francisco,

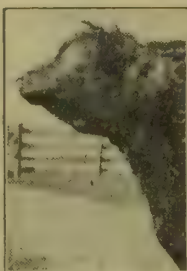
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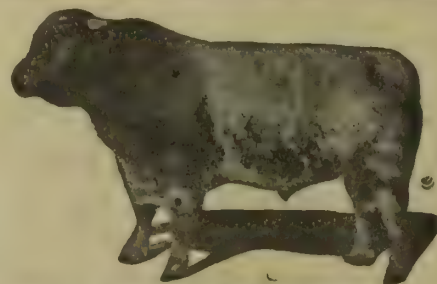
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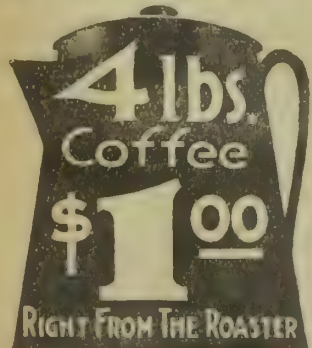
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Willows, Calif.

F. R. STEEL, Sec'y.,
Grant's Pass, Ore.

The Western Berkshire Congress

of each kind required for the maintenance of 100 head of cattle would depend entirely upon the character and quality of the range, that is, the quality and quantity of the grass or wild feed, and the quality of alfalfa land, water supply, stand of alfalfa, in short the annual yield of feed.

That there is a difference of opinion on this question is evident from Mr. Noyes' reply in which he says that 100 to 125 acres of alfalfa, subdivided, and 250 to 300 acres of good range land should furnish feed for 100 head. Mr. Premo believes that 10 acres of range to one of alfalfa would be about right, and Mr. Little thinks that 50 acres alfalfa, 500 acres of good range and 300 acres of rented stubble land would make the best combination for 100 head.

It should be understood that the above comments have to be solely with the profitable raising of beef cattle on alfalfa lands as found in California today and do not take into consideration possibilities for the finishing of range-raised beef on alfalfa. That also is a much-discussed question which some few are finding it exceedingly difficult to prove or disprove. It seems probable, however, that it is the brightest star in the alfalfa-beef raisers' horizon.

CREAM MAKES STRONG BUTTER.

To the Editor: We have a cow which makes strong butter. Her milk seems good and the cream is good till I commence to sour it for churning. She is fed on alfalfa hay, bran mash, and we put her out on the grass every day. She is three years old. Has had her first calf. Will be fresh in May, again. I keep the milk in a screen porch where there is nothing else kept. She seems well and eats good. The older the butter is the stronger it gets. Can the cream be churned sweet?—Mrs. H. W. Lankerheim.

[Answered by F. W. Andreasson, Secretary State Bureau, San Francisco.]

There are cows that give bitter milk sometimes. In such cases the udder or one quarter of the udder has been found to be affected. By taking a little milk from each quarter of the udder and placing it in sterile fruit jars or bottles it could be ascertained whether this was the cause of the trouble.

Where milk is placed in milk pans to allow the cream to rise by gravity the temperature of the room should be kept at from 60 to 62 degrees F. and the milk should be sour and ready to skim in 36 hours. The cream is then ready to churn. Where the room in which the milk is stored is kept at a low temperature (50 to 58 degrees F.) it takes too long before it is ready to skim. As the lactic acid bacteria develop very slowly at this temperature other bacteria which develop disagreeable flavors predominate.

Some creameries churn the cream sweet. It is then churned at a low temperature and takes longer to churn.

Auction Sale of 25 Purebred DUROC-JERSEY HOGS

Of Highest Champion Strains, Such As

KING THE COL. BOAR (Brother to Crimson King; Grand Dam the Dam of Col. Gano).

KING THE COL. SOW (Bred to Critic B).

ILLUSTRATOR GILT (Bred to National Chief).

TAXPAYER SOW (With Litter by Orion Cherry King, Ja.).

PATHFINDER-PROUD COL. GILTS.

PATHFINDER-MODEL WONDER GILTS.

SEVEN OF ABOVE PATHFINDERS Bred to Our KING THE COL. BOAR. Together with other Purebred Durocs, 32 grade Poland-China Sows (many bred, some with litters), over 400 Feeding Hogs, Complete Equipment of Farming Implements, Tools, Wagons, Live Stock, Hog Wire, Pipe, Lumber, Galvanized Tank, Gas Engine, etc.,

**At HOUCK RANCH, 2 miles east of
GRAPE, (formerly
Keystone) CALIF.**

BETWEEN BRAWLEY AND IMPERIAL.

Monday, Feb. 26, '17

MAIL BIDS CONSCIENTIOUSLY EXECUTED.

For Catalog and Further Particulars Address

J. P. WILLIAMS, Manager, Route A, Box 331, Brawley, Cal.

INNISFAIL DAIRY SHORTHORNS



Our herd of registered Shorthorns has been carefully selected from the leading milk producing strains of the breed and is being developed along the same lines in our hands. The herd is headed by

GLENSIDE ROYAL

a prize-winner at the 1913 International and grand champion at Panama-Pacific Exposition. Sired by him and out of large cows of good milk production we offer for sale a few choice young bulls. Our entire herd is tuberculin tested.

Alexander & Kellogg, Suisun, Cal.
Farm on Grisly Island.

GLENSIDE ROYAL 408155.



637.1 Pounds Butter- fat in 301 Days.

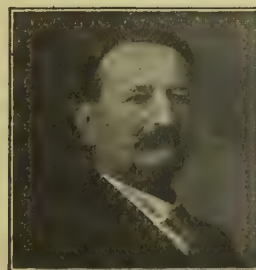
has been produced by **Empress Lass** under dairy conditions. Still working. Her sons and grandsons are from big producers of show type. Prices right.

LOCKEFORD STOCK FARM

N. H. Locke Co., Props.

Breeders of Jersey Cattle and Chester White (O. I. C.) Swine.
LOCKEFORD, San Joaquin Co., CAL.

EMPRESS LASS 218446,
Grand Champion Washington, Oregon,
California and A. Y. P. Exposition.



NOW in the East to Buy Shorthorns - Herefords

I will be in the East until February 10, selecting breeding cattle for prominent cattle growers and breeders of California. If you will write or wire your wants to me at once I will be able to fill your order on this trip.

**ALL ORDERS EXECUTED ON A
STRICTLY COMMISSION BASIS.**

ADDRESS TILL FEBRUARY 10,

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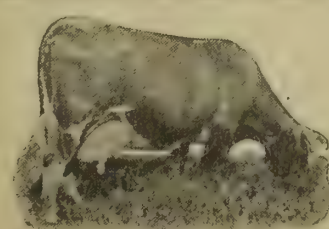
SHORTHORNS

35 Choice Service Bulls 15 SCOTCH AND SCOTCH-TOPPED COWS AND HEIFERS.

All registered and tuberculin tested.

A Few Choice Berkshires of Either Sex for Sale.

H. L. & E. H. MURPHY, Perkins, Sacramento Co., Calif.



\$81.86 PROFIT PER COW PER YEAR
over a period of 7 YEARS is the average of
A GRADE GUERNSEY HERD
IN WISCONSIN

IT WAS THE GUERNSEY BULL THAT DID IT

Write for our free booklets about GUERNSEYS
THE AMERICAN GUERNSEY CATTLE CLUB
BOX P.P. PETERBORO, N. H.

Winner of December Prize in State Dairy Competition Uses HINMAN MILKERS

READ WHAT HE SAYS:

Campbell, Cal., March 12, 1916.
The machine is still giving great satisfaction. Have had no trouble with it whatever.

Very truly yours,

F. O. BOHNETT.

The Hinman is the most used Milking Machine in the world. Used in England, France, South Africa, South America, Australa, Canada and China, as well as throughout the United States. Eight thousand in New York State. Extensively used by breeders of valuable registered cows. Simplest, safest. Most reasonable in price. Write for free catalog, which tells the whole story.

C. F. DANIELS,

2511 PRINCE STREET,

BERKELEY



Feeding Whole or Rolled Rice.

To the Editor: Several successful experiments have been reported in feeding rolled whole rice to both dairy cattle and beef cattle. As we are uncertain as to the exactness of these claims, also the feasibility of feeding such rice on account of the hulls, which seem to be a large part of the product, we should very much like to have your advice on any damage these hulls might possibly do to the stock.—J. C. L., Alameda Co.

[Answered by Prof. J. Davidson, University Farm, Davis.]

Considerable ground or rough rice has been fed in the past in Southern States, and there are also reports of its having been used for stock feeding in this State, especially for dairy cows, with no ill effects, so far as I have been able to learn. The hulls are, of course, undesirable components of any feeding stuff, both because they are intrinsically useless as feeds and through their roughness and sharp anatomical structure they irritate the lining of the alimentary tract of the animals and may cause impaction of the bowels when eaten in considerable quantities. There is, however, no danger in this respect so far as is known, when cattle do not get any more hulls than naturally go with the rice kernel. The danger that has sometimes come as a result of feeding by-products containing rice hulls, has been due to the presence of an excessive amount of hulls therein. Unfortunately, unscrupulous rice millers and dealers have often in the past diluted rice bran or rice feed with large amounts of ground rice hulls, in order to get rid of and make something out of this waste product that accumulates in large amounts at the rice mills. The result has been equally damaging to

the reputation of these feeds and to stockmen that bought them. At the present time, when the California rice industry is in the process of development, our rice millers can adopt no better policy than to deal honestly with their customers and sell only pure unadulterated goods which can be fed to stock with safety and profit.

Rough rice (so-called paddy rice), or rolled or ground whole rice, may be used for feeding farm stock to advantage, where it can be obtained at a fair price in comparison with other feeds. Its feeding value is somewhat lower than that of barley, as is indicated by the chemical composition of the two cereals. Rough rice contains about 73 per cent digestible matter (4.7 per cent digestible protein; N. R., 1:14.6), against 85.3 per cent for barley (9.4 per cent digestible protein; N. R., 1:8.1). It is a more starchy feed than barley, but compares rather closely with dried beet pulp in chemical composition and contents of digestible nutrients.

As in the case of most grain feeds, rough rice is preferably fed mixed with other feeding stuffs, and if it makes up not more than one-third or one-half of the grain mixture, it will be likely to be worth nearly as much as other standard grain feeds, pound for pound. Rough rice has been used to some extent for feeding cattle, sheep, pigs and chickens. It is less adapted for feeding swine than the other class of farm animals, and should be fed in moderate amounts to them, say not to exceed one-third of the total grain feed given.]

Will Dairy Shelter Pay?

Is it going to be good business for the California dairyman to provide some kind of shelter for his cows during the cold stormy winter months instead of allowing them to stand in deep mud and shiver from the cold?

Frequently we have asked practical dairymen this question during the past winter and always we have been answered in the affirmative, sometimes very emphatically, as was the case with F. Stenzel, of San Lorenzo, large Holstein breeder and market milk producer.

Previous to the present winter Mr. Stenzel has spent much time and money grading and graveling his corrals in order that they might be free from mud, and while he succeeded better than most do under like conditions he still had to contend with mud and, what was more important, a falling off in milk of two to three 10-gallon tanks in the daily yield.

To overcome this he erected last fall a large shed, having a good galvanized iron roof equipped with ventilators and a closely laid plank floor. One side of this building was left open and openings were left at regular intervals in the other side that the sun might gain access to the building in clear weather. Through the protection afforded the cows by this building Mr. Stenzel says he has been able to keep the milk flow of his entire herd up to the normal

amount produced in clear weather.

A cheaper form of shelter was shown in a recent illustration of Bohnett Bros' dairy, on the front page of this journal. They consider that cold weather is as costly to the milk flow as wet weather and muddy corrals, it having been their experience before erecting the shed roof, that the cows fell off in their milk worse in cold weather than they did in wet weather. Another factor which makes the shelter more desirable than any form of corral surfacing one can do is the conservation of manure, which is no small matter in itself.

MAKING SUDAN HAY BETTER

[Written for Pacific Rural Press.]

Sudan grass can be made to produce a much finer grade of hay by sowing it thick, thinks R. R. Henderson of Kings county, who has several acres planted to that crop this year.

He sowed his seed this year the last of April, using 15 pounds to the acre broadcast. On a few spots where alkali was prevalent, it did not do well; but on the good land it had produced two heavy cuttings August 1, and was expected to grow another crop. He has noticed that the best quality of hay was secured where the seed was sowed thickest; and another year will use plenty of seed.

Revada Guernseys

BRED IN THE PURPLE



Every animal on this farm is imported, and carries the blood of such noted sires as Governor of the Chene, Sequel's Monogram, and Governor of the Gree.

HERD BULL IMP, Ricardo of Edgmoor 34367

Some Fine Young Bulls FOR SALE

See Our List of Winnings at the California State Fair

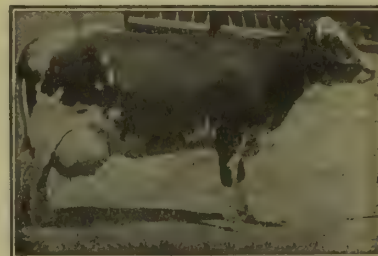
REVADA FARM

B. E. NIXON, Proprietor.

Yountville,

Napa County, California

Breed for Butterfat



Beryl Clothilde Hengerveld, Champion in Butter-fat Contest, Sacramento, 5-day record, 21.11 pounds, test 4.7 per cent.

The quickest and surest way to make your Holstein herd more profitable in spite of high cost of feed is to introduce blood from high-testing ancestry.

My herd has a larger percentage of high-testing cows than any other herd in the State.

My young herd bull, DUTCHLAND SIR PIETERTJE CREAMELLE, has high-test breeding, and is transmitting this breeding to his sons and daughters. Five tested daughters have records averaging 21 pounds, all testing better than 4%. One of these, Clothilde Pontiac Creamelle, is California Champion 2-year-old, with a record of 22.52 pounds at 2 years 1 month; test 4.72%.

Have a few fine young bulls that will soon be ready for service.

WRITE OR CALL AND SEE THEM.

F. STENZEL

Breeder of High-Test Holsteins.

SAN LORENZO,

CALIFORNIA

GRANDSONS OF TILLY ALCARTRA

We now offer two young bulls for sale that are old enough for service. No. 1—Born Sept. 13, 1915.



Prince Alcartra Korndyke. Best bred son of Tilly Alcartra.

No. 2—Born Sept. 3, 1915. His dam is a heavy producer and will be put on test next time she freshens. His full sister has a record of 19.36 in 7 days at 2 years 6 months and will also be kept on test for the year.

The bulls are nicely marked, have perfect top lines, are good individuals and both sired by Prince Alcartra Korndyke, who now has 6 A. R. O daughters and more coming.

Write for prices, or better come and see them.

J. S. GIBSON CO., Box 97 Williams, Cal.

"THE NAME GIBSON INSURES QUALITY."

Marketing Stanislaus Hogs Direct.

[Written for Pacific Rural Press by Otis L. Linn, Modesto.]

The value of co-operation has been pretty thoroughly demonstrated by the farmers in the Modesto section of Stanislaus county by the actual cash benefits they have received in marketing their hogs together.

Since September 20, 1916, when the first car was shipped there have been 12 cars of hogs handled co-operatively with an actual net saving of \$50 to \$150 per car, which has gone directly to the farmer. That is, these farmers through co-operative shipping of their hogs have received that much more than they would if they had accepted the highest price offered by the local buyers.

Farmer's Agent.—The working plan by which this has been made possible is very simple and could be duplicated in any district where there are sufficient numbers of hogs to justify the effort. In this case the Stanislaus Farmers' Union appointed an agent whose business it is to create an interest in co-operative shipping and as soon as a carload of hogs have been promised the farmers are notified just when to assemble them at the shipping point.

On the given date the hogs are all

ment is made each shipper is paid the total amount his hogs brought, less the actual cost entailed in the shipment. The agent who manages the shipment is paid so much a car, usually from \$10 to \$20.

The expense of shipping a car of hogs from Modesto to San Francisco, including a shrinkage of about 15 pounds on each animal, amounts to just about three-quarters of a cent per pound, but even at this the farmers have been paid, on the average, a dollar an animal more than they could have received by the old method.

Troubles.—Of course there are disadvantages under which the method of shipping must labor, such as shrinkage, failure of farmers to bring in their hogs as agreed upon, poor transportation advantages (sometimes as much as 14 hours being required for the shipment to arrive in San Francisco from Modesto, a distance of 100 miles), and not least of all the fact that the hogs must be practically sold when they leave the shipping point. These disadvantages will doubtless be overcome in time by better organization



HOG SHIPPING DAY AT MODESTO.

Each carload contains several consignments, some large and some small, as is indicated by the various sized vehicles used.

brought in to the railroad corrals, weighed, marked and turned over to the shipping agent who accompanies the car to market. The marking is done by simply clipping a spot on some particular part of the hog, each consignor being given a separate mark.

When the hogs arrive at the packing house they are separated and each consignor's shipment graded, and sold separately. The packer butchers the hogs in separate lots and each shipper is given credit for any premiums due to high butchering percentages, or charged if per chance the government inspector condemns any for disease. Half of this latter charge is sustained by the packer after allowance is made for the usable parts of the carcass.

Expense.—When the final settle-

among the producers, compelling, if need be, better transportation facilities and a centralized stockyards where the element of competition may have a larger scope.

Advantages.—Some of the advantages of this method of shipping may be enumerated as follows: actual cash demonstration to the producer between the good hog and the poor one; an actual reduction in the number of middlemen; education of the producer that it pays to produce good animals for the market.

On the whole, the farmers of this section, having shipped the first car of hogs co-operatively ever marketed in California, feel that they have an experience to offer that will help to bring about the solution of the much discussed marketing situation of livestock in California.

For a Kicking Cow.

A contrivance that effectively prevented the cow from kicking, yet was easily made and applied or removed, was recently seen in use. Two strap irons about 2x4 inches had been bent in the middle so they would fit snugly over the cow's legs just above the hock. On one, a chain was fastened by a wire which laid flat against the cow's leg and had its ends fast to the corners of the outside end of the iron strap. On the other, a wire was

hung in the same way but so shaped at its middle that any link of the chain would fit into it and be held by pressure of the next link against the wire.

The dairyman said that this sometimes slipped off, but it wouldn't if it were an inch longer on the inside end. He suggested using harrow teeth in place of the iron straps, fastening a short chain to the pointed end of each tooth and bending

TREWHITT'S BIG TYPE POLAND CHINAS



The blood lines of the herd are unexcelled, the foundation stock having been secured from the Topnotch Herds of the Middle West. Sows of fine quality, yet big and roomy. The sort that have large litters of vigorous pigs.

Offering for sale a choice selection of gilts, boars and bred sows.

W. D. TREWHITT,

HANFORD, CAL.

BASSETT'S POLAND CHINAS



GRAND CHAMPION SOW,
P. F. I. E. 1915; Sacramento, 1916.

For many years at widely separated show rings, under many different judges of varying type ideals, my Poland Chinas have been consistent prize-winners. My herd is large and I cull closely. The animals sent out as breeders are the very tops of a large number. I KNOW that my kind of Poland China is a profitable farmer's hog, for I send carloads of them to the packer every year—uniform in size, high in quality, quickly and economically matured and finished.

Young stock, \$30 Up.
M. BASSETT,
Box 1, Hanford, Cal.

We are Consigning
TO THE
Western Berkshire
Congress
Sale
at Davis, Feb. 15

IOWANA QUEEN, 29th
224799

This sow was bred by Iowana Farms, Davenport, Iowa, farrowed Sept. 1, 1915, sired by Iowana Rival Champion 2nd 194729 out of Iowana Queen 2d 188557.

When Harry Murphy left for the National Show at Omaha last year he was to bring out a gilt or two for our herd that would show good on the circuit next year, and to pay a neat price if necessary to get the right kind of stuff. He shipped two Iowana gilts from the Berkshire sale at Omaha. Iowana Queen was one of these, and we are selling her at a sacrifice to our herd.

She is royally bred and she has a wonderful conformation, splendid head, depth and length, large hams and smooth shoulders—well, she is a real Berkshire and bred to a real boar. She will start some one in the Berkshire business right.

Normandy Farms
ARLINGTON M. SMITH,
Visalia, Cal.

the tooth so the end fitting the inner side of the cow's leg would be three inches long. A snap in the other

MONTELENA HERD

Large Yorkshire Swine

THE IDEAL HOG
FOR THE
PROGRESSIVE FARMER.



MONTELENA BIG DICK,
First Aged Boar and Reserve
Grand Champion.

Won 9 Prizes
With 8 Entries
at Sacramento.

Young stock
for sale—both
sexes.

A.L. Tubbs Co.
Calistoga, Calif.

end of one chain would hook into any link of the other chain, required to hold the hocks close together.

Live Stock and Dairy Notes.

[Livestock breeders all over the State are invited to send on postal cards, notes regarding their sales, State and County Fair intentions, new stock, etc.]

DAIRYING.

A cow 13 years old finished a year's record about Nov. 11 of over 456 pounds fat, for F. H. Van der Pool of El Centro. She freshened again Jan. 22, 1917.

A bacteria test of 5,000 c.c. was obtained in Los Angeles recently on two counts of cream shipped there by J. D. Houston of Imperial. His usual test runs about 10,000 per c.c.

A San Francisco company is endeavoring to sign up 1,000 cows in the Manteca section of San Joaquin county in the hope of establishing a casein factory at that place.

Preparations are now under way for the installation of the milk condensary machinery at the large Borden plant recently completed at Modesto.

D. & H. Rowles of Stanislaus county have recently sold five registered Holstein cows from their herd to Walter Schmidt of Hughson for foundation purposes.

L. E. Prestage of Tulare county has recently purchased from Tulare county parties eight registered Holstein cows and four registered heifers as a foundation herd for his ranch near Plano.

Because he had plenty of silage and pasture for his 120 dairy cows G. V. Rude of Imperial county has been able to sell 40 to 50 tons of alfalfa hay from his ranch for \$20 a ton baled the past month.

The N. H. Locke Co. of Lockeford reports the sale of registered Jersey bulls to the following parties during the past month: one to F. W. Bush, Fair Oaks; one to Mr. Ward, Orland; and one to A. W. Maguire of Fresno. They were all descendants of King's Valet and out of dams of extremely high quality.

A record butterfat production for the Gridley Cow Testing Ass'n was made last month by the registered Holstein cow Piebe Laura Inka De Kol, owned by J. H. Guill, Jr., by producing 1630 pounds of milk and 86.4 pounds fat. There were eight other cows in the association which made better than 45 pounds of fat.

Seven cents a pound above Los Angeles butter quotations has been paid regularly for fat in whole milk by the California Central Creameries Co. at El Centro and it was recently reported that they had raised the price to 10 cents above Los Angeles. This is so that they may obtain milk to make into casein at their new factory.

The highest producing cow in the Sacramento-Yolo Cow Testing Ass'n for January was a grade Holstein owned by John Herzog of Courtland, according to advice supplied us by C. C. O'Hara, tester for the association. Her monthly production was 1197 pounds milk and 50.2 pounds fat. Twelve cows in the association made better than 40 pounds of fat during the month.

We are advised by H. E. Spires that he has recently moved his herd of 27 registered Holstein cattle and his purebred Duroc swine herd from Kansas to his Fresno county ranch where he will raise purebred stock exclusively in partnership with Dr. J. M. Crawford. Their herd sire is Sir Piebe De Kol Segis Pontiac, a good son of King Segis Pontiac Count of Andrews Farms fame.

The five herds which led in production of butterfat in the San Joaquin Cow Testing Ass'n during January were: F. Kell, 9 cows with an average of 32.1 lbs. fat; E. B. Goodwin, 51 cows with an average of 31.7 lbs.; M. C. Gammon Est., 27 cows with an average of 30.6 lbs.; H. Bailey, 37 cows with an average of 29.4 lbs., and the County Farm, 35 cows with an average of 28.8 lbs. fat. There are 800 cows on test in the association.

SWINE.

Four carloads of fat hogs have recently been shipped to Kansas City from Imperial county to be used in the manufacture of hog cholera serum.

We are in receipt of an instructive sales catalogue of Berkshire swine issued by Silver Birch Farms of Newport, Washington. More breeders should use this method of following up their advertisements in farm papers.

Haden Smith, Duroc breeder of Yolo county, reports the sale of 17 bred sows to Chas. E. van Barneveld, Glenn county; a boar to A. J. Gomes, of Calaveras county; and a service boar to Joe Hulén of Solano county and a gilt to F. W. Marston of Shasta county.

A dispatch states that farmers along the Sacramento river in Glenn county are fattening hogs on bass, shad and salmon. The first, the report says, are sucked into the irrigation canals by the water pumps where they die when the canals are emptied during the winter months.

Normandy Farms of Visalia has sold the registered Berkshire Capital R. sired by College Robinhood and out of Majestic Duchess B, to S. Usuka, a Japanese dairyman of Fresno county. Capital R. was one of the foundation animals in the Normandy Farms and has produced some outstanding pigs.

R. H. Whitten of Glendale has just issued one of the most attractive purebred swine catalogues ever gotten out in the State describing the hog industry in general and his ranch in Tulare county and his registered Poland Chinas in particular. Mr. Whitten now has one of the largest herds of purebred Polands in the State.

R. M. Whitten, owner of the Whitten Ranch at Terra Bella, advises us that he has recently bought the Poland China boar Jumbo Model, a son of Big Smooth Model that has been used as herd sire in the herd of Chas. Herring of Nebraska. He will be used on the daughters of Mouw's Long Smooth Jumbo now in the Whitten herd.

The members of the Kings County Poland China Breeders' Ass'n are sending out invitations to Poland China breeders in all parts of the State asking them to be present at Hanford March 7 when an attempt will be made to organize a State Poland China breeders association. The Kings county breeders will hold their auction sale on the same date.

Model A. D., the Duroc herd sire on the Cocapa ranch of the Timken Ranch Co., was the grand champion at the Imperial Valley Livestock Fair. He has a fine arched back, deep, medium-long body, with hams carried well down and as broad as his shoulders. He was brought from the East to breed to most of the 80-odd purebred sows bought for this ranch from the Peters, Lamson & Walker herd.

The Carruthers Farms of Mayfield has received from I. N. Barker, Thornton, Indiana, the great Berkshire brood sow Rival Lady's Goods, sired by Rival Champion. This sow is the mother of Hamilton Farms grand champion sow at the last International. She is also the mother of the grand champion sow of the National Swine Show held at Omaha last year. A Chicago report mentions her as the greatest Berkshire brood sow in the world. She is due to farrow in the early part of March.

BEEF CATTLE.

Experiments are to be tried out in Nevada with sunflower silage, which is said to be a good cattle feed by government authorities.

Beef cattle growers in Mendocino

K. W. Abbott Wins Rural Press Prize

K. W. Abbott of Milpitas, Santa Clara county, was winner of Pacific Rural Press monthly prize of \$25 for January for the highest production of five grade cows entered in the California State Dairy Cow Competition headed by a purebred sire. Prof. F. W. Woll advises us that the average production of these cows was 1436.5 pounds of milk and 56.605 pounds butterfat (average test 3.9 per cent) 54 days after calving, on the average, from the beginning of the month.

county have organized the Mendocino Stock Men's Ass'n during the past month to combat the work of cattle thieves operating in that district.

A bill has been introduced into the Nevada Assembly calling for the use of one bull to every 30 head of breeding cows or fraction thereof in a herd on public range. The bill must also be registered.

Alfalfa and barley finishing of beef steers is becoming more prevalent on ranches near Porterville, and farmers are securing a premium for steers fed in this manner. Recent sales of nine cents on foot are reported from there for steers fed in this way.

SHEEP AND WOOL.

According to a dispatch from Porterville local sheepman there are being offered \$6 a head for their spring lambs and 32 cents a pound for their spring clip of wool.

A dispatch from Colusa says that F. J. Mendosa of that place has sold 60,000 pounds of wool for 33 cents a pound. He refused, however, to contract his lambs for June delivery at \$6.50.

Utah reports say that a severe loss is expected by sheep men on the desert of Tooele county because of the extreme cold weather. Estimates are being made that the loss will amount to 100,000 head unless warmer weather arrives shortly.

Reports from Merced, Stanislaus and San Joaquin county sheep growers are to the effect that a good percentage of lambs is being secured in spite of short feed. Rain is needed, but they believe they will be able to get through the season all right with little more or none at all.

An organization to be known as the Northern California Wool Growers' Association was formed at a meeting of prominent sheep men of Tehama and Glenn counties Jan. 22. Their purpose is to combat unfavorable legislation and co-operate with the Forest Service in laws governing grazing in the National forests. Fred Ellenwood was elected president, G. B. Willcox, vice-president, and A. E. Bell, secretary.

HORSES AND MULES.

John Burrell, the well known jack and jennet breeder of Kings county, has recently sold a high-priced jack to Adolfo Camellero of Ventura county.

H. B. Thornberry has just got back to Stockton from Missouri with four carloads of jacks which he purchased for Pacific Coast distribution. He is establishing a branch office at Spokane.

MISCELLANEOUS NOTES.

A shipment of 45 cars of livestock was recently made from Imperial county to Los Angeles which is said to be the largest shipment of its kind ever made from the valley.

A company to be known as the Tassajara Land and Livestock Co., capitalized for \$1,000,000, has filed articles of incorporation in Alameda county. The company proposes to establish a 7,000-acre ranch near Pleasanton.

Word comes from Washington, D. C., that the Department of Agriculture has decided not to establish an animal quarantine station at San Francisco on the grounds that there is such a comparatively small number of cattle importations at San Francisco that the expense is not justified.

A total of \$9,000 has been subscribed of the \$14,000 necessary for the purchase of suitable grounds near Fresno for the erection of a meat packing plant. It is said that attempts to establish a co-operative plant have been given up and that instead a Chicago concern will erect the plant.

Reports from Winnemucca, Nevada, say that notwithstanding the severe weather cattlemen are experiencing in that section, their stock is going through the winter in good shape and only minimum losses are expected. A large number of sheep are being grazed on the deserts and the balance are being fed grain and hay.

BERKSHIRE MEN MEET NEXT WEEK.

The 1917 livestock sale season in California will begin next week at the University Farm at Davis, when the Western Berkshire Congress will hold its sale of 50 bred sows in connection with a three days' meeting of that organization.

The details of this meeting and sale have been carefully worked up by the directors of the association, initial steps for which were taken immediately after the State Fair sale last year, and it is expected that the three days' session will be one of the largest attended events of its kind in the West.

The Berkshire men have a habit of cutting into the core of their troubles at all of their meetings, instead of throwing bouquets at one another, and with several out-of-State speakers, including A. J. Lovejoy, a national authority on swine, this meeting should bring out much of educational value to breeders and farmers alike.

The sale is looked upon by Berkshire men as the event of the year in California swine circles, the offering being composed of consignments from 15 prominent herds of California, Washington, Illinois and Oregon. A step in the right direction which has been made by the association for this sale was the appointment of a secret committee of three to inspect all animals before the sale in order to insure a uniformly high class lot of hogs. A feature of the meeting will be the women's judging contest, seven silver trophies for which have been provided. W. H. Hord of San Francisco will cry the sale.

Digester Tankage

Send for Sensible folder on feeding hogs

Western Meat Company

Animal Food Dept. 704 Townsend St., San Francisco

CATTLE FEED FOR SALE

I have both wild feed and hay to be sold together, and fed out by owner. Write me at once for prices, etc.

JAS. McCORD,

Hanford, Cal.

DUNLAP SECURES GOOD HEREFORDS.

Writing from Omaha, Neb., R. M. Dunlap states that he has purchased for the Simon Newman Co. at Newman, the grand two-year-old Hereford bull Bonnie Brae, who is an intensified Bonnie Brae bred bull out of the dam of the bull a year older that sold last June to O. Harris and Sons at public auction for \$11,100. Mr. Dunlap writes that this is a great bull, full of quality and weighed 2800 pounds when 28 months old, also that he believes him to be the highest-priced bull that ever came to the Pacific Coast. He has been bred to many of the best cows in the Wm. Andrews' herd. Besides this Mr. Dunlap has purchased three yearling bulls for the same firm.

STENZEL'S HERD SIRE A PRODUCER.

F. Stenzel, Holstein breeder of San Lorenzo, informs us that another two-year-old daughter of his herd sire, Dutchland Sir Pietertje Cream-elle, has made a seven-day record under official test of better than 20 pounds of butter, with a test of 4.48 per cent fat.

This makes five daughters of this bull which have made 20 pounds or better in seven days and all have had a test of over 4 per cent fat. As only six daughters of this bull have freshened and the other one made better than 15 pounds of butter in seven days as a two-year-old, Mr. Stenzel believes he will be able to develop some record-breaking daughters of this bull.

LIVELY TO SELL HEREFORDS.

We are informed by D. O. Lively that he will hold an auction sale of purebred Hereford cattle at his ranch near Mayfield on May 3. Mr. Lively is still in the East, where he is purchasing a number of high-class females for this herd. He also advises us that he has secured a young herd sire from the Hereford herd of Warren McCray.

A lame foot will be pointed forward when the horse is at rest. If two feet are sore, they will be pointed alternately.

LIVESTOCK DIRECTORY.

Rates in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

SWINE.**Poland Chinas.**

SMITH'S POLAND-CHINAS—Sows and gilts bred to Joker, First Prize Boar at the Wisconsin State Fair, 1915. These sows and gilts, sired by Iowa Wonder, who is a son of A Wonder, the most celebrated Poland-China boar, living or dead. Litters from this mating are the best I have ever seen anywhere. Prices low quality considered. Will sell one or a carload. As a special inducement each purchaser will be given a year's subscription to the American Swineherd, the best swine paper published, and a copy of the Handbook on the Sow; also a copy of the Pig Feeders' Manual. Geo. A. Smith, Corcoran, Cal.

SEND FOR FREE CATALOG—Finest ever issued. Tells of the famous Whitten Ranch money-making strain of Big Type Poland-Chinas. Make greatest weight in shortest time at lowest cost topping market at 225 lbs. in 6 months. 600 head both sexes, all ages, reasonable prices. Satisfaction guaranteed. Ranch in Tulare County, but address owner, R. H. Whitten, 610-A Security Building, Los Angeles.

GRAND CHAMPION SUPERBA POLANDS—A few choice spring Superba boars ready for service. Sows bred to Superba for fall litters. Prices reasonably low. Rough's Greenfields, Arlington Station, Riverside, Cal.

REGISTERED POLAND-CHINA BOARS of serviceable age. A Wonder and Chief Picture breeding. Every animal guaranteed. Price \$25. Bar N Ranch, E. A. Noyes & Son, Props., Sutter, Cal.

POLAND-CHINAS—Bred gilts, \$15; young boars, \$10 and \$15; bred sows, \$25. Weanlings, either sex, \$6. Registered and crated, purchaser to return crates. E. A. Hall, Watsonville, Cal.

REGISTERED POLAND-CHINAS—Young boars ready for service. Weanling pigs, both sexes. Prices attractive for quick sales. J. H. Cook, Paradise, Cal.

REGISTERED POLAND-CHINAS—Prolific, pabulous profitable porkers. Choice boars now ready for service, \$25 each. Weanlings, \$15. Dr. J. A. Crawshaw, Hanford, Cal.

LAKEVIEW STOCK FARM POLAND CHINAS are money-makers. Satisfaction or money refunded. Geo. V. Beckman & Sons, Lodi, Cal.

POLAND CHINAS—Big type. Shoats, either sex, or in unrelated pairs. O. L. Linn, Linview, Route A, Modesto, Cal.

POLAND-CHINAS—Big type combined with quality. Choice bred sows, gilts, boars. W. D. Trewitt, Box 82A, Hanford, Cal.

REGISTERED POLAND CHINA SWINE—Prize-winners. Finest stock in the State. \$20 up. M. Bassett, Hanford, Cal.

POLAND-CHINAS—Stock for sale at all times. We please you or refund your money. W. A. Young, Lodi, Cal.

BIG-TYPE POLAND CHINAS—Stock from the best herds of the Middle West. N. Hauck, Alton, Humboldt Co., Cal.

REGISTERED POLAND-CHINAS and Duroc Jerseys. Cholera immune for life. T. H. Beckman, Lodi, Cal.

POLAND-CHINAS—Large type. The Browning Stock Farm. W. H. Browning, Woodland, Cal.

DEACON RANCH POLAND CHINAS—Prize winners. Young stock reasonable. Box 27A, Davis, Cal.

KNOB HILL STOCK FARM—Registered Poland-China Swine. A. M. Henry, Farmington, Cal.

AMAWAGE FARMS—Poland-China hogs and Holstein cattle. G. H. Loughery, Visalia, Cal.

POLAND-CHINAS—Prize-winners. Money-makers. W. Bernstein, Hanford, Cal.

REAOAKS RANCH herd of registered Poland Chinas. W. J. Hanna, Gilroy.

REGISTERED POLAND-CHINA HOGS—J. A. Clark, R. 4, Lodi, Cal.

Berkshires.

GRAPEWILD FARM BERKSHIRES—World's Fair Grand Champion Grand Leader 2nd heads our herd, not only himself a champion, but the sire of Champions. At the 1916 California State Fair his daughters won first in all of the senior sow classes, including the Grand Champion Sow. At the 1916 Oregon State Fair a Grand Leader sow was Junior Champion. We are offering a number of choice boars of exceptional breeding and are also booking orders for Fall pigs. A. B. Humphrey, Escalon, San Joaquin Co., Cal.

50 BRED SOWS AND GILTS—50—of true Berkshire type and quality, bred to Grand Champion boars, are included in our private sale list now ready for mailing. Write for it today. Silver Birch Farms, Box R. P., Newport, Wash.

CHOICE REGISTERED BERKSHIRES—Fine sows bred to excellent boars for Spring farrow, \$50 and \$60 each. Splendid August and September boars and gilts, \$20 and \$25 each. W. H. Waugh, Riverside, Cal.

REGISTERED BERKSHIRES—Progeny of Improver B. Young stock now ready for sale. Start your herd with breed and strain of established reputation for California conditions. Geo. G. Meckfessel, Berlin, Cal.

BERKSHIRES—I have one of the best herds on the Pacific Coast, including Grand Champion Sow, Reserve Grand Champion Boar under one year, Third Aged Boar, etc. Frank A. Brush, Santa Rosa, Cal.

IMMUNIZED NORMANDY BERKSHIRES.—Good type. Breeding stock, any age, for sale at all times. Cast iron guarantee. Arlington Smith, Visalia, Cal.

BERKSHIRES—Bred sows and weanling pigs. Write for prices and pedigrees before buying. Butte City Ranch, Box P, Butte City, Glenn Co., Cal.

REGISTERED BERKSHIRES—Special offering. Three service boars at prices to move them quick. Write us. Imperial Stock Farm, Morgan Hill, Cal.

SPECIAL—Six good service boars and a few sows in pig to Premier Leader due to farrow in October. Geo. M. York & Son, Berkshire breeders, Modesto, Cal.

ROSE CREST BERKSHIRES—Rivals Champion Best blood. Open and bred gilts. Service boars. F. L. Hall, Perris, Cal.

CARRUTHERS FARMS BERKSHIRES—Cholera immune. Second annual sale August 2, 1917. Mayfield, Cal.

30 REGISTERED BERKSHIRES—Boars and gilts for sale. J. H. Benedict, Lemoore, Kings county.

HOPLAND STOCK FARM—Registered Berkshires. Prices on application. Hopland, Cal.

REGISTERED BERKSHIRES—Young stock for sale. F. W. White, Elk Grove, Cal.

Duroc-Jerseys.

FIRST PRIZE HERD—Headed by Uneeda Wonder, 2nd prize boar at Nebraska and a winner at Omaha, 1916. Grandson of Crimson Wonder Again and H. A.'s Queen. Entire offering of Spring pigs will be from 1st or 2nd prize-winners. Inquiry solicited. Haden Smith, Box 84-D, Woodland.

REGISTERED DUROC-JERSEYS—Service boars from prize-winning stock are money-makers. They grow faster. New England California Corporation, Ripon, Cal.

CROLEY'S BALANCED HOG FEED—the cheapest feed to fatten hogs. Write Geo. H. Croley Co., Inc., Live Stock Supplies, 631-637 Brannan St., San Francisco.

DUROC JERSEYS—Herd boars. E. N.'s Colonel and Tulare Boy. Sweepstakes winner at Fresno, 1915. Choice breeding stock. J. P. Walker, Visalia.

FOR SALE—2-year-old registered Duroc Boar, B. S.'s Crimson Wonder. A proven breeder. Satisfaction guaranteed. Brother & Ward, Chowchilla, Cal.

MUST SACRIFICE my two-year-old, registered Duroc-Jersey Boar and Sow. Both prize-winners. Write A. Melvin, Paradise, Butte Co., Cal.

RANCHO RUBIUS DUROCS—All sold except a few July and September gilts. Extra good. Write for prices. Elmer Lamb, Ceres, Cal.

REGISTERED DUROCS of guaranteed breeding. All ages. Weaned pigs, \$10. H. E. Boudier & Son, Napa.

HEAVY BONED DUROCS—A few service boars for sale. Ormondale Co., Route 1, Redwood City, Cal.

REGISTERED DUROCS—Crimson Wonder stock. Young stock, both sexes. L. D. Collins, Denair, Cal.

REGISTERED DUROC-JERSEY SWINE—Both sexes. Big-boned type. B. F. Kendall, Hardwick.

WINTON DUROC-JERSEY FARM, Winton, Cal.—High-class pure-bred hogs both sexes, any age.

RIVER BEND FARM—Registered Durocs are superior. Big Type. St. Helena, Cal.

DOS HERMANOS REGISTERED DUROCS—Duveneck & Pickersgill, Ukiah, Cal.

CURTIS DUROCS of either sex at all times. E. C. Curtis, Napa, Cal.

REGISTERED DUROC-JERSEY SWINE—Frederick M. Johnson, Napa, Cal.

DUROCS—Big type, both sexes for sale. Ed. E. Johnson, Turlock, Cal.

REGISTERED DUROC-JERSEYS—S. S. Southworth, Napa.

Yorkshires.

LARGE YORKSHIRES—Choice spring boars, gilts, and weaned pigs from Champion sow P. P. I. E., or from breeding of champion boar and sow, Sacramento, 1916. If you see them grow you will like them. Riverna Farms, Paradise Road, Modesto, Cal.

LARGE YORKSHIRES—The ideal hog for the progressive farmer. Young stock for sale. A. L. Tubbs Co., Calistoga, Cal.

Chester Whites.

BILLIKEN HERD OF CHESTERS—The big prize-winners at the 1916 California State Fair. A real utility breed that makes money for its owners. A few young service boars left; twenty young, open gilts that will be bred as may be desired by buyer. Write for the booklet Chester Whites. C. B. Cunningham, Mills, Cal.

REGISTERED IMPROVED CHESTER Whites—Grizzly Bear Ranch, East Auburn, Cal.

Essex.

LITTLE BLACK ESSEX—Service boars and weanlings. Only herd in the State. Limited supply. Yolo Essex Herd, L. W. Millsap, Yolo, Cal.

Hampshires.

BELLA VISTA HAMPSHIRE SWINE—from prize-winning stock. J. W. Henderson, First National Berkeley

DAIRY CATTLE.**Holsteins.**

FOR SALE—From 1 to 100 extra fine, straight, well-marked, light colored, highly bred, registered Holstein heifers from 6 to 18 months old. They are rich in the blood of King of the Pontiacs, Pontiac Korndyke, Hon. served De Kol, Rag Apple Korndyke 8th, King Segis and other most celebrated sires of the breed. Prices very reasonable. Write Geo. A. Smith, Corcoran, California.

25 HIGH-GRADE HOLSTEIN HEIFERS, sired by Creamcup Sir Walhalla Pontiac 96169, coming with second calf by a high-class bull. All tuberculin tested. Also 35 yearling heifers, sired by same bull. Terms and prices, apply to W. H. Nichols, 2552 Haste St., Berkeley, Cal.

REGISTERED HOLSTEINS—Herd sire King Korndyke Hengerveld Ormsby 7th, 86623. His full sister as Junior 3-year-old made 32.04 lbs. butter in 7 days. The record of his dam and his sire's dam averaged 30.98. George Kounias, Modesto, Cal.

REGISTERED HOLSTEINS—Grandsons of King Segis and of world's record cow Cream-elle Vale. Will build up the production and value of your herd. Write or call and see them. F. H. Stenzel, San Lorenzo, Cal.

WANTED—One registered Holstein bull and six registered Holstein cows or heifers with calf. Light colored preferred. State price and pedigree. Must be good and price right. Address H. H. Dunning, Marysville, Cal.

FOR SALE—Thoroughbred Holstein Bull, Sir Chifden Korndyke No. 106585, H. F. H. B., four years old, at a bargain. Inquire F. G. Anthony, Good Templar's Home for Orphans, Vallejo, Cal.

REGISTERED BULLS by King Korndyke Pontiac and out of A. R. O. cows. A splendid selection old enough for service. Write or call. J. H. Harlan, Woodland, Cal.

TULARE GUERNSEY AND HOLSTEIN FARM is offering young bulls of both breeds. Excellent breeding. Prices reasonable. W. J. Higdon, Tulare, Cal.

THE MCLOUD RIVER LUMBER CO., McCloud, Cal.—High-class thoroughbred Holstein bulls for sale. Write for prices and pedigrees.

FOR SALE—Two registered Holstein cows with A. R. O. records. Write for particulars. J. W. Benoit, Route C, Modesto, Cal.

THE HENDERSON CO.—Breeders and importers. Registered Holsteins. Sacramento Bank Bldg., Sacramento.

BREEDERS OF REGISTERED HOLSTEIN cattle and Berkshire pigs. Whittier State School, Whittier, Cal.

REGISTERED HOLSTEINS—A. W. Morris & Sons, Corp., Importers and Breeders, Woodland, Cal.

CREAMCUP HERD—Registered Holsteins Pontiac bull calves. M. Holdridge, Modesto, Cal.

SUNNYSIDE HERD—Registered Holstein cattle. R. F. Guerin, R. 3, Box 58, Visalia.

REGISTERED HOLSTEIN CATTLE—E. E. Freeman, Route B, Modesto, Cal.

REGISTERED HOLSTEIN BULLS for sale. Sunnyside Ranch, Willits, Cal.

REGISTERED HOLSTEIN BULLS for sale. C. L. Morse, Route B, Modesto, Cal.

BREEDERS OF REGISTERED HOLSTEIN CATTLE—McAlister & Sons, Chico, Cal.

REGISTERED HOLSTEIN BULLS, \$50 to \$150. Glorietta Stock Farm, Woodland, Cal.

REGISTERED HOLSTEIN BULLS from A. R. O. dams. B. F. Anderson, Modesto, Cal.

CHOICE HOLSTEIN bulls for sale. No females. Millbrae Dairy, Millbrae, Cal.

REGISTERED HOLSTEIN-FRIESIAN CATTLE—J. M. Campbell, Escalon, Cal.

BREEDER OF HOLSTEIN-FRIESIAN CATTLE—Dr. Ben Stetson, Napa, Cal.

A. R. O. HERD OF HOLSTEINS—Alex. Whaley, Tulare, Calif.

Jerseys.

JERSEY BULLS AND BULL CALVES—Sons and grandsons of 2 and 3-lb. cows. None better. Cheap for quality. N. H. Locke, Lockeford, Cal.

VENADERA HERD OF JERSEYS offers calves from Register of Merit cows with official yearly records. Write for list of bulls. Guy H. Miller, Route 1, Modesto, Cal.

BREEDER OF REGISTERED JERSEY Cattle—Duroc Swine. Young stock for sale. W. J. Hackett, Ceres, Cal.

JERSEY BULLS AND HEIFERS from Reg. ister of Merit Cows for sale. C. G. McFarland, R. 2, Tulare.

YOUNG REGISTERED JERSEY BULL Calves at reasonable prices. O. J. Ames, Oakdale.

JERSEY BULLS—Sons of Gertie's Lad and Gertie's Son's Victor. A. A. Jenkins, Tulare, Cal.

REGISTERED JERSEYS—Young bulls and bull calves. T. E. Purvine, Petaluma, Cal.

JERSEY BULLS from Register of Merit cows. C. D. Hayworth, Modesto, Cal.

Guernseys.

PACIFIC GUERNSEY HERD—Cattle selected from best imported and Advanced Register Stock. Now offering choice bulls. C. S. Rasmussen, Lodi, Cal.

EDGEMOOR FARM GUERNSEYS—First in the show ring and in official records. Few animals of either sex for sale. Edgemoor Farm, Santee, Cal.

BELLA VISTA GUERNSEYS—Males from A. R. dams, \$100 up. J. W. Henderson, 1st National, Berkeley.

Ayrshires.

AYRSHIRES—Registered; all ages. E. B. McFarland, 412 Claus Spreckels Bldg., San Francisco.

AYRSHIRES—Registered—75 head. All ages. Young stock for sale. Le Baron Estate Co., Vallejo, Cal.

BEEF CATTLE.

SHORTHORNS—Herd headed by grandson Whitehall Sultan. Calves sired by \$10,000 Prince Imperial for sale. One or a carload for sale. Get our prices before buying. Butte City Ranch, Box P, Butte City, Glenn Co., Cal.

SCOTCH AND SCOTCH-TOPPED SHORTHORNS—We have the largest herd of straight Scotch cows in California. Foundation stock of both sexes for sale; also a choice lot of range bulls. Barco Ranch, Hollister, Cal.

1500 HEAD HIGH GRADE HEREFORD cows. Some calves by their side. 300 head fine yearling steers. 200 mixed weaned calves. Sixty head exceptionally well-bred grade Hereford bulls. Ten head of very choice registered Hereford bulls ready for service. G. R. Patton, Porterville.

D. O. LIVELY, 215 Hobart Bldg., San Francisco, offers for sale a registered Hereford bull twenty-two months old and a registered Shorthorn bull coming three years old. Correspondence solicited.

REGISTERED YEARLING SHORTHORN Bulls—Heavy-boned, thick-meated Scotch and Scotch-topped breeding. Ormondale Co., Route 1, Redwood City, Cal.

BREEDERS OF REGISTERED SHORTHORNS—Milk strain. Choice young stock for sale. John Lynch Ranch, Box 321, Petaluma, Cal.

REGISTERED AND UNREGISTERED—Shorthorn bulls for sale. Paicines Ranch Co., 320 Sharon Bldg., San Francisco.

INNISFAIR DAIRY SHORTHORNS—Registered young bulls for sale. Alexander & Kellogg, Suisun, Cal.

HOPLAND STOCK FARM—Registered Shorthorns. Prices on application. Hopland, Cal.

REGISTERED HEREFORDS—H. H. Gable, Diamond G Ranch, Esparto, Cal.

SIMON NEWMAN CO., Breeders of Register Herefords, Newman, Cal.

GEORGE WATTERSON—Breeder registered Herefords. Bishop, Cal.

SHORTHORNS—Carruthers Farms, Mayfield, Cal.

SHORTHORNS—Fair Oaks Ranch, Willits, Cal.

SHEEP AND GOATS.

F. A. MECHAM ESTATE, Petaluma, Cal.—Breeders and Importers of Shropshire, Rambouillet and American Merinos, both sexes. Also Red Polled cattle. Take electric car at Petaluma or Santa Rosa for Live Oak Ranch.

SHROPSHIRE—Ewes and Ewe lambs for sale. International winner heads flock. Butte City Ranch, Box P, Butte City, Cal.

KAUFKE BROS., WOODLAND, CAL.—Breeders and Importers of Hampshire sheep.

DORSETS AND ROMNEYS—Dorset ram lambs for sale. John E. Marble, Los Angeles.

BISHOP BROS., SAN RAMON, CAL.—Breeders and importers Shropshires.

CHAS. KIMBLE—Breeder and Importer of Rambouillets. Hanford, Cal.

HORSES AND MULES.

REGISTERED SHIRES—Black Hawk Stock Farm. Importers and Breeders, Easton & Ward, Proprietors Burlingame, Cal.

MISCELLANEOUS.

SAN FRANCISCO LIVESTOCK EXPORT Co., Eugene R. Croley, Manager, solicits foreign orders for purebred registered and merit breeding animals and fowls. California has great diversity of climatic and other conditions that enable us to select animals that have been raised under conditions similar to those of the location for which they are intended. We should be informed regarding these conditions and be allowed ample time to make selections. Nearly all disappointments in buying afar are the result of insufficient information as to conditions or to lack of time for proper selection. Our plan and terms for "raising animals to order" to fit into peculiar foreign conditions is worth investigating. References: Dun or Redwicks, or San Francisco banks. Office, 319 Underwood Building, 525 Market St., San Francisco.

LIVE STOCK INSURANCE—Registered live stock and farm work horses should be insured. The Hartford Company, strongest in the world, writing live stock. No trouble to answer questions. D. O. Lively, special representative, 215 Hobart Bldg., San Francisco.

CROLEY'S BALANCED DAIRY FEED—the cheap milk producer; and Croley's Calf Meal—the best California calf raiser. Geo. H. Croley Co., Inc., 631-637 Brannan St., San Francisco.



Gertie's Son, Victor, No. 123159.
Dam, Victor Lady Lake (R. O. M.)
of 536 pounds butter in 303 days
as a 4-year old.

Invest In JERSEYS and Start Right

135 Registered Jerseys in my
herd, including 18 Register of
Merit Cows. Blue-ribbon winners
at 1916 Hanford, Bakersfield, and
Visalia Fairs.

Correspondence solicited.

A. A. JENKINS
TULARE, CALIF.



"Good
to the
Last
Drop"

Raise Your Calves on Blatchford's Calf Meal and Sell the Milk

More calves have been raised on
Blatchford's Calf Meal than on all
other milk substitutes combined.

100 lbs. makes 100 gallons of milk substi-
tute, costing only one-third as much as milk.

Prevents scouring and insures the early
maturity of sleek, handsome calves.

It is steam-cooked and no trouble to pre-
pare or use.

Write for Pamphlet "How to Raise Calves
Cheaply and Success-
fully with Little or No Milk." At dealers, or
Coulson Poultry & Stock Food Co., Inc.,
Petaluma.

Hog Cholera Serum

I represent one of the greatest Government
Inspected Hog Cholera Serum Plants in the
whole country.

NO BETTER SERUM MADE.
An ounce of prevention is worth a pound
of cure. Find out about this serum today.
Price Right.

For particulars address.

CARRUTHERS FARMS,
MAYFIELD, CALIF.

TAMWORTHS

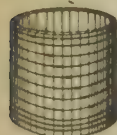
(The Bacon Hog)
Largest Herd in the State

DUROC - JERSEYS

Mature Stock and Weanlings of both
sexes. Sure to please.

SWINELAND FARM.

W. O. Pearson, Prop. Woodland, Cal.



REDWOOD TANKS — SILOS.
Thirty-five years in this busi-
ness in Stockton.—A 500-gal-
lon tank, \$10.00. A tank 6 ft.
x 2 1/2 ft., \$8.50. Other tanks
equally cheap. I deal direct
with the consumer, saving 10%
to 25%. All sizes in stock.
Clear, dry redwood direct from
the mill. Write for price today.

Latest improved machinery. Doors, Windows,
Frames, Mouldings.
R. F. WILSON, STOCKTON, CAL.

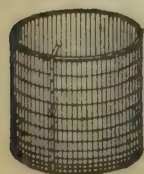
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(Phone Farmers' 394.)

Will conduct sales anywhere in
California.

Purebred livestock sales given special
attention.

For dates and terms address
T. J. GILKERSON, Lemoore, Cal.



REDWOOD TANKS SILOS

Steel and Wood.
Windmills, Frames,
and Towers.

Water Troughs.
Prices the lowest.

BROWN & DYSON,
640 So. Center St.,
STOCKTON, CAL.

University Sheep Also Winners.

While the winning of Champion
and Reserve Champion steer honors
at the Chicago International Live-
stock Show was in itself a feat that
the University of California as well
as all Californians may well feel
proud of, additional honor is re-
flected in a report of the Interna-
tional issued by Clay Robinson Co.
of Chicago, commission merchants.

It has been the practice of this
concern for many years to offer
\$1,000 in prize money to agricul-
tural colleges for the best exhibits

of fat hogs, cattle and sheep, and in
the report mentioned it is shown
that the University of California was
awarded \$305 of this prize money as
against \$180 to the Kansas Agricul-
tural College, the next largest prize
winner.

The large winnings of the Univer-
sity of California in this division
was largely attributable to their win-
nings on sheep—best wether, best
wether lamb, champion wether, and
the best pen of five wethers, all be-
ing won by the University.

Hogs and Calves Combined.

[Written for Pacific Rural Press.]

Cheap hogs and calves are raised
and fattened by C. J. Ellis of Poway
Valley, San Diego county. He raises
corn and feeds it ground with ground
barley in a soaked mash to fatten
the animals. The corn is drilled in
June, extra thick. It is thinned out
to three feet apart as needed for the
hogs, of which he now has 30 about
ready for market besides the breed-
ing stock. Suckers and tops are also
fed later. Pie melons are fed the
year around. One vine produced 60

melons. They can be bought at \$1
per ton.

Mr. Ellis also makes a business of
buying dairy calves from neighbors,
putting as much as five on one cow,
fattening them on ground corn and
barley, and selling them at about
100 pounds to a local butcher who
comes to the ranch, butchers the
calves there, pays 12 to 15 cents per
pound for them dressed and leaves
the hides for Mr. Ellis, who thereby
realizes another profit.

A Simple Milk Record Cabinet.

Keeping milk record sheets clean
of fly specks and finger marks is a
continual source of worry to all who
keep milk records and bothered
Bohnett Bros. of Santa Clara county
till they devised a record sheet cabi-
net. This cabinet is nothing more
than a small board box equipped
with two wooden rollers, similar to
towel rollers, one end of each ex-
tending out of the side of the box
so that they may be turned back
and forth.

The milk sheet is rolled up on one
of these, like a kodak film, and the
other end fastened to the other
roller. The box is equipped with a
partition through the center, over
which the milk sheet runs, this par-
tition affording a solid place for
marking down the figures. Except
for this middle space the front of
the box is enclosed with glass, which
protects the sheet from dirt and at
the same time makes easy reading
of several days' records possible.

Sudan for Sheep Pasture.

To the Editor: Would you advise
me to put in for pasture for sheep,
Sudan grass or sorghum? Either
can be irrigated.—C. H., Denair.

[Answered by Prof. Robt. F. Miller,
Univ. Farm, Davis.]

Sudan grass would be very su-
perior to sorghum as a pasture for
sheep, sorghum being too coarse for
a desirable pasture crop. Sudan
grass has been proven to be entirely

adaptable for raising sheep with good
results. It is usually, however, best
to take off the first cutting as hay,
then irrigate and allow the sheep on
the pasture as soon as the grass is
6 or 8 inches high, providing irri-
gation is possible. It is not neces-
sary, however, to irrigate the Sudan
pasture as this is a dry-land crop,
although irrigation helps the yield.

Alfalfa-Meal-and-Molasses Ration.

To the Editor: What results do
you think I would get by feeding a
ration of about 30 pounds of alfalfa
meal sprinkled with stock syrup and
about five pounds of grain included,
for a cow with fairly good pasture?
—Subscriber, Riverdale.

[Answered by J. M. Bomberger,
Modesto.]

The writer does not state the size
of cows nor what the cows are pro-

ducing, but it is hardly probable that
a cow on good pasture would eat as
much alfalfa meal as suggested. The
proportion is good, but the average
cow would eat less of it on fair pas-
ture. That mixture is most relished
by the cows if moistened just enough
to settle all the dust; also in that
way there is no loss of molasses by
seepage from the feed.

BUTTERMILK FOR CALVES.

Because he sells whole milk and
does not have skim milk for calf
feed, H. Mini of Solano county has
been using pasteurized buttermilk,
purchased at the creamery, for the
past four or five months with good
results.

In changing from whole milk to
buttermilk Mr. Mini uses the same
precautions that he formerly did
with skim milk, adding the butter-

milk to the whole milk gradually
and reducing the latter till finally
the entire ration is made up of but-
termilk.

Besides the saving of feed Mr.
Mini states that his calves are
healthy, no trouble being experi-
enced with scours or other diseases
and when fed in the same amount
that he previously fed skim milk he
finds that his calves always have a
keen appetite and keep in good grow-
ing condition.

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VETERINARY QUERIES.

[Answered by Dr. H. E. Wintringham, Petaluma, Cal.]

[Subscribers wishing an immediate reply should send money order for \$1.00. No charge for questions answered through this department. Name and address of subscriber must accompany each query.]

COW WEAK IN BACK.

To the Editor: I have a cow that is heavy with calf and she seems to be weak in the back. She has been down for about a week. At first I could help her up, but for the last two days she hasn't been up at all. She has a good appetite and seems to be hungry all the time. I have been feeding her oat hay and rolled barley, with alfalfa meal mash at noon. Can you tell me what to do for her?

Give fluid extract nux vomica in one-dram doses four times a day. This may tide her over till she has the calf, when she will probably get up.

DOG WITH WORMS.

To the Editor: I have a very promising young dog, Airdale and Collie. He acts like an old dog—all crippled and stove up; hasn't shed his hair, sleeps most of the time, has a hard swelling in heel, the front leg swelling the same; passes small, flat-headed, white worm; has always drunk fresh milk, but refuses it now; doesn't eat much.—J. B. R., Kingsburg.

Give this dog one dram powdered areca nut mixed up in a little butter on an empty stomach. Follow this six hours later with a good dose of castor oil.

EXAMINATION OF HORSE NECES-SARY.

To the Editor: I have a mare that has a tendency to keep her hind legs spread apart when standing and when backing she lifts left hind leg high and swings it out. She is very flat-footed and inclined to drag left foot. She was in this condition when I got her. Can you suggest a remedy?—W. H. H., Caruthers.

The condition appears to be of such old standing that treatment will be useless. In any case an examination would be necessary to make a diagnosis.

BLEEDS AFTER COVER.

To the Editor: I have a mare that was bred about five or six weeks ago, and at the time I noticed she bled considerably after the cover, but the blood soon stopped, and lately a greenish matter has been coming out of the vagina. She eats good and is in good flesh and is healthy in every other way.—E. W. C.

Douche this mare with a one-half of one per cent solution Chlorazene (Abbott) twice a day until the discharge stops.

RABBIT HAD FITS.

To the Editor: What is the matter with my Flemish Giant doe. A week ago she had a fit, knocking her nest over, and could not stand. Now when I feed her she will struggle around the box until she gets to a corner, and there is able to prop herself up and can manage to walk along the side of her hutch. Her head stays twisted to one side. I feed her oat hay, barley, and some green grass.—C. P., Martinez.

This looks like ear mange. Wash the ears with lime-sulphur solution daily.

RADIAL PARALYSIS OF HORSE.

To the Editor: From no apparent cause a 10-month-old colt lost the use of its left front leg. There was no sign of bruise or external injury of any kind, neither was the skin broken. There was no flinching from any pressure that was applied. It came on suddenly about four weeks ago. I have been applying liniment and the colt is just beginning to let the affected limb support a little

weight again. What can I do?—M. E. H., Woodland.

This is a case of radial paralysis. Time will effect a cure in this colt assisted by the application of ammoniated liniment of camphor to the region of the shoulder once a day.

MILK DISEASE OF SHEEP.

To the Editor: We lose a number of ewes each year from an affliction our local veterinarian does not seem able to cope with. The animals act dizzy, their heads are thrown high and occasionally they become blind. This condition exists during the lambing season and not at other times. We have tried short rations and different feeds without results. Can you suggest a remedy?—Subscriber, Yolo county.

This trouble is milk disease or eclampsia of sheep. The form which you have can be treated very nicely by the hypodermic injection of morphine or by giving enemas of chloral hydrate. This must be done however by a veterinarian. At times the disease simulates milk fever of cows and can be treated in the same manner.

BOAR WITH SWOLLEN SHEATH.

To the Editor: I have a young Poland China boar, shipped from Iowa about a month ago. Shortly after he arrived I noticed that his sheath was swollen and on examination found that the urine was collecting there. What can I do to stop this?—A. F. B., Potter Valley.

This is a common ailment of boars and does no harm unless the sheath becomes distended. Inject a little 5 per cent solution of tannic acid into the sheath twice a day.

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Why not do likewise? Why not follow their lead? As the above only lists their jack colts, they still have their jennet colts for sale in addition to the above as additional profits.

Call and see my stock at the Race Track, while in Stockton. Prices reasonable, and terms payments, if desired.

Talk it over with your neighbors, organize a little company among yourselves, and come in and buy.

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TUPMAN POULTRY FARM—Panama Pacific Winners. Place your order now for chicks, eggs and breeding stock from our heavy-laying, prize-winning, utility S. C. White Leghorns. Phone OX2 Ceres, Cal.

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Raising Poultry for Profit

QUESTIONS AND ANSWERS.

Don't Feather Well.—I have some chicks, two months old, that are not feathering good, heads are bare and but a few feathers on wings and they do not seem to be doing well.—F. L. B.

Your information is too meager. You should have told me what you fed and how you brooded, but the most likely thing is that the fault is in the brooding. They are too crowded and hot if in brooder, and if with a hen the same will apply. Some hens are very hot, and if the chicks are not in a warm room they crowd under the mother more than is good for them and it kills the feathers. Time and good feed will remedy the trouble, but they require care or they soon take cold when they are bare.

Clabbered Milk.—What amount of clabbered milk, without the whey, can be fed to one hundred hens in breeding pen so eggs will be good for hatching?—Subscriber.

This is a question which can only be answered by reasoning the thing out, for very few people, if any, have ever experimented with it. However, if the hens are not fed any other animal food or dry mash, or, in fact, mill feed of any kind, but simply grain and clabbered milk, I would not be afraid to feed them all they could or would eat once a day, and that at noon. Feed grain in litter morning and night, and the milk—clean, of course—at noon. The exercise of getting the grain out

of the litter will counteract the full feed of easy getting at noon. These hens ought to lay well without being unduly stimulated, and chicks would be stronger if the breakfast were made from sprouted oats scattered in the litter, but I would not feed anything green in connection with the milk.

Flax and Buckwheat as Feeds.—Will flax and buckwheat make good chicken feed? Will it make them lay? I have 200 R. I. Reds ten months old that have not laid an egg. What can be the cause? They are well fed, have clean, warm sleeping place.—P. M. B.

If you mean to feed flax and buckwheat green it might do, but flax as a grain can be fed only in very small quantities. It is too laxative to feed in quantity, but in a ratio of 2 pounds to 100 of other grains it is good. Buckwheat would be all right as a mixture in winter, but too heating in summer. But why bother about such feeds that are out of the usual when we have so many more that are better known and more suitable for our climate? Oats, barley, Gyp corn, rye, buckwheat, in proportion, all make good feeds that will take the place of wheat; but go slow on flax. Your Reds are lacking something in the feed, or I am sure they would lay. I see lots of them lay at five months of age. Better look into the matter; you may think you feed well, but if those pullets don't lay at ten months old, your ideas on "feeding well" are not right, or you don't give enough. The pullets are short either on quality or quantity, and perhaps both.

Droopy Turkeys.—Kindly tell me what to do for turkey hens that become droopy, heads slightly darkened, somewhat stiffened, and no appetite. They drink well and droppings are a waterish yellow. Have given a tablespoonful olive oil for four mornings; also immersed their heads in kerosene. Have kept them in a good dry coop since affected with this ailment.—Mrs. E. B., Potter Valley.

Your turkeys have a touch of liver trouble. Perhaps you have been feeding too much grain. You did not state how you fed them. The best thing now is to give them them one of "Carter's Little Liver Pills" every day for three days. Get ten cents' worth of iodide of potassium and put three grains to a quart of water and let the turks have no other drink. Dipping the heads is of no use; the trouble is internal, not external. Give a little parched wheat and cracked corn, but don't overfeed. Keep them dry and moderately warm until they recover. A little sulphur made into a pill with flour and water will help if you have no liver pills handy. Parch the wheat and corn to just light brown and let cool before feeding.

The flush season for Eastern poultry on the San Francisco market is from months of August to February, during which time there is usually an over supply.

During the past year there were no Eastern eggs shipped into California. The first time this has occurred during the past 70 years.

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BUFF ORPINGTONS—Barred Rocks, Ring-necked strain. Eggs \$2, \$3. Runner Duck eggs, \$1.50. Glendale, Fleming Ave., San Jose, Cal.

HATCHED CHICKS from Barred Rocks, R. I. Reds, White Leghorns. Good stock. Send for circular. G. L. Hawley, Madera, Cal.

THOROUGHBRED WHITE ORPINGTON Hens—One Runner Drake. Prices reasonable. J. M. Steever, Cool Cal.

LARGEST EGG—WHITEST FLESH—Black Minorcas, \$1.50 per setting 15 eggs. Edward A. Hall, R. F. D. 1, Watsonville, Cal.

CHICKENS, DUCKS, GEESE, GUINEAS, Pea Fowl, Pigeons. Wm. A. French, 545 W. Park St., Stockton, Cal.

LASHER'S HATCHERY, PETALUMA.—Write for booklet, "The Day-Old Chick Business" and price list.

WANTED—White Cornish Game Cock. Write Chas. Hertzog, Los Molinos, Cal.

PIGEONS—Choice Carneaux, \$1.50 pair. J. W. Noble, Box 513, Livermore.

TURKEYS, DUCKS, AND GEESE.

BOURBON RED TURKEYS and Eggs for hatching. My birds won all the honors in the Alameda County Poultry Exhibition in Oakland, 1914, and just as fine this year. A. E. Balmer, Alhambra Valley, Martinez, Cal.

BRONZE TURKEYS—Young stock of both sexes. Large and vigorous. Eggs in season. Order early. Free circular on turkeys, feed, etc. Albert M. Hart, Clements, Cal.

MAMMOTH BRONZE TURKEYS and Eggs. Booking egg orders now for early Spring delivery. M. M. Zelman, Planada, Cal.

CALIFORNIA TABLE POULTRY AND BROWN EGGS.

(Continued from first page.)

the same price for the brown egg as the white egg is now being considered by dealers of the San Francisco market, providing, of course, that the brown egg is graded, sorted, etc., the same as is now done with the white egg. The poultry industry for this State is growing with great strides, and Mr. Coleman states that their plant at Benicia alone will be capable of handling 1,000,000 head of poultry per year.

Economy in Modern Methods.—Mr. McCullough, of the McCullough Provision Co., states that the best modern method of handling poultry is the establishing of buying houses in the larger poultry centers. The poultry is taken to these buying houses, where it is killed, chilled, graded and packed and shipped to the central station for distribution. This method enables the buyer to pay the rancher more and by saving shrinkage, commission, expressage on coops, etc., puts a superior chicken on the market at a lower cost to the consumer. He states that under former marketing methods the shrinkage of live poultry from ranch

OLIVE TREES—Mission, Manzanillo, Ascolano. Propagated by me from trees of known bearing qualities. Guaranteed. L. T. Schwabacher, Hemet, Cal.

MISSION OLIVE TREES—Raised from my own bearing trees. This is the only sure way to get what one wants. W. A. Hayne, Box 461, Marysville.

FRANQUETTE WALNUT TREES—Grafted on Black Roots. Vigorous stock at lowest prices. Ogden Bolton, Jr., Route 6, Santa Rosa, Cal.

FOR SALE—Gold Dollar and New Oregon Strawberry plants, \$3 per M. D. R. Bannister, P. O. Box 185, Oakdale, Cal.

FOR SALE—Black Walnut Seedlings, 4-6 ft., 15c. Mazzard Cherry Seedlings, 4-6 ft., 5c. C. R. McBride, Vacaville, Cal.

QUALITY TREES—Seedlings, 5c. Prunes, 10c. Walnuts, 30c. Cash Nurseries & Seed Store, Sebastopol, Cal.

RHUBARB ROOTS—Wagner's Giant Crim-son, \$2 per hundred; 5c each. Currier Bulb Co., Seabright, Cal.

ALFALFA SEED—Why not sow the best? Write for prices to P. S. Vawter, Arbuckle, Cal.

FOR SALE—Walnut Trees. Magnolia Nurseries, Whittier, Cal.

WANTED.

WANTED—Young men and women to attend the Western Normal Courses—Normal and Academic. The Normal Course gives an adequate preparation for teaching, at a great saving in time and money. Academic course gives practical finish to education. Write for Bulletin "A," Western Normal, 524 E. Market St., Stockton, Cal.

WANTED—Position as Ranch Manager. Familiar with all details of grain, alfalfa, stock and dairy ranching, beet and bean raising. Many years successful experience. Best references. Box 450 Rural Press.

WANTED—Machinery and equipment for cannery—new or second-hand. R. G. Root, Rte. 3, Sacramento, Cal.

COUNTRY LANDS.

BIGGER CROPS and pleasanter climate are the advantages enjoyed by farmers in Eastern Washington, Northern Idaho and Western Montana. This "Inland Empire" is noted for sure crops by ordinary farming methods—without the extreme heat or cold that injures crops and takes a lot of joy out of life. Conditions are favorable for general farming, dairying, live stock, poultry and truck farming. Write for our folder, "A Farm Home For You," and tell us what kind of a place you want. Farm lands in the Northwest are bound to increase in value. Farm Development Bureau 19, Chamber of Commerce, Spokane, Washington.

HUMBOLDT STOCK RANCHES—\$10.00: Safe Sheep Range of 5000 acres on State Highway. Neighborhood controlling coyotes; three pack hounds. \$10.00: 5700 acres Cattle Ranch near Railroad. Joins Forest Reserve. 500 acres tillable. Good soil. \$4000.00: Half cash. Worth it. Will Perry Ranch with tools, Alderpoint. Se owner. Bad health. Just returned to S. F. Sold Curless Ranch, Stockton. C. E. Robertson, 105 Montgomery St., S. F.

FOR SALE—948-acre stock ranch in Napa county. Price, \$17,000 net. All modern improvements. Living creek. 125 acres hay, grain and alfalfa land. Free range adjoining. 175 head of cattle can be purchased if desired. Liberal terms. Owner, Box 363, Napa, Cal.

FOR SALE—20 acres good alfalfa or fruit land. Splendid location, 2 miles from Modesto. Fair improvements, leveled, checked. Only \$5500. \$3000 can remain 5 years. J. H. Wilder, owner, Rt. 1, Box 129, Modesto, Cal.

FREE NEW BLUE BOOKLET—State, Government and Indian Lands. Bargains overlooked. Joseph Clark, Sacramento.

to the time it eventually reaches the retailer is about 15 pounds to the 100. California imports about 300 carloads of live large breed chickens each year for table purpose, and that there is no reason why these larger breed chickens cannot be raised in this State and marketed to the advantage of the raiser when it is taken into consideration that the expense to the Eastern shipper, for freight, shrinkage, feed, etc., in shipping to this market is 5c per pound. The buying house or branch of the McCullough Provision Co. at Petaluma handled 187,461 head of poultry in 1915, and 275,868 head during 1916.

INCUBATION POINTERS.

[Written for Pacific Rural Press.]

"The trouble with many beginners is that they don't air their eggs enough," says C. H. Hosford of Riverside county, whose 15 incubators have a capacity over 6,000 per hatch. He keeps most of the incubators in a basement whose walls rise high enough above ground to supply light and air. Being in the basement, which is not wet, avoids sudden changes of temperature.

It is well not to cool the eggs too much at the start; but toward the end of the hatch, they need cooling an hour or so per day, depending on the weather, but never in a draft. More trouble comes from keeping the eggs too consistently warm than from too much cooling. Mr. Hosford left an incubator door open all night once and that proved the best hatch of the lot.

All eggs in an incubator should have been laid about the same time; for fresh eggs hatch sooner than older ones. The incubator cannot safely be opened to ordinary outside temperatures while chicks are hatching. Thus the first-hatched chicks from the fresh eggs use up the oxygen and the later ones are severely handicapped.

Incubators should have a way of ventilation and introducing moisture. If the air is too dry, pipped chicks dry out and stick to the shell. There is usually plenty of moisture when the first eggs hatch, but later ones may suffer if the hatch is very uneven.

If a chick is not strong enough to get itself out of the egg, it isn't worth bothering with and is given away by Mr. Hosford. A few of such sold as good chickens might easily ruin a reputation which has taken years and much expense to build up.

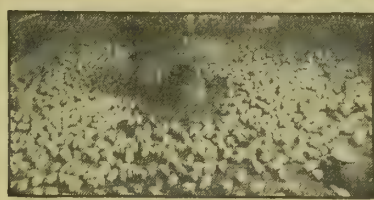
RICE AS POULTRY FOOD.

[Written for Pacific Rural Press by Geo. H. Croley.]

Rice as a food for poultry and other livestock is a very valuable ingredient, providing it is not used in excessive quantities. Rice is a very one-sided ration, composed principally of starches and heating material, and is also lacking in a number of mineral elements that are necessary for a complete food.

Rice bran is also valuable as a food for poultry when fed in moderate quantities with a variety of other foodstuff. However, it should be genuine rice bran and not a mixture containing part of the hull. The hull in which the grains of rice

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Rolled rice is being successfully fed this winter by leading California livestock men and poultrymen.

Digestible Value:
64.6% Carbo-hydrates
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HOPLAND STOCK FARM, POULTRY DEPT..

White Leghorn and White Plymouth Rock Cockerels. White Leghorns and White Rock Baby Chicks hatched from specially selected heavy-laying stock. Prices same as last season. White Leghorns, January and February delivery, \$12.50 per hundred; March, \$10.50; after April, \$10.00. White Plymouth Rocks, \$15.00 per hundred. All F. O. B. Hopland.

San Francisco Office,

1210 Flood Bldg.

grow are woody and tough and usually they carry considerable silica or small sharp sand. The hulls when ground have very rough edges and sharp points that carry small barbs that cut and tear the intestines.

The Louisiana Experimental Station tried numerous experiments and reported many cases of vomiting and death with animals that were fed rice hulls. As a result of these experiments the Station decided that rice hulls in any form were worse than worthless. Unhulled rice, or paddy, may be fed to poultry to good advantage, providing this article does not exceed 10 per cent of the grain ration. When fed in this manner the hull does not seem to cause serious injury as is the case when it is ground.

POULTRY NOTES.

Fallbrook will soon have a collection branch of The California Poultrymen's Ass'n.

The large breeds of fowls shipped from local points at present time command the same price as Eastern stock of the same type.

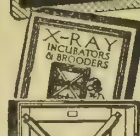
Poultry raisers should study market conditions, shipping when best prices are obtainable and not wait to ship until such time as it suits their convenience.

Sell young roosters before they get coarse, staggy and develop spurs, otherwise there is usually a difference of 4 to 6c per lb. in price between a smooth young rooster and one that has developed hard spurs.

The Pomona Valley Poultry Breeders' Association at its annual meeting, recently held, at Pomona elected the following officers for the ensuing year: Henry W. Boon, president; R. A. Condee, first vice-president; C. H. Taylor, second vice-president; Dr. E. W. Harris, secretary, and Carl Tribing, treasurer.

The American Black Minorca Club held its annual meeting during

5 New 1917 Features that Assure Record-Making Hatches



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GLOBE MILLS, LOS ANGELES, CAL.



White and Brown Leghorn Chicks, guaranteed strong and vigorous from Hogenized layers; price \$10 per 100. I use and sell Pioneer Incubators and Brooders; none better. Write for particulars. James D. Yates, Poultry Judge, Modesto, Cal.

the Los Angeles Poultry Show and elected the following officers for the ensuing year: Rowland Story or Brooklyn, president; Deputy District Attorney McCartney, vice-president, and Frank McGrann of Lancaster, Pennsylvania, secretary-treasurer.

Mrs. Best's Letter.

THE SPRING STYLES.

My dear Friends: Practically all the stores are showing spring millinery and so far there seems to be only two popular styles. One is the sailor with rather a large, high crown and either plain or rolling brim and the other is a high stiff-crowned hat with almost no brim at all. The sailor is shown either in all straw or with a facing of silk or sometimes with a facing of straw and the whole upper part of the hat covered with either silk or crepe. For general wear, the colors are dark, either blue, black or brown, but for sport wear the very same shape is developed in bright colors. The small hats are in all colors, but not as much straw is seen except in the dark shades. The brighter hats are mostly made of silk, satin or ribbon. The ribbon hats are so easy to make that any clever woman could make one at home, if she had a shape and a couple of bolts of narrow satin or picot-edged ribbon. If white is going to be popular this spring, it has been slow being shown, only a few in combinations of braid and satin are in the show windows.

Soutache braid continues to be used as a hat trimming and also on some very pretty dresses. One wonderfully attractive dress was a simple model of white crepe and serge and the serge was heavily braided with soutache. Still another was of mustard colored crepe made in a middy style with the braiding of the same color around the neck, on the cuffs and around the bottom of the middy blouse.

Khaki-kool is the name of one of the most popular silk fabrics of the spring—it is a rough silk and comes in both plain colors and fancy stripes and designs. It is used in combinations very largely and makes very stunning looking sport costumes. In the more subdued patterns it would be good for wear with sweaters. Some of the newest sweaters are in plaids—one a beautiful combination of green, gold and black, with gold sash, and another one in gold and dark grey with a sash of dark gray with gold border, and the sash worn tied in the back.

Blouses continue about the same in material and style. The crepe de chine are still tailored, plain sleeve with a cuff and many of them with the convertible collar. The Georgette crepes are a little more dressy and some of them have large collars and wide revers trimmed in lace.

One of the new fabrics is called Forestry cloth—it is a smooth-finish material in an olive green coloring and is specially recommended for tramping or general outing wear.

So far this spring there are very few radical changes in the styles—the long lines and pleated effects with loose belts seem to be just as good style for dresses as they were last winter.

The peplum blouse is very pretty for slight figures and it makes a very pretty summer dress when blouse and skirt are of the same material.

Rosabella Best.

For Unboiled Icing.—A little melted butter added to unboiled icing will prevent its forming a crust and cracking.

THE HOME CIRCLE

HOME-GROUND WHEAT BREAD.

From the inquiries that have reached this office, much interest was aroused in the article on home-ground wheat that appeared in the issue of July 27. In response to these readers, the following recipes on the use of home-ground wheat in bread-making are given.

The following recipe was worked out in the Office of Home Economics, U. S. Dept. of Agriculture: 3 cupfuls of wheat meal, or 2 cupfuls of wheat meal and 1 cupful of white flour; 1½ cupfuls of lukewarm water, ½ cake of compressed yeast, 1 level teaspoonful of salt, 1 level tablespoonful of sugar and 1 level tablespoonful of shortening if desired. Mix the yeast with a small amount of lukewarm water; dissolve the sugar and salt in the rest of the water; mix the two solutions and add all to the meal (or meal and flour). Mix thoroughly so that all the liquid is incorporated in the mass, cover and set in a moderately warm place to rise. After about 2 hours or when well risen, add the shortening and knead well, adding a little meal if necessary, until a smooth, elastic dough has been formed. Cover and set aside again to rise for about 1 hour. Knead lightly, form into a loaf, place in a greased pan and allow to rise until just double in bulk. This is only two-thirds of the usual rise in the pan when white bread is made. Bake slowly for ¾ of an hour.

Another recipe which is a little more economical and higher in food value, on account of the use of milk, follows: 1½ cups skim milk, 3 cups home-ground wheat, 1 tablespoon sugar, ¼ teaspoons salt, ½ dry yeast cake and 1 tablespoon butter or other fat.

Put the sugar and salt into a mixing bowl, scald the milk thoroughly and pour over the sugar and salt. Dissolve the yeast in a little of the liquid, add it to the rest of the liquid and beat in 1½ cups of meal. Cover and keep about 70 degrees over night or until the sponge is very light. Add enough more meal, about 1½ cups, to make a loaf stiff enough to mold without sticking either to the hands or the board. Mold in the fat now. Allow the dough to double in volume, mold into a loaf, put into a pan and allow it to rise until it meets the top of the pan. Bake 50 to 60 minutes.

To prepare the wheat for use as meal, it must be washed until the water is clear and then spread out on a cloth to dry thoroughly before it is ground. An ordinary coffee grinder will answer for the grinding.

A GARDEN CONTEST.

Every school district should have a garden contest for its children. This contest could be for a score of 400 points: (1) 200 on efficiency; (2) 100 on quality and (3) 100 on variety or the greatest number of kinds of vegetables. Efficiency in the use of space may be obtained by a succession of crops or by utilizing the ground for two crops at once. Quality should include not only the quality of the vegetable, but the condition and general appearance of the garden.

To make a success of the movement, there must be wide awake leaders to distribute directions and give advice, and interested men of the community to furnish the prize money. If the contest is under the supervision of the teacher, the ground for the gardens should be near the school. Otherwise it is just as well to be at each child's home. The judge of the gardens should be some one of standing whose verdict will be accepted without question.

STANDARDIZED DRESS.

The women of the Resartus Club of Stanford have adopted a style for official dress that it is hoped will be generally accepted for college wear. The skirt is to be four-gored, opened in front, with a bias seam in back, comfortably short and reasonably full and the blouse is to be belted, open at the throat with turn over collar. Collar and cuffs of white material may be worn. At one Middle West school, this pattern is used for all dresses, varying the material as the occasion requires.

BURNED KETTLES.

If you are unfortunate enough to burn a granite kettle badly, do not scour it with a scouring soap, for you are likely to chip the enamel and thus make the pan unfit for use again. Instead, sprinkle a little lye in it, add water and let boil until clean. This makes the pan almost like new again.

TO SET COLOR.

To keep color from running in colored materials, when washing put 1 tablespoon Epsom salts into 1 gallon of water and even the most delicate will not run or fade. Use in the rinsing water as well.

LIVING WITH OTHERS.

It costs to live with people. We have to give up many of our own preferences to please them. We have to deny ourselves many enjoyments, so as not to give them pain.

ENGLISH BEEFSTEAK PIE.

Rub a baking dish with onion, butter it well, sprinkle with chopped parsley. Cut steak (upper round) into thin pieces, 3 or 4 inches long. Season with salt and pepper. Cut thin slices of bacon, same size, and roll up in the steak. Pack the dish with these little rolls; pour over this 2 cups rich soup stock or gravy, well seasoned. Now add ½ teaspoon Worcestershire sauce with 1 or 2 hard-boiled eggs sliced. Sprinkle fine chopped parsley over all. Cover with crust with openings to let steam escape; bake until crust is done. For the crust, use 1 cup flour, one-third cup lard, one-third cup water, and one-half teaspoon salt.

Floral Department.

[By Geo. N. Tyler.]

MOLES—SEED SOWING.

I have had a query this week in regards to moles. I am greatly troubled with them myself, so here is an article from the Florist's Review, which looks good, and I will certainly try it:

I read the letter of F. W. & Co. in the Review stating that they are troubled with moles in their sweet pea beds. Some years ago I was annoyed by moles just as F. W. & Co. are and I tried almost every known remedy, but without avail. Then one of my employees, an old man from Holland, told me that if I would procure some salt fish he would rid the place of the moles. Surely enough in less than two weeks not a trace of the pests could be seen. He dug holes in the runs, dropped into them pieces of the fish about the size of a walnut and then closed the holes. He told me to repeat the dose if any of the moles returned. I spread the good news to my neighbors and they also have freed their places of moles by following the same method. The old man explained the operation of the remedy by stating that the moles love fish and the salt kills them. Whether that is the right theory or not, the plan worked well for me and may do so for others.—W. M. Coleman.

You can now sow seeds of the tender annuals. Marguerite carnations should be sown now. Get a good strain of seed (they bloom in four months from seed) and at least seventy per cent of them will come double.

Sow cosmos now as described in my last article, also ten weeks stock, calliopsis and coreopsis, corn flower, larkspur, gaillardias, lobelia, feverfew, salpiglossis, cannas; maurandia vine for hanging baskets, and as a climber for the greenhouse.

In sowing fine seeds such as petunias, begonias, etc., take a seed pan, put in ample drainage, and about two inches of finely prepared soil. Water with boiling water, and after the soil has cooled sow the seed evenly on top of the soil and cover with a glass or piece of paper. Keep warm and shaded until they germinate, then give more light and air.

Sow asters as follows: I grow Vick's late branching for cut flowers and my own use. Prepare your flats as described in last article. Firm the soil down and water in an hour or two; sow the seed on top of the soil and cover with one-fourth inch of fine sand. They must be in a warm place and protected from frost. A cold frame or green house is just the place. In watering seeds or seedlings do so in the morning with lukewarm water, for if you water them at night, the damp surface is liable to produce a fungus, which will cause most every plant to damp off during the night. This especially applies to all fine seed plants, and also to asters, etc.

RAISIN AND RHUBARB PIE.

If you have never eaten raisin and rhubarb pie, you have missed one of the most delicious of pies. Here is the receipt for it: 2 cups seeded raisins, chopped; 2 cups rhubarb, cut in ½-inch pieces; 1½ cups sugar. Stir together and add one egg well beaten. Line a pie tin with crust, add the mixture and place bits of butter on before adding the top crust. This quantity will make 2 pies.—Contributed by Mrs. W. L. M., Visalia.

POOR SPELL.

I cannot spell—I wish I could. The dictionary is no good. To aid a boy in spelling write, And mother is too busy quight, She never can take time to seigh. Whether a horse should 'ney' or 'nay.'

Whether a pen: "The pretty flour Came up and withered in an ow'r," Or not, and anyhow I trigh. It's not correct or even ny, I'd like to be a savage, thain I'd never need to spell agen!

—Selected.

UNDER THE MESQUITE.

Nan and Don Rogers crawled in under the mesquite bushes to get away from the hot sun.

They longed for the green grass and the cool shade of the tall maples they had always played under in the North. But away down here in New Mexico there were no trees, just scrubby bushes and burning sand that stung their bare feet when they ran about in it.

Nan and Don had been playing tag among the Spanish daggers. The Spanish daggers are tall plants with long, narrow, sharp, tough leaves that are like daggers.

The children were very hot and tired. So they were glad to lie under the mesquite and rest, even

though the shade was "patchy."

Small Don liked to watch the queer little animals, especially the lizards that seemed all tails, and the funny horned toads, darting about here and there in the sand. But Nan was afraid.

Whenever one came near her she just drew her feet up under her and screamed.

This delighted Don, who thought it very silly and very cowardly of Nan to be so frightened. So he laughed at her and teased her about it.

Pretty soon, however, something happened. Just as active Don was beginning to tire of watching the little creatures, and Nan was ready to cry, a rabbit, a cotton-tail, came up and peered through the bushes at them.

Both children kept very still so as not to frighten it. It came so close than Nan almost could touch it. Then suddenly it turned and bounded off, its short white tail looking for all the world like a little bunch of cotton sticking to it. That is why they are called cotton-tails.

As the children watched it, breathlessly, hopping in and out among the bushes, all at once Don gave a great scream—oh, a much greater scream than any Nan had given!

"What is it, Don?" Nan cried anxiously as she saw him grasp a chubby foot.

But Don only screamed louder and louder.

Then she saw, and her little face grew white. A centipede had fastened itself to Don's bare ankle.

Now Nan was more afraid of a centipede, with its many little feet, than of anything else, and usually nothing could have induced her to touch one, and she always ran just as fast as she could to get away from them. But now, in spite of her terror, she reached out her little hand and jerked the thing from Don's ankle instantly. Then she hurried him home to mother.

By the time they reached the house, Don's ankle was all red and swollen, and how it did smart! But mother bathed it, and put some cooling medicine on it, and wrapped it in soft cloth, and said it might have been a great deal worse if Nan hadn't acted so quickly.

The next morning Don's ankle was very much better. But you may be sure he never again called Nan a coward or teased her for being afraid of little wild creatures.—Bessie C. Paine, in Sunday School Times.

Good Health.

[By H. E. Pastor, M. D.]

A Commendable Work.

Canned goods are growing in favor yearly under more careful supervision of the raw material and the observance of more sanitary conditions in the cleaning and preparation of the vegetables and fruit used. Adulteration and other forms of sophistication are happily growing rarer, so that it is now quite possible to buy in the open market wholesome and palatable canned goods at those seasons of the year when there is a dearth of the fresh article, as well as at other times. It is disappointing, therefore, to read in the California State Board of Health re-

port for December (1916) of a flagrant case of disregard of sanitary regulations by a tomato-canning concern in Alameda county. A Health Department official, accompanied by two inspectors, visited this plant late last year, and found there much moldy and rotten stock awaiting processing. It is regrettable in the extreme that any company engaged in the work of preparing food for human consumption should be so criminally callous of the health and lives of its prospective patrons as to deliberately use unfit raw material in the manufacture of its output. On the other hand, it is gratifying to be reassured that, as a result of rigid inspection by the public health authorities, sanitary conditions are observed by canners generally, and that very little unfit food-stock gets by undetected.

The Rural Press is glad to note the persistency of the Bureau of Foods and Drugs of the State Board of Health in ferreting out and prosecuting firms engaged in the manufacture of food products which are given to unsanitary practices and the use of unfit raw material for canning purposes.

Get the Habit of—

1. Early rising.
2. Retiring early.
3. Eating slowly.
4. Seeking the sunshine daily—when there is any.
5. Daily physical exercise.
6. Laughing at misfortunes—your own, not others'.
7. Cleansing your teeth just before retiring—at least.
8. Masticating well every mouthful of food.
9. Gargling the throat with cold salt water after cleansing the teeth.
10. Not coddling yourself when winter comes; too much clothing is not desirable nor hygienic.
11. Having fresh air in the bedroom the year round.
12. Relaxing mind and body when you retire; do not try to hold the bed up.
13. Observing the correct poise and carriage of your body.
14. Exercising before a daily bath and taking a vigorous rub afterward.

This list is not original, though it is almost as good as if it were. We fell upon it in a chance magazine, but did not hurt it, so present it to our readers.

Don't Neglect.

Adenoid growths in children are much more common than is generally supposed, and the bad effects of their presence is underestimated. They frequently interfere with speech and are liable to cause partial deafness. Their effect, too, on the mentality is very decided, causing children of fair average brain power to appear dull and stupid. The presence of adenoids is easily diagnosed, the victim among other things being marked as a "mouth breather." The operation for the removal of adenoids is as simple as the diagnosis, and should under no circumstances be neglected. If you suspect any of your children to be suffering from this troublesome affliction, you had better have an examination made at once.

Strange, but True.

If some form of eugenic law had been enforced in the last generation many enthusiastic eugenicists wouldn't be with us today.

Is cigarette smoking becoming "effeminate"? Then stop it.

A New, Better and More Satisfactory MAIL ORDER SERVICE

For Everyone Out of Town
Who Wants a More Livable,
BETTER Furnished Home!

We maintain a Personal Service Shopping Bureau especially for the benefit of our out-of-town customers. Every order is given the same attention by our expert shoppers who buy FOR YOU, as though they were buying for themselves. They seek the very best values in our stock FOR YOU. They take advantage of the very best BARGAINS. They give your instructions the greatest possible care.

Write for what you want. We send, in many cases, for your inspection, actual photographs of furniture upon our floors, which we believe will best meet your preferences. We quote you prices of the very best values in our stock. We enable you to secure the very newest products of the very best factories, and at lowest possible cost.

We send drapery samples, wall paper samples, etc. Tell us as nearly as you can what you wish and we will make special effort to meet your demands.

We pay the freight 100 miles and part of the freight for greater distances. Careful packing, prompt shipments.

All goods GUARANTEED ABSOLUTELY AS REPRESENTED and SATISFACTION ASSURED. Write us. Address MAIL ORDER DEPT.

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ESTABLISHED - 1880

Complete Home Furnishers

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NORWALK TIRES

7500 Miles
Guaranteed for
Ford Sizes.
6000 Miles,
Larger Sizes.

The most efficient non-skid casings ever produced.

Ask for folder and price list.

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Corner Pico and
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A 5. % solution of Epsom salts applied hot for 4 to 6 hours is said to relieve poison oak.



COFFEE

3 lbs. for \$1.00.

I sell from 20,000 to 30,000 lbs. of coffee every month. By buying direct from the growers, doing my own roasting and selling direct to the consumer, I do away with two middlemen's profits. That's why I can give you so much for your dollar.

Long's Best Coffee has a flavor and aroma that will win your instant approval. It is a blend of four mountain grown coffees, and hence high-flavored.

Long's Best Coffee Delivered to Your Door by Parcel Post. Roasted the moment before it is sent to you. 3 lbs. for \$1.00.

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S. H. Galvanized Corrugated Iron—100,000 feet like new at big saving.

Vitrified pipe P. P. I. E. stock—2 carloads at 1/4 regular price. One car poultry netting—any quantity at wholesale prices. 2100 Rolls Ready Roofing—90c, \$1.25, \$1.50, with nails and cement.

2 carloads new nails, \$3.95 base.

Lumber and Plumbing.

A Whole Block of Bargains.

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The Place that Beats Them All.

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NURSERYMEN—SEEDMEN—EVERYBODY! Crego's Lavender and White, Giant Branching Lavender and Pink, Rose King and Violet King. Fine Mixed, Separate Colors, 5c pkg.; 1/2 oz. 50c; 1 oz. 75c; pound, \$6.00. Mixed, 50c an oz.; pound, \$5.00.

Foster's Flower Seed Farm,
1468 Locust St., Pasadena, Cal.

Specialists in Specimen Stock for
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Hardy Rhododendrons, Azaleas, Boxwoods, Hollies and a complete line of Coniferous Evergreens.
WRITE FOR PRICES.

Cottage Gardens Nurseries, Inc.,
EUREKA, CALIFORNIA

SAN FRANCISCO.

San Francisco, Feb. 7, 1917.

WHEAT.

Local trading in wheat has been very light during the past week and only one notable change is to be found in the quotation list. California Club is bringing five cents per cental higher. This advance is the result of one firm's buying to fill a shipping order to South Coast ports.

Sonora wheat	.....\$2.75@2.80
Northern club	.....2.70@2.75
Calif. club, cti.	.....2.65@2.70
Northern Bluestem	.....None offered
Northern Red	.....None offered

BARLEY.

Sales of barley are held back by the light offerings but the demand is not heavy enough to bring an advanced price. The long dry spell in the country sections has brought ready sale for all feed barley and this offering is bringing as high as \$2.30 per cental. Not enough brewing stock is held here now to warrant quoting.

Seed, cti.	.....\$ 2.50
Shipping, cti.	.....2.35@2.40
Brewing	.....Nominal
Choice feed, cti.	.....2.25@2.30

OATS.

The offering of red seed oats from Texas at \$2.75 to \$2.90 per cental has been the feature of the past week's trading in this line. White oats of inferior grade were shunted onto the market by some up-state dealers and the quotation on this grade broke to a top of \$2.25 per cental. Red feed stock is practically cleaned up and the quotation remains nominal at last week's level.

Red feed	.....\$1.85@2.00
White	.....2.15@2.25
Red seed (Texas)	.....2.75@2.90

CORN.

The snow blockade in the East proved effective in holding prices on corn steady during this past week, as only one car has reached here to date. Eastern varieties are particularly hard to get, and this shortage has been reflected in a better call for California stock.

[First-hand prices on strictly first-class grain, San Francisco.]

Eastern Yellow, cti., bulk	.....\$2.15@2.22½
California, sacked	.....2.20@2.25
Milo Maize	.....2.00@2.20
Egyptian	.....2.25@2.50

BEANS.

Prices on several varieties of beans were advanced this past week, but this cannot be of much benefit to the producer, as very little stock is left in first hands. Humboldt growers are still shipping in small lots of Lady Washington and red Kidneys, but seem to feel that it would be advisable to hold their stock in the warehouse here for a time. Limas are being held firm at \$3.25 in the South, but the call has been only average and local offerings at \$3 have proven sufficient to care for the demand. Cranberry, bayo and Mexican red beans have all advanced and trade sentiment seems to favor a further advance on limas and small whites.

[Uncleaned, on wharf, San Francisco.]	
Bayos, per cti.	.....\$6.40@6.65
Blackeyes	.....4.50@4.75
Cranberry beans	.....6.75@7.10
Horse beans	.....3.25@3.50
Small Whites (south)	.....7.00@12.50
Large Whites	.....8.10@9.50
Pinks	.....6.90@7.10
Limas (south, re-cleaned)	.....7.85@8.00
Red Kidney	.....9.00@10.00
Mexican Reds	.....6.00@6.50
Tepary beans	.....7.00@7.25

HAY.

With the exception of alfalfa hay and baled straw, there was a general advance in hay prices last week. Offerings were of about the same volume as for the preceding week, but the country call was much heavier. The prolonged drouth has been the cause of heavy buying by dairymen and stockmen and many producers who sold hay around \$16 to \$18 per ton are being forced to buy it back at prices far about these figures. City trade continues light. The hope is being expressed that the warm weather which has marked the start of this month will continue, as it will mean at least a partial supply of green feed and will do much to relieve the tenseness of the present situation. It is reported that in a few sections the stock is on the verge of starvation. This has resulted in a call on the hay districts from other interior sections, causing a very apparent shortage for the city trade. Such stock as remains in farmers' hands is being held until rain is received and it is practically impossible to purchase any of the few lots remaining in first hands.

[Price per ton, carload lots, San Francisco.]

Wheat, No. 1	.....\$18.00@20.00
No. 2	.....16.00@18.00
Tame oats	.....15.00@19.50
Wild oats	.....15.00@17.00
Alfalfa	.....14.00@17.00
Stock hay	.....14.00@16.00
Straw, per bale	......70@.90

FEEDSTUFFS.

The situation as affecting feedstuffs remains practically unchanged from last week, with rice middlings offered at slightly easier prices and alfalfa meal commanding a somewhat better figure.

[Per ton, San Francisco.]

Root Pulp, per ton	.....\$30.00@31.00
Alfalfa meal, per ton	.....22.00@23.00
Bran, per ton	.....30.00@31.00
Oil Cake	.....40.00@41.50
Cocanut cake or meal	.....31.00@32.00
Cracked corn	.....47.00@48.00
Middlings	.....37.00@40.00
Rolling Barley	.....46.00@47.00
Tankage	.....47.00@48.00
Rolling oats	.....46.00@47.00

THE MARKET REPORTS

Figures Given Are Independent and Reliable.
Prices Quoted as Paid to Producers.

Rice middlings 31.00@33.00

POTATOES, ONIONS, ETC.

With the market in the practical control of three wholesale firms, the price on onions is being forced higher every day. Ice house goods is being held at \$10.00 per cental while street sales are commanding \$6.50 to \$8. There is very indication that the market will go still higher. Salinas potatoes are practically out of this market. Deltas are bringing up to \$3.40 per cental with Oregon stock commanding a ten cent premium over this. The offering of Southern celery has had a very marked effect on the price for delta goods, the latter declining to a top of \$3.50 per crate. What few California tomatoes came to hand dragged at unchanged prices, the lots being of generally poor grade.

Lettuce, crate	.....\$1.25@1.75
Celery, Delta, crate	.....2.75@3.50
do, Southern, crate	.....3.75@5.00
Tomatoes, crate	......75@1.25
Rhubarb, box	.....1.50@1.75
Potatoes, cti., Delta	.....3.00@3.40
Salinas	.....Cleaned up
Oregon	.....3.30@3.50
Onions	.....6.50@8.00
Garlic, lb.	......3@4½c

POULTRY.

The general trend of poultry prices has been upward, the snow blockade having delayed Eastern offerings while California producers show a tendency to ship in lighter quantities. The start of the laying season has halted receipts of hens to a marked degree and quotations on this line are higher. Dressed turkeys have held about steady with live fowl easier under a slower call. Belgian hares have advanced.

Turkeys, live, lb.	.....23@24c
do, dressed, large, lb	.....26@28c
Turkeys, live, lb.	.....24@25c
Young, large	.....25c
Broilers, 18 lbs. to doz and less.	.....28@30c
do, over 18 lbs. to doz	.....25@27c
Fryers	.....24@26c
Hens, extra, per lb. colored	.....20@22c

Small leghorn	.....19@21c
Smooth Young Roosters, per lb.	.....23@26c
(3 lbs. and over)	.....23@26c
Geese, per lb.	.....19@21c
Squabs, per lb.	.....40@43c
Ducks	.....20@22c
Old	.....22c
Belgian Hares	.....13@15c

BUTTER.

Increased receipts and a very decided drop in the demand, the result of the high prices in effect the first of the week, brought a lower closing on butter quotations. On last Thursday the extra grade of butter was quoted at 43½ cents per pound, a record figure for February during the past five years. This resulted in retail prices of \$1.00@1.05 per two-pound square and the trade in groceries promptly dropped off to such a degree that lower prices were made necessary to move current receipts. The Northwest was a light buyer here. More than 100,000 pounds of butter was shipped to Los Angeles this week. Local conditions point to an easier market, the opening weather for February portending plenty of green feed and more butter.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extra	41	43½	40½	37	38	38
Prime	40½	42	40	36½	36½	36½
Firsts	37½	37½	37½	36	36	36

EGGS.

Quotations on eggs closed the week one and one-half cents lower than final prices for the preceding week. Heavy receipts have been well handled, a heavy shipping call having served to steady the market. About four cars have been sent to Seattle from here and Petaluma, three cars to Eastern points and one car to Los Angeles.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extra	35	35½	36½	34	34	33½
Sel. Pul.	31½	32	33	31	29½	30

CHEESE.

The cheese market continues firm, with a good shipping demand figuring in keeping prices up. The East is still a buyer here, with two cars of Flats sent from here and six cars from in-

Special Citrus Market Report.

Los Angeles, Feb. 6.

Shipments of citrus fruit from Southern California from November 1 to February 4: oranges 5,713 cars and lemons 1,319 cars. Same time last year: oranges 4,174 cars and lemons 1,387 cars.

Shipments from Central California from November 1 to Feb. 2: oranges 3,957 cars and lemons 141 cars. Same date last year: oranges 4,138 cars and lemons 119 cars.

There was less life in the markets the past week and they were hardly so firm. The very cold weather interfered with the movement of oranges and lemons and caused buyers to hold back and go slow and this caused a weaker tone to the market. Good highly colored oranges sold in a fair way, but all others were draggy and weak. Lemons held up better than oranges, not so many going forward. Locally the week was another dull one with local packers. The market was overrun with culls, which worked much against the regular market. Packers bought sparingly, but when they did, paid last week's prices, 1c per pound for good highly colored oranges in the grove picked. Grapefruit

is still 2c per pound in the grove picked for best northern. Southern is not ripe enough yet to attract attention. Tangerines slow sale at 1@2c per pound in the grove picked. Lemons were in very good supply and dull and weak. Packers bidding 1@1½c per pound in the grove picked for the best of them. Poor sell for what you can get. But always below 1c per pound in the grove picked. The weather just now is having much to do with the markets East and until it becomes more moderate little improvement need be looked for.

AUCTION SALES.

New York, Feb. 5.—Market steady on oranges, but easier on lemons. California navels averaged \$1.95@2.10. Lemons averaged \$2.00@3.00.

Boston, Feb. 5.—Twelve cars sold, market unchanged on oranges, doing better on lemons. California navels averaged \$1.75@2.50. Lemons averaged \$3.00@3.45.

Philadelphia, Feb. 5.—Two cars sold. Market unchanged on oranges, slightly lower on lemons. California navels averaged \$1.70. Lemons \$2.40@2.65.

Rice Market Confronted with Large Crop.

With 65 per cent of the California rice crop of 1916 still in the growers' hands, pre-emption of export and Eastern markets by an extra large southern crop; lack of water transportation, together with recent decision of Inter-State Commerce Commission raising the freight rate east of Denver, the local market remains in a demoralized condition.

Statistically the situation is not favorable to higher prices, which are figured on a basis of \$1.70 per cwt. for No. 1 paddy f. o. b. San Francisco. Normally the consumption of clean rice in the U. S. is 6,500,000 pockets of 100 pounds each. During 1915 the production of the country was 7,000,000 pockets leaving a carry-over of 500,000. This with the 1916 crop of 9,500,000 pockets makes a surplus of approximately 3,500,000 pockets.

The 1916 California crop is still further handicapped by lack of quality, millers estimating that two weeks longer in the field would have improved it fully 20 per cent. Local consumption is being increased somewhat by stockmen and poultrymen, and the high cost of living is evidently aiding in the disposition of the Southern crop. An increased trade in brewer's rice, rice flour, breakfast foods, etc., is also proving a factor in distribution. Southern rice is being crowded out of Coast markets to the extent of 30 per cent.

Millers declare that present prices may be lowered later as much of the immature rice held will not keep, necessitating immediate dumping of large quantities on this market. Lack of proper organization in 1916 is given as the chief cause for the present situation.

J. W. E. Barnard submits the following estimates of 1917 acreage: Gridley, Biggs, Richdale, will reduce last year's areas about 60 per cent; slight increase in Marysville district; Chico and Butte City will increase about 40 per cent; Willows about same acreage; Yolo county about 25 per cent increase and the San Joaquin Valley will plant about 7,500 acres.

terior points during the past week. The Eastern demand for cheese is so good that one dealer has taken a car of Eastern goods from the ice house and sent it back to its original shipping point, paying freight two ways and storage charges here and still realizing a profit on his first cost.

Y. A's	.....20½c
Fancy Calif. Flats, per lb.	.....19c
Monterey Cheese	.....17@19c

DECIDUOUS FRUITS.

Storage withdrawals of apples continue at a heavy rate, the last weeks total being 16,000 boxes in excess of that for the preceding corresponding period. Storage holdings in local warehouses at the start of this week were 216,000 boxes, about 75 per cent of the total on hand a year ago at this time.

Apples:	
Bellflower, box	.....\$.60@.75
Newtown	.....1.19@1.25
Pears, Winter Nellis	.....2.50@3.00

DRIED FRUITS.

Trade in dried fruits is generally held up by the war developments and most of the packers are said to have called in their men for the time being. This is especially true of deals which had been pending with Eastern interests. The spot trade, which is of little interest to the farmers because of the light holdings in first hands, has shown no developments of note. Apricots, spot prunes and pears are somewhat higher with very little stock of either apricots or pears on hand. In bids on futures, local houses are not showing any inclination to advance. However, their evident desire to close contracts indicates that a generally firm market is expected. Figs are still the center of interest with more attention being paid to prunes. Offers on 4-size prunes, 1917 crop, are now 5@5½ cents per pound and general indications point to a further advance. Exports of dried fruits during January was nearly twenty per cent greater than during January, 1916.

[Net to growers, bulk basis, f. o. b. shipping point.]

Apples, new crop	.....8. @ 8½c
Apricots, per lb., 1916	.....15. @ 16½c
Figs, black, 1916	.....6½ @ 7 c
do, 1917	.....6 @ 7 c
do, white, 1917	.....6½ @ 7½c
Callimyrna, 1917	.....10 @ 11 c
Prunes, 4-size basis, 1917	.....5 @ 5½c
Prunes, 1916	.....5½ @ 7½c
Pears	.....7 @ 8½c
Lake County Pears	.....11 @ 12½c
Peaches, 1917	.....6 c

HIDES.

Hide prices met no important changes during the week, with buyers holding off. Uncertainty rules in the Eastern markets and local dealers are afraid to make any decided steps at the present time.

HOPS.

Quotations on hops were unchanged during the past week. While some contracting for next year has been reported in Oregon and Washington, the local buyers seem satisfied to wait a short while before starting the campaign in earnest.

Sacramento	.....8 @ 9c
Sonoma	.....10@11c
Mendocino	.....9@10c

HORSES.

Drafters, 1700 lbs. and up	.....\$ 250
Drafters, 1550 to 1650 lbs.	.....150@200
Chunks, 1350 to 1500 lbs.	.....150@175
Wagon horses, 1050 to 1350 lbs	.....110@150
Green Mountain range horses	
950 to 1200 lbs.	.....20 @ 75
900 to 1200 lbs.	.....50@100
1000 to 1200 lbs.	.....150@175
1200 to 1400 lbs.	.....175@200

GROCERIES.

Flour prices still hold steady in the local market but declines in Oregon and Washington indicate that easier prices may be expected here. The decision of the Interstate Commerce Commission lowering freight rates between here and Utah should be a further factor in this, as the Utah millers can now lay stock down here cheaper.

LOS ANGELES.

Los Angeles, Feb. 6, 1917.

BUTTER.

Receipts of week ending Feb. 6, 1917	.....208,713
Receipts of week ending Feb. 6, 1916	.....347,010

The market closed the past week sharply lower than the week before. While the receipts were somewhat better than last week, yet in the absence of cold storage stocks, were all needed for the consuming trade, which was good. Hence the first part of our review week there was a sharp advance under light offerings, the improvement up to Friday reaching 3½c. This caused a better movement to market and since then prices have worked lower, closing 4c off compared with a week ago. In Chicago extras closed the week 1½c higher and in New York 3c higher than a week ago. This failed, however, to check the late break here in the face of expected better receipts.

We quote extra creamery	.....38c
Prime first	.....36c
First	.....35c
1917	.....42 43 45½ 41½ 38 38
1916	.....32 32 32 33 33 33

EGGS.

Receipts (railroads) for week ending Feb. 6, 1917—1457 cases. Receipts (railroads) for week ending Feb. 6, 1916—1933 cases.

A rather firm and steady market was had the past week. Receipts were only fair and lighter than the same week last year. Cold storage stocks have been exhausted which also had a bul-

Optimistic Feeling Among Egg Dealers.

Although the present egg market is admittedly a speculative one, dealers confidently expect prices to remain steady to firm for the immediate future at least. Lowering of the recent high prices has allowed speculators to operate on a satisfactory margin in Eastern shipping, relieving the local market of the increased supplies and aiding in stabilizing the market.

The feeling is optimistic in all quarters, contributing factors for this being: high Eastern quotations because of egg shortage; better quality of eggs as a result of newly formed producers' association; high cost of other foodstuffs which will increase egg consumption at the present quotation.

ish influence, yet prices show but little change. Consumptive demand good to the extent of the supply, though there was no speculation as hens are laying more freely now and it is the time of year for lower values here on the coast. In Chicago firsts are 3½¢ higher than a week ago and in New York 4¢ higher. This advance, however, failed to influence the market here on the coast. We quote fresh ranch case count...

Extras	34¢
Pullets	35¢
Ranch	34½¢ 35 35 35 34
Extras	33½¢ 33½ 34 34 34 35
Pullets	32½¢ 33 33 33 33 33

POULTRY.

A steady and rather firm market was had the past week for all good poultry. There were no Eastern shipments in and the local receipts were only fair. Broilers, fryers and hens all moved without trouble. Ducks sold in a fair way and there was a good demand for turkeys at full quotations. Roasters also sold without trouble.

We quote from growers:

Broilers, 1½ to 2 lbs.	26¢@27¢
Fryers, 2½ to 3 lbs.	23¢@24¢
Hens, over 4 lbs.	20¢@21¢
Hens, under 4 lbs.	17¢@18¢
Ducks	19¢@20¢
Geese	16¢@17¢
Roosters, 3 lbs. up (soft bones)	22¢
Turkeys, heavy, 12 lbs. and up	28¢@29¢
Turkeys, light	24¢@25¢
Squabs, live, per doz.	\$1.50@3.00
Dressed	3.75@4.85

HONEY.

Stocks pretty well exhausted and the crop is said to have been marketed. Some little demand was had; replenishing stocks, and extracted was advanced ½¢ @ ¾¢. Comb was unchanged. While

there was some little demand there was no disposition to buy ahead, the demand being confined to supplying immediate wants. Beeswax in good demand and higher.

We quote from growers:

Water white, pound	8½¢
White sage, lb.	8¢
Light amber sage, lb.	7½¢
Light amber alfalfa, lb.	7½¢
Fancy white comb, lb.	10¢
Light amber comb	9¢
Beeswax	30¢

HAY.

There was more in the past week, mostly grain hay which was slow sale and weak. While grain hay was slow sale alfalfa was in very good demand and offerings only moderate. Outside dairies as well as those here at home wanting alfalfa and what selling brought more money under the influence of scarcity. Receipts for the week 234 cars.

We quote f. o. b. Los Angeles:

Barley hay, ton	\$18.00@20.00
Oat hay, ton	19.00@21.00
Alfalfa, northern, ton	17.00@18.00
Alfalfa, local, ton	19.00@21.00
Straw, ton	9.00@13.00

BEANS.

The market remains unchanged from a week ago. There was some little movement in limas, whites and pinks at quotations, but blackeyes and tepary were very dull, the high prices causing buyers to hold back and buy sparingly.

We quote from growers:

Limas	\$8.00@8.25
Large white	10.00@10.50
Small white	10.00@10.50
Pinks	7.25@7.50
Blackeyes	5.25@5.75
Tepary	5.75@6.25

Special Livestock Market Report.

Los Angeles, February 6, 1917.

CATTLE: While a steady and fairly good market was had the past week, buyers seemed less anxious for supplies than the week before. There were more offering, and killers in consequence, more independent. But as the Eastern markets were all good and strong there was a sympathetic influence which kept prices up to last week's figures.

Per cwt. f. o. b. Los Angeles:

Beef steers, 1000 to 1100 lbs.	\$8.75@9.00
Prime cows and heifers	7.00@7.25
Good cows and heifers	6.50@7.00

HOGS: There were not so many hogs in the past week and under light offerings and continued high markets East, mixed packing and lights were advanced 25¢ per cwt. Killers were all in the market, and as a fairly active demand was had for fresh pork, they were persuaded to bid up stronger for all good hogs. California and Arizona furnished most of the supply. But few Idaho hogs in.

Per cwt. f. o. b. Los Angeles:

Heavy, averaging 250@300 lbs.	\$9.25@9.50
Mixed, 200@250 lbs.	9.50@9.75
Light, 175@200 lbs.	9.50@9.75

Rough docked 20 pounds, piggy sows 40 pounds and stags 40 per cent.

SHEEP: A firm market and good demand was had the past week for what came in. Supply only fair. Utah and Idaho continue to furnish most, and gave us some very good sheep and lambs. Killers all in the market and wanted supplies and more could have been sold here at full quotations.

Per head f. o. b. Los Angeles:

Prime wethers	\$8.00@8.25
Prime ewes	7.50@7.75
Yearlings	7.50@7.75
Lambs	7.50@8.00

CALVES: But few coming in and what arriving in good demand and firm. Selling at \$8.50@9.50 per cwt.

San Francisco, Feb. 7, 1917.

[Prices paid for stock, live weight, off cars, without feed or water, at Stock Yards, South S. F. Hog prices subject to seller standing one-half of all hogs condemned by government inspectors.]

BEEF CATTLE values received another advance early this week as a result of the continued shortage of supplies. Receipts are sufficient to supply the demand for the time being but killers are fearful of the supply in March and April and consequently are conserving their feed lot supplies as far as possible. Unless decreased consumption results from present high prices packers see no immediate chance of lower prices.

Steers, No. 1 8½¢ @ 9¼¢
No. 2 8¼¢ @ 8½¢
Cows and Heifers 7½¢ @ 8¢
No. 2 7¢ @ 7½¢
Bulls and Stags 5½¢ @ 6½¢
CALVES, light 9¢ @ 9½¢
Medium 8½¢ @ 9¢
Heavy 7¢ @ 8¢

HOGS again advanced on this market with supplies reduced in size, although offerings the early part of the week were somewhat more generous. No Idaho hogs are reaching this market, coming from California points.

[Rough, docked 20 pounds, piggy sows, 40 pounds, stags 80 pounds.]

100 to 150 lbs.	8½¢ @ 9¼¢
150 to 300 lbs.	10¢ @ 11¢
300 to 375 lbs.	10¢ @ 10½¢

SHEEP and LAMBS continue to advance in face of almost famine supplies. Practically everything in the sheep line is cleaned up and what few

lambs that are being slaughtered are mostly from Utah. Killers say they are losing money on sheep and lamb business as they are operating on a cost basis almost as high as Eastern killers and are unable to turn at profitable wholesale prices.

Prime Wethers 9½¢ @ 10½¢
Ewes 8¢ @ 8½¢
Lambs 12½¢ @ 13½¢

WOOL prices remain unchanged with a cessation of buying in the Red Bluff district and some activity in San Joaquin valley reported. A good part of the fall clip is said to be contracted for. No activity as yet is reported from Mendocino. Very little wool moving in Eastern markets but the price is quotably higher and local dealers are looking for still higher prices. War declaration would probably improve prices considerably.

Sacramento Valley, spring clip. 22¢@30¢
Mendocino, year's 32¢@33¢
Southern, spring clip 26¢@28¢
Southern, 7 months 13¢@16¢
Imperial Valley, 7 mos. 14¢@15¢
Nevada, year's 31¢@32¢

Hide trade is still inactive, no demand having appeared for two months but holders here look for an improvement and are holding steadily.

Steers	21¢ @ 23¢
Cows	21½¢ @ 23¢
Light hides, 25 to 48 lbs.	21½¢ @ 23¢
Kip	20¢ @ 22¢
Calf and veal	29¢ @ 30¢
Dry Hides	32½¢ @ 33½¢
Dry Kip	35¢ @ 36¢
Dry Veal and Calf	38¢ @ 40¢
Pelts, long wool	\$2.25@2.50
Short wool	1.25@1.50
Horse hides, wet, large, ea.	5.00@5.50
dry, large	3.00@3.50

North Portland, Ore., Feb. 5, 1917.
CATTLE: With 1300 head of cattle unloaded for today's market the cattle pens were a scene of activity, and there was a very good demand for all good beef. Buyers from all coast butchers and packers having good-sized orders and the large supply was quickly bought up at steady to 10¢

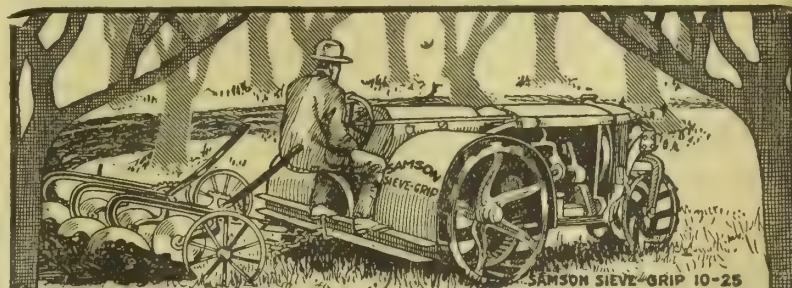
higher prices. One load of prime light beef steers sold at \$9.20 which was 20¢ above last week's top, another load brought \$9.15, several other loads of prime heavy steers brought \$9.00. There was a large supply of the good kind of steers which sold from \$8.30 to 8.50; medium grade steers brought from \$8.00 to 8.25; good quality of light feeding steers sold at \$7.50 to 7.60. The prime cows and heifers were a scarce article although there was a light demand.

SHEEP: There was only one load of sheep on the market today which was a load of prime wool wethers which brought an advance of 25¢ above previous quotations, selling at \$13.50; lambs are quoted at \$11.50 to 12.25; prime yearlings \$10.25 to 10.50; good light ewes \$9.00 to 9.25; prime wethers \$10.00@10.50; prime shorn lambs \$10.00@10.50.

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Stockton, California, U. S. A.

TO THE ALMOND GROWERS OF CALIFORNIA

The following comparison of almond importations during the important months of November, 1915, and November, 1916, are worthy of your earnest attention:

November, 1915:	
Shelled	2,208,792
Unshelled	782,220
Total	2,991,012
November, 1916:	
Shelled	3,412,787
Unshelled	2,445,831
Total	5,858,618

Why not get in line to solve the problems of your industry?

CALIFORNIA ALMOND GROWERS EXCHANGE

311 California Street,

San Francisco, Calif.

Butter on a Conservative Basis.

The local butter market is on a strictly supply and demand basis, dealers finding it difficult to secure enough to meet demands some days. Some supplies have recently been attracted to this market from points that usually ship to Los Angeles and a shipment of seconds was received from Oregon but the trade has readily absorbed all offerings.

Dealers do not look for decline for some time, on account of the shortage of rain in coast counties and high feed prices in alfalfa districts.

Cheese Exporting.

One carload of Jack cheese was shipped from this market to New Orleans and another car to St. Louis early this week, making a total of 20 carloads exported to Eastern points recently. Of this amount 10 cars have been sent from San Francisco. Speculators are carefully watching Eastern markets and further shipments will probably be made if quotations justify.

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For dairymen, farmers, feeders in all sizes and proportions.

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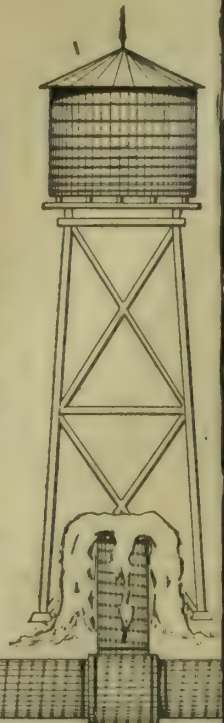
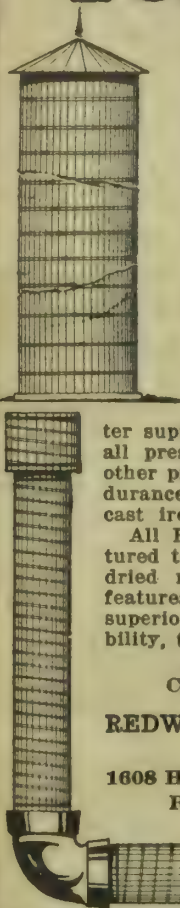
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All Remco products are manufactured to your order from clear, air-dried redwood. Their outstanding features are highest grade material, superior efficiency, maximum durability, true economy.

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Ogden Route: Across the Sierras and over the Great Salt Lake Cut-off. To Chicago via Ogden and Omaha; also to St. Louis via Ogden, Denver and Kansas City.

Shasta Route: Skirting majestic Mount Shasta and crossing the Siskiyou. To Portland, Tacoma and Seattle.

El Paso Route: The "Golden State Route" through the Southwest. To Chicago and St. Louis via Los Angeles, Tucson, El Paso, and Kansas City.

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THROUGH the microscope, a spindle looks as rough as sand paper. That's where the rub comes. But the powdered mica in Mica Axle Grease fills up this unevenness, making a smoother, cooler bearing. That's why Mica does better work, and lasts twice as long. Get a can from your dealer today.

Standard Oil Company
(California)

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GO EAST
THIS SPRING**

MARCH 10TH WILL BE
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THE PACIFIC RURAL PRESS

SAN FRANCISCO

FEBRUARY 17, 1917.

LOS ANGELES

California's Flirtation With King Corn.

[Written for Pacific Rural Press.]

IT HAS surely been neither fast nor furious. Thought of it would equip no novelist to impart a thrill; sight of it would cause no movie-fan to flutter. It has had incidents of dramatic value; periods of deep feeling and earnest purpose; deep-drawn oaths of worshipful devotion; but it has broken no hearts and has built no homes, and therefore, because it has realized no potentialities, we call it a flirtation, and we dare to study the details of it because it is such a rarity—an innocent flirtation.

When King Corn first sued seriously for the favor of California, he was but a crown prince, for old King Cotton was still reigning potentate of American agriculture. When Corn became king he continued his quest, promising the golden princess of the farthest west full half his kingdom, and California, on her part, listened indulgently; but, as the affair proceeded, temperamental differences disclosed themselves, and all thrusts at depth of feeling encountered hardpan, and the two are actually no more to each other now than they were sixty years ago. Meantime, the baffled suitors have lived full lives, and mourned not for each other. King Corn has now no rival and is producing annual wealth twice as great as ex-King Cotton, though the latter has taken no backward step, except in his lost sovereignty. California, too, leads the nation in unique wealth-winning, which commands her full interest and devotion. And thus they live and rule apart. As neither could touch the other's heart, their courtship, though not lacking in gallantries and coy encouragement, must be reviewed as an interesting and innocent flirtation.

How Corn Came to California.—Probably corn came from Mexico with the padres in 1769, for our lamented aborigines were apparently Diggers for clams and for toothsome roots and grubs, and not for crops. The padres, though they made a record in corn-growing, seem to have inherited the white man's passion for white bread, and though they probably fed their converts to some extent on Johnny cake, they chose white bread for themselves. They also probably found that hardy wheat, barley, and oats, which would make chief growth during the rainy season, were easier

Eighteenth of a series of sketches in which the Editor presents suggestions, drawn from long experience, of what Californians have done and may do for the Advancement of California Agriculture.

bread and irrigation water into wine would yield less perspiration and more cheer than to expend tillage and irrigation on corn. They also learned, of course, that on the lower, moister lands, like those southward from the San Gabriel Mission (which was their greatest granary), corn

to produce than corn, which had to be kept out of the frost, and therefore was pushed into the drouth. They must have soon seen that a system which turned rainfall into

could be brought through without irrigation, but not without more work than winter-growing cereals required.

Whether this was their reasoning, or not, the fact seems clear that the padres did not count much on corn, and probably imparted this view to their early American visitors, for they, too, largely avoided corn. And the impression seems to have been quite enduring, for the first accounts of farming, after the gold-rush, say little of corn, and the very first shows of produce were rich in tall and productive barley, wheat, and oats, but not in corn. Still corn was grown, for it is reported that in 1856, "many corn crops at El Monte, Los Angeles county, average 80 bushels to the acre and as high as 120 bushels to the acre has been raised." In that year the product of the State was estimated at 165,464 bushels, while wheat was 2,937,236 bushels, barley 3,229,230 bushels, and oats 364,420—which was surely a slow start for corn.

The First Corn Boom—Soon after, however, there arose keen interest in corn, based upon such achievements as these:

In 1857 State premiums were awarded to Dr. L. G. Lyons, Ione Valley, for his crop of heavy and well-rowed white corn, which gave 109 bushels of 52 lbs. per bushel per acre. Also to A. F. Potter of Ione Valley, for his yellow "gourd-seed" corn, which gave 84½ bushels of 52 lbs. per bushel per acre.

In 1859 Charles Green of Ione Valley raised 180 acres of corn, which yielded an average of 87 bushels and five quarts of shelled corn per acre. In 1860 he replanted the same ground, and more, to a total of 250 acres, in one body, "which, in the opinion of competent judges, will yield from six to ten per cent more than the previous year." This corn was grown

(Continued on page 202.)



Above is a glance at the roadside of a large corn field near Stockton. The variety is the Yellow Dent, which is popular in California. Below is a typical ear of Yellow Dent, being the winner of the \$1000 prize at the Fourth National Corn Show at Columbus, Ohio.

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EDITORIALS

THE RELATIONS OF A MAN.

CALIFORNIA is fortunate in having the mighty national forests within her boundaries, and the mighty industries which will grow in and upon them, in charge of a man who looks deeply into things and thinks deeply upon the relations of things. Coert Dubois, U. S. District Forester for our California division of the Forest Service, is such a man, and he will unconsciously furnish us the theme of a little homily, which we must rescue from drowning at our pen-point by rolling it over and spreading it out beneath the bright, warm effulgence of our readers' favorable consideration. It has to do with the relations of a man.

In these times, when all the altruism, good Samaritanism and brotherly love of the world seem to be driven to this hemisphere by the growth of opposite attitudes and attributes on the other, it is important that we should try to more fully understand these throbbings of the great heart of mankind which seem to be disturbing the complacency which has overspread American nationalism as the product of our strongly individualized modes of thought and action which have proceeded from isolation and efforts at mastery of the newest and greatest opportunities which have disclosed themselves in the recent history of the human race. It is not, however, upon this great world-movement of emotion and action which we intend to discourse. Such a duty lies upon philosophers, statesmen and orators. We simply make declaration of what seems to us to be a fact, that it may serve as a background for a very simple sketch, portraying by small suggestions what a man, whose aspirations penetrate neither firmament above or beneath, and whose actions lie strictly in the plane of his own immediate environment, can think and do to make himself more fit in the world.

THE JUST DEBTS OF A MAN.

AT THIS point we invite Mr. Dubois to stand beside us on the platform and to speak, but as he speaks an institutional language, peculiar to those who are associated with him, or circumstanced like him, in a great branch of the public service, we shall translate his utterance into terms which serve our present purpose in calling attention to the just debts or obligations of every man, either in public or private undertakings, who aims to lead a useful life, and they comprise debts to the community, to the enterprise in which he is engaged, and to himself as a liver of such a life. Such a translation of a paragraph, recently written by Mr. Dubois, is as follows:

"Many undertakings have for their object public service rather than money profit. Their number is increasing of late in the United States, and there is a spirit abroad in the land which shows that the root idea is taking hold on the public mind and creating a backing of popular sentiment that is not only encouraging to managers in these lines of endeavor, but puts new responsibilities on them to deliver the results called for with a high degree of efficiency. As essential characteristics, the personnel of such undertakings must

have a passion to serve, a breadth of vision, and an ability to see concrete facts and situations from an abstract point of view. But even with the whole force imbued with these qualities, unless it has in addition certain features of the successful industrial undertaking, it will fail. It must have intelligent management, economic production, a valuable product, and a real market.

Mr. Dubois made his declaration to those engaged in his branch of the public service. We have only broadened it so that it may apply to every man who wishes to do anything well, for the good of the community, of his associates, and of himself.

THE DUTIES OF A MAN.

IN ORDER to discharge the above indicated debts and obligations, a man has duties to perform. In his studies of public service, Mr. Dubois arranges these in units and makes time usefully spent the basis of the unit in calculation, and we translate from him, again applying the same expanding process noted above:

"The unit of time being an hour, we will define a unit of service as one hour, all sixty minutes of which are devoted to profitable activity. We immediately find that the service may be delivered directly or indirectly; that it falls into three classes:

- "1. Unit of service to the community.
"An hour's work, all sixty minutes of which contribute directly to human welfare.
- "2. Unit of service to the enterprise.
An hour's work, all sixty minutes of which contribute directly to increasing the achievement of undertaking in which he is engaged.
- "3. Unit of service to the man.
"An hour's work, all sixty minutes of which contribute directly to increasing the power of the man himself to render service to either of the above.

"The only way to apply this measure is to so record the work done in a day, or a week, or a month; that each day's performance may be shoved out in the open, where it can be seen, analyzed, and picked apart."

It is an interesting and somewhat unique fact that Mr. Dubois did not try out his prescription on some yellow dog of a subaltern of his, as too many reformers do, but became himself a "forester" (the least of forest officials), and tried out his medicine by taking it himself. His confession of the result was good for his soul, and it is good for our souls also. After keeping tab on himself, with pencil, note-book and watch, for twenty-two days he tabulated the data and found that he had been less than half a man, for he had rendered but 48 per cent of efficiency, of which 22 per cent was public service, 21 per cent service to the institution, and 5 per cent service to himself—and 52 per cent of the possible units of time inadmissible to the efficiency record. For the sake of the homily we must say: How many of us use less than half our time to advantage, and how many of us know it?

HOW DUTIES ARE SHIRKED?

FORTUNATELY, Mr. Dubois' record gave him clue to how time was lost, and the hints he gives of the ways may be very widely suggestive and useful. We ask him to speak this time almost without translation on our part:

"There are many influences which tend to reduce both the quality of the valuable accomplishment and the quantity of it. Some operate through wasting time such as unperfected plans—not knowing exactly what one set out to do or exactly how one proposed to do it until one got on the job, and then taking the time to figure it out. Aimless talk and profitless discussion is a big time eater. Not talk, which is clean cut and to the point, or talk contributing to acquaintance or friendship, but the rambling, inconsequential drift of which one hears and does so much. Another time-waster is failure of co-workers to arrive. This cannot always be avoided, but one does not always do one's best to avoid it.

"Some of these time-killing influences are physical, such as heat and fatigue, poor bodily condition, hunger, discomfort, horse troubles, or plain laziness. Some of them are mental; like failure to think ahead and see what is coming, pure bone-headedness, or inability to grasp the significance of facts, too much hurry, worry over family affairs, or a desire for companionship strong enough to make one quit the job before it is well and thoroughly done. Lack of the right tools and the use of cumbersome makeshifts is another factor lowering productive time, and still another is faulty supervision, which may give too little

instruction or too much—too rigid and complex for the job in hand.

"By concentrating our effort on things which contribute directly to service, to increasing the power of the personnel and facilities of the undertaking to deliver such service; and directly to the improvement of our own stock of serviceable knowledge, we perform more valuable work. To increase our output we must plan the use of our time carefully in advance, plan out each specific job, see that the tools are at hand when we start, keep our minds on getting it done, and keep them off our personal troubles—and then WORK."

HOW SHALL WE BE JUDGED?

COURSE, the proper way to close such a sermon as this is to appeal to our intellects and consciences to help us to be just judges of our own attitudes toward our jobs and of our actual performances therein. But this old test, which has served mankind so ill and so long, is now available only to editors and a few other self-willed and rebellious classes. All other classes are already well within the jurisdiction of the "efficiency engineer." Possibly some readers have not apprehended the fact that agriculture, by act of Congress, approved July 17, 1916, and commonly known as the "Federal Farm Loan Act," is now under the complete domination of the new industrial god—Efficiency. How is that? Well; it is this way: No one can borrow money on farming land with government co-operation unless he is accepted as a member of a Farm Loan Association composed of his neighbors, who personally know and are willing to co-operate with him and to accept a degree of liability for him. No one can obtain a loan without approval of those who admit him to financial fellowship with themselves, and this will include not alone an appraisal of his landed security, but, to some degree, an approval of his purpose in borrowing and his ability to use the money to advantage in some line of production. And beyond the local Farm Loan Association, there are two powerful bodies—the District Land Bank and the Farm Loan Board, the central authority at Washington—which are empowered and are liable to review the transaction. Thus both the land, and the purposes and standing of the man, have to join hands and vault together three barriers which cannot be run under. Occasionally some one indulges in a moan that agricultural security will become of less repute because borrowing by farmers is being made so easy. It is a wholly unwarranted lament. Borrowing will be made more easy, economical, and fair to farmers who are endorsed by neighbors as responsible, energetic, and competent to use money in ways which the judgment of these neighbors approves as reasonable and practicable, and for which the borrower has demonstrated some pretty definite knowledge and understanding. The law does not say all these things, but one can clearly read them in the provisions which make it impossible for an individual to take the first step toward a loan without the approval of those who know best and can best judge, not only the quality of his land, but the quality of his manhood and his ability and determination to make good in a line of extension or improvement which their acceptance of him as a fellow-borrower indirectly indicates.

Thus there seems to arise in our agriculture mutual obligations which are old in American sentiment, but somewhat newer, perhaps, in American rules for industrial practice—the obligation upon all to help each; the obligation upon each to deserve such help. Industrially, of course, these obligations rest upon efficiency recognized and efficiency demonstrated.

California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau at San Francisco, for the week ending at 5 p. m., February 13, 1917.

STATIONS	Past Week	Rainfall Data		Temperature Data	
		To Date	Normal To Date	Max'm	Min'm
Eureka	.20	16.76	27.86	58	36
Red Bluff	.02	11.16	15.57	68	38
Sacramento	.04	6.58	12.24	68	42
San Francisco	.36	10.52	14.39	64	42
San Jose	.20	6.70	10.30	70	34
Fresno	.00	5.23	5.86	72	38
Independence	.34	15.33	12.21	68	36
San Luis Obispo	.02	9.94	9.54	76	41
Los Angeles	.34	7.00	6.20	68	41
San Diego	.34	7.00	6.20	68	41

*A very light rain (T) occurred at Fresno on the 11th.

By
the Editor

QUERIES AND REPLIES

Inquirer Must
Give Full Name
and Address

Subterranean Slugs?

To the Editor: What can I do to my seed potatoes to keep slugs from eating them? It must be something put on the cut seed. I have heard complaints of the slugs eating the potatoes up after planting, before they come up. Can the seed be poisoned to kill the slugs without damaging the seed? If the potatoes can't be poisoned, would covering them with air-slaked lime keep the slugs from eating them and not hurt the seed? I expect to plant 120 sacks and am very anxious to know. One of the neighbors planted \$3 worth of seed last spring, and they ate them up.—E. E. C., Yucaipa.

We never heard of subterranean attacks by slugs. Either they have profited by the example set them in the current war or you use the term slug rather broadly. Wireworms and some other insect larvae or millipeds can do what you describe, and though destruction of underground pests has been undertaken for generations no thoroughly satisfactory treatment has been demonstrated to be cheap enough for a field crop to stand the cost of it. Paris green and other arsenicals can be used on cut potatoes put into the ground as a trap for pests, but these poisons cannot be used on potatoes which you wish to grow. Though often tried they have not been approved. Lime will not hurt the potatoes nor the insects either, for lime soon stops burning* and is not poisonous. If the land has not been recently used for roots it may be pretty clean—unless it is the dry land wireworm of the west which has taken possession. Rotation and cleaning by drying, baking and starving on a clean summer-fallow, is the best known way to reduce these ground pests.

Large White Beans and Weevils.

To the Editor: I intend to grow large white beans without irrigation. I have plowed nine to ten inches deep and intend to plow again about the last of March and cultivate regularly. When will it be proper time to plant and will the large white be right to plant, or some other kind? Some say if planted too early the bean bugs will get in them. Do you think I can keep the moisture up by cultivating them to get fairly good results?—J. V. S., Lodi, Cal.

Whether you can get and keep enough moisture depends on the coming rainfall and the character of the soil. We do not know either.

The large white or Lady Washington bean is the least grown commercial bean of California and is generally counted the most finical in its requirements. It is chiefly grown on moist river bottom lands and as it resents hardship, the pink and blackeye are preferred for plains. It ought not to be largely planted in any place where its good behavior is not well demonstrated by experience. All beans except the broad (locally called "horse bean") should not be planted until frost danger is over in the particular place of planting. We have not heard that the weevil could be avoided by later planting. It goes on the watch early and keeps awake all summer by several generations. It is liable to attack the pod soon after blooming and to keep at it even after the ripe beans get into the sacks. If readers have definite conclusions as to escaping it by later planting we shall be glad to hear them. It seems to be a fact that large beans are less infested than small, but that itself does not help much if the larger varieties do not suit one's growing con-

ditions. It is better to have weevils for beans than no beans for weevils.

Growing Young Lemon Trees.

To the Editor: I have lemons set out in a canyon in the Santa Monica mountains. There are two kinds of soil, a sandy loam and on the side hills the ground is heavy and composed of clay and shale. The latter ground looks nice and black, but the trees don't do very well. I have thought I should fertilize heavily. The trees were set out two years ago. What kind of commercial fertilizer should I use on each kind of ground? Does cow manure have to rot to be of value to me? How should I apply chicken manure? I have to use a basin system of irrigation: will filling a basin, six inches deep and as large in diameter as the foliage of tree, once a month be sufficient water?—R. G. M., Sherman.

Brief description of physical features does not give sufficient data for prescription of special fertilizers for these two different soils. Use what the manufacturers call a "complete fertilizer" for fruit trees. Cow manure can be used fresh by surface application. You can half fill your basins with it, allowing a season's rainfall and irrigation to leach the contents into the soil—digging in the refuse when re-basining. If the ground admits, the basin ought to be a little larger than the spread of the foliage. The amount of water you mention ought to be quite enough on the average for the young trees. Dig down and see how the subsoil is in summer: the heavy soil may need less and the sandy soil more. Chicken manure should be thinly spread or scattered. There should not be much in a place nor too much on the whole.

Red-Humped Caterpillars.

To the Editor: In "California Fruits" we are advised to spray with either lead arsenate or Paris green to rid trees of the "red humped caterpillar." Will these sprays have a lasting effect for the season, or must one spray from time to time as the eggs of the pesky things hatch out?—E. R. H., Oroville.

These caterpillars are usually found in bunches, feeding at first near the egg-masses from which they emerge and spreading as it becomes necessary to attack more distant foliage. If you begin looking after the leaves are well out, say in May, you can get rid of most of them by cutting and burning the infested shoot. If you find them too widely scattered for that, spray with lead arsenate. They are slow about starting in and you may not notice them until June or July if you do keep looking sharply. Probably one spraying then will get most of them, though they may keep on hatching out somewhat later. Good cultivation in early spring, especially hoeing well around the trees, will cut off many of them, for the moth comes from a pupa in the ground then and lays eggs on the tree. It is from these eggs that your later trouble comes.

Strawing and Dipping Potatoes.

To the Editor: Is straw gathered from around an old straw stack good for potatoes? If so, how much should be used per acre? I would like to know a formula for dipping seed potatoes and the best time for planting to get them early.—R. M. B., Sacramento.

Straw would have been an excellent thing for potatoes if plowed under last fall. As late as this

we would not plow it in, but would plant next month (if you are not in a very frosty place) and scatter the straw on the surface over the rows after planting. It may help you to get early potatoes by protecting the shoots from frost and they will come up through it all right. If it is short and brittle it will not interfere enough with cultivation to hurt. Uncut seed potatoes, to prevent scab, are soaked for two hours in formalin solution—one pound of formalin to 30 gallons of water. If you wish to cut the seed do it after drying them.

Endives.

To the Editor: I have been informed that the endive that is offered for sale here is grown in Belgium and imported. I am also informed that they are grown in California. How are they grown?—J. R. M., San Francisco.

Why we are leaning on the suffering Belgians for endives we cannot tell. We ought to be ashamed. Endive is grown just as lettuce, and is easier to grow in winter because it likes chilly weather better. There is this difference, however: Lettuce blanches itself by heading up like cabbage. Endive does not do this and the straggly growth has to be gathered up and tied above. Californians like lettuce better, and endive has less chance and is chiefly used by hyphenates. It is not a special or commercial crop. It is grown in market gardens by foreigners, largely for foreigners or for others who have brought back a liking for it from their European tours.

Pollination of Japanese Plums.

To the Editor: Why does the Wickson, which is such a heavy bloomer, set so few plums? Do they require some other variety planted with them for pollenization? Have several acres of these and so far they do not set as heavy as I think they should for the amount of blossoms they produce.—A. C., Acampo.

It is perhaps fortunate that these free blooming varieties do not set all their fruits. If they did the cost of thinning for commercial sizes would be frightful. But of course you are right in desiring fuller bearing. As you intimate, this can be secured by cross-pollination and the Japanese varieties seem to help each other. It has long been observed that Wickson is helped by Climax, and presumably is also served by other varieties which bloom with it. Put in a few grafts this spring and you will soon see if isolation is your trouble.

Transplanting Evergreens.

To the Editor: We wish to move some native pine trees to our garden—the soil being the same and the distance short. Is there any special way of moving that will insure success?—R., Neenach.

Take quite small trees and trench around them so you can take up a ball of the soil about a foot in diameter, enclosing the roots. Do this after the coldest weather is over, when soil begins to warm up and the air has the spring feeling in it.

Oak-Leaf Mold.

To the Editor: We are planting out a small orchard and, as the soil is open and porous, would it be a benefit to put leaf mold from live oaks near, in the holes when setting the trees?—R., Neenach.

Such accumulations are often too sour. It is safer to enclose the roots of the young tree in the best of the open surface soil you have and spread the leaf mold after planting to act as a mulch, to become sweetened by aeration and worked in by subsequent cultivation.

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Yucaipa Valley Apple Conditions.

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[Written for Pacific Rural Press.]

Standing on the reservoir dam above Yucaipa, you look down over 5,000 or 6,000 acres of the thriftiest, cleanest, most uniform young apple trees in California. The oldest of these are scarcely seven years. Their thrift and freedom from disease are partly due to a climate which could scarce be excelled for human living, partly to a deep decomposed granite soil, partly to plenty of water. But all of these advantages would also encourage the insects and diseases that make apple growing profitable where they are not.

Three years ago there was far less acreage of trees, practically no spraying had been done, the trees were not in as good shape as now, and diseased trees were being planted in superb defiance of the future. It was about then that the "Protected District of Yucaipa" was formed under the county ordinance permitting districts to protect themselves against diseased trees. Since then every tree is held in quarantine until inspected by J. B. Hundley, the District Inspector. Mr. Hundley estimates that in the past three years, some 15,000 or 20,000 apple trees have been destroyed here on account of disease, mostly hairy root, crown gall, and nematode root knot. This would have caused a lot of damage had the trees been planted, as occurred in previous plantings.

Pests.—There used to be a few flat-headed borers in the colony, but there are scarcely any now. Neither are there any scale, and very few woolly aphis. Mildew is seldom of importance enough to fight until the trees come in bearing. It is then controlled, without additional spraying, by adding 12 pounds atomic sulphur per 2½ pounds dry arsenate of lead in the first codling moth spray. Seldom is it needed in the later sprays. No scab has developed in the district. Codling worms must be fought from March till September, as will be told elsewhere. Brown almond mites are also troublesome.

Much of the immunity from insects and diseases is due to spraying every year with lime-sulphur just before buds break, as nearly as convenient. Mr. Hundley vouches for orchards on at least 110 acres that

have been sprayed thus annually without ill effect, but still with clean soft bark full of life. This spray is for the brown mite eggs and a general clean-up. It will commence about February 10. Last year 98 per cent of the trees in the valley were sprayed; the year before, 90 per cent were sprayed. By the county ordinance, all power spray rigs are licensed so long as they do good work as judged by the district inspector. Hand-power sprayers are also licensed, for dormant spraying only. There are now about 24 spray outfits in the Valley besides half a dozen hand sprayers. Mr. Hundley aims to inspect the work of each of them twice a day in spraying season; and if any are not doing good work, even on their owners' places, their licenses are revocable. The county pays two-thirds of the inspector's salary; the Yucaipa Apple Association pays the other third.

No Sunburn.—Mr. Hundley believes that a hide-bound condition of tree trunks is due not to sprays, but to sunburn. That there is so little sunburn, and therefore so little encouragement for flat-headed borers in Yucaipa Valley, is considered due to the annual whitewashing given the trees. Over 60 per cent are estimated to have been whitewashed annually from the start. The Government formula seems to stick best. It is applied by hand, even upon the second and third years' growth.

Early February is the time; for in late February about Yucaipa there is usually a hot spell before sap has begun flowing; and then most of the sunburn would occur. There is also a hot spell in October and November when damage may come if the whitewash has not stuck or been renewed.

Organized before Crop Grown.—Last year the first apples were shipped commercially, yet the Yucaipa Apple Ass'n is five years old and comprises 120 members, according to G. E. Jenkins, editor of the Yucaipa News, which reaches all the growers in the Valley and the local land owners out of the Valley.

The Association built a packing house including an up-to-date apple grader; but the coming year a real crop is expected and the packing

CIDER GONE WRONG.

To the Editor: Last October I made cider for vinegar. To every fourteen gallons I added one gallon of water. In about three weeks I drew off, rinsed the barrel and put the cider in again. Now there is a white scum on top. The cider lost its color. It is nearly as white as water and has not one-fourth the strength of good vinegar. What can I do to make it good?—J. H., Greenfield.

[Answered by Prof. W. V. Cruess.]

I judge that the trouble is that the cider was diluted too much by the addition of water. This promotes the growth of a white scum, known as "wine flowers," on the surface of the fermented cider. The wine flowers' growth destroys the alcohol of the cider and in this way prevents the formation of sufficient acid. It would be difficult to prescribe a treatment for the cider unless an analysis were made. If a sample of the cider (about one quart) were sent to the Enology Laboratory, Fertilizer Control Building, University of California, Berkeley, California, we should be glad to analyze it for you and could then be able to tell whether the material can be made into a good vinegar or not. As an experiment, you might try mixing two gallons of this weak vinegar with one gallon of strong vinegar. It is possible that the vinegar mother from the vinegar will overcome the action of the wine flowers.

TALKS ON Nitrogenous Fertilization

Number 9

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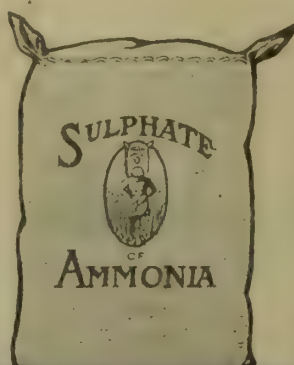
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house will have to be enlarged several times over, for Mr. Jenkins points to 2,000 acres just about to bear their first good crop. The Association conducted an apple show last year which advertised the Valley far and wide.

Water.—There are two or three water districts owned by the land owners on the share-per-acre basis. The central part of the Valley, which is practically all in orchards now, is supplied from mountain canyons via tunnels and aqueducts to a reservoir some hundreds of feet above town. They also have two wells, one of which supplies 110 inches of water; but these were not used the past season and there was still plenty of water in the reservoir when it was cleaned out after the irrigating season was over. The mountains are usually more or less covered with snow through April, and the watershed is ample. The South Mesa and the River Bottom Districts are supplied by wells, though there is but little fruit yet in the latter. Practically all of the orchards have concrete underground irrigation pipe.

Varieties: Rome Beauty occupies by far the largest acreage of any one variety, according to Mr. Jenkins, with Stark's Delicious, King David, and Winesaps in the order named. We found other varieties growing in quantity; and one man, J. W. Fulton, has 84 varieties on two rows of his place, for experiment. That the Yucaipa Winesaps keep splendidly is attested by the writer, for whom ye editor pulled out on Feb. 2 from his table drawer an apple that had never been in cold storage. It was solid dark red, sound and juicy, and of fine flavor.

FRUIT PLANTING IN SAN LUIS OBISPO.

S. V. Christierson, horticultural commissioner of San Luis Obispo county, advises us that at the present time some 10,165 acres are planted to fruit trees of different varieties in his county, of which 2400 acres are now bearing. About 3000 acres are planted to almonds and this season 2000 acres of almonds will be planted in the Paso Robles and Templeton districts. The estimate made by Mr. Christierson two months ago indicated that 2000 acres would be planted to fruit trees in this county during the spring of 1917. By February 1st enough trees had been shipped in to plant 3500 acres, so that actual plantings will probably exceed estimate by 100%.

JAPANESE PEAR ROOT AND OAK FUNGUS.

To the Editor: Noting the inquiry of O. S., Napa, regarding danger of oak-root fungus to pear trees on French and Japan roots, I wish to say that we have lost a number of pear trees on French root from this cause during the past three years, but thus far have had no deaths from the same trouble on pears budded on Japan roots.

Of course this does not prove that Japan root may not be equally susceptible, but under apparently similar conditions it has thus far appeared to suffer no injury.

I am convinced that we are attributing to French root a degree of immunity from the oak-root fungus that is leading some of us to erroneous conclusions. A. L. Wisker, Grass Valley.

Thank you; it puts us on the road to wisdom.—Eds.

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Mistakes in Pruning Sultanina.

[Written for Pacific Rural Press by Prof. F. T. Bioletti.]

When the Sultanina was first grown in California under the name of Thompson's Seedless it was pruned short like a Muscat, with the result that it produced many tons of inferior fire wood, but few grapes. This mistake is no longer made.

High Stakes.—It was soon learned that short pruning removed nearly all the fruit buds and that long pruning with fruit canes was necessary. Accordingly these were left and tied vertically to 6-ft. stakes. The results were one, or two, large, occasionally enormous, crops, followed by small and irregular crops.

The fruit canes during the first one or two years were good, but their position shaded the heads of the vines so much that no new fruit canes of good quality were produced for the following years. This mistake is still very common.

Trellising.—For years it has been known that even larger crops can be obtained by trellising the vines and tying the fruit canes horizontally to wires. This places the canes in the most favorable position for fruiting and leaves the head of the vine the air and light necessary to develop new canes for the following year.

These canes will develop, however, only on condition that the vine has surplus vigor after starting all the shoots it can on the fruit canes tied to the wire. If too many fruit canes are left, or if they are left too long, the canes for the following year will be absent or defective.

How Many Canes Should be Left?—Many growers, encouraged by the large crops obtained from 3 or 4 canes, have increased the number and increased their length in the hopes of correspondingly increasing the crop. This can be done only up to a certain point. Beyond that, the crop does not increase. There may be more bunches and more berries, but they will be small and lacking in sugar. The increase of fruit canes is carried so far that sometimes 6, 8, 10 or more canes are left to a vine and these are left as long as possible, 6, 8 or 10 feet. The results are always disastrous in the end. The least harmful result is a year of heavy bearing of inferior grapes followed by a year or two of poor bearing during which the vine is recovering the strength necessary to produce good fruit wood. Often it is worse. Sultanina vines by the thousand have died as a result of this form of over-pruning. It may not be strictly correct to say that the vines bear themselves to death, but at least they are so weakened that they fall an easy prey to drought or other unfavorable conditions.

A Demonstration.—Some observations at the Davis and Kearney experiment vineyards throw light on the question of how numerous and how long the fruit canes should be.

At Davis in 1916 a block of 240 6-year-old Sultanina vines gave the following results:

Average number of canes per vine	3.63
Average total length of canes per vine	16.50 ft.
Average No. of fruit buds per vine	55.86
Average No. renewal spurs per vine	4.66
Average lbs. of grapes per vine	49.30

This shows that, with an average of less than 4 fruit canes to the vines, and an average length of each cane of about 4 feet, the Sultanina bore at the rate of over 14 tons of fresh grapes, corresponding to 3¾ tons of raisins per acre. This is three times the average crop of this variety for the whole of California.

The results at Kearney were even more striking. Here the vines were of various ages, the oldest 5 years. The vine with the largest crop had 4 canes, averaging 4 feet each. It bore 139 lbs. of grapes or 6 trays. One vine with only 2 canes averaging 4 feet each bore 102 lbs.; one vine with a single cane 4 ft., 8 in. long, bore 60 lbs.

Conclusions.—These results demonstrate clearly that the excessive number of excessively long canes so often left are not necessary for maximum yields. Observations demonstrate, also, almost as clearly that this excessive amount of fruit wood results in a serious weakening of the vines. All the Sultanina, both at Davis and at Kearney, in spite of their remarkable crops, have produced a fine, vigorous growth of new canes which promise equal crops for next year.

In this year's pruning we have adopted the rule of leaving not more than 4 canes nor a total length of fruit wood of more than 16 feet to the most vigorous vines together with 5 to 6 renewal spurs. For vines showing any weakness a smaller number are left.

Univ. of Cal., Berkeley.

Although Tulare county growers did not expect to realize much on the fruit still on the trees when the recent heavy frosts visited that district, reports from there state that the grading machines which have been installed in the packing houses indicate that there will be 50 to 75 per cent of the crop saved.

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Selecting Walnut Nursery Trees.

[Written for Pacific Rural Press.]

We listened to a tale of discouragement from a Chino rancher who had tried to grow young walnut trees, but lost a large percentage of them. A few he found welded together at the union like iron would weld if too cold. Others were "club rooted," two or three inches across where they had been cut off when dug in the nursery. All of the roots had been shorter than he desired. But he told us of a neighbor, W. D. McCroskey, who got the sort of trees he wanted, and who was very particular what he got. We found that Mr. McCroskey had set 500 budded Placentias late in the spring of 1915 and had lost only three trees the first year.

Mr. McCroskey made a contract with his nurseryman, covering the kind of trees he was to get, and inspected each one personally before it was planted. Only one-year tops were desired because two-year trees are likely to have clubby roots, too much of them having been left in the soil when digging the trees. He insisted on every root being 30 inches long, or more. Because in hard soil such a specification is hard to enforce, he got his trees from a nursery on lighter soil. California black walnut roots were specified because he thinks English walnuts overgrow Eastern black roots.

The entire tops of the trees had to be delivered so he could see what they were and could cut them off at the last minute before planting so they would not dry out. Length of

the top was not considered so important as stockiness, but Mr. McCroskey called for trees on which the buds were plump and all there from points 2½ to 4 feet up. Careless handling of walnut nursery trees often results in breaking off the buds and setting the growth back at those points. Every tree union was examined, though there is less trouble that way now than formerly. He looked down each tree to see if any "blight" blisters had been there, for they kill the wood to the pith. How he planted them makes another story.

COACHELLA FIG NOTES.

[Written for Pacific Rural Press.]

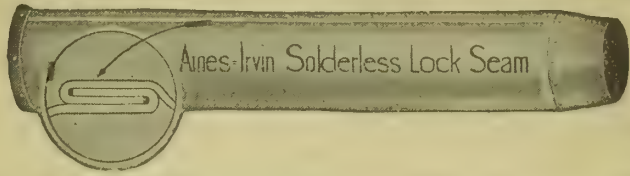
From 86 fig trees 11 and 12 years old, Fred N. Johnson and his father, J. H. Johnson, of Coachella Valley, shipped 1045 boxes and crates to various California and Arizona points last year. None were dried. The boxes are 11x18 inches and 1¾ to 2¼ inches deep according to the size of figs packed in them. They held about 8 pounds gross. Crates contain 4 five-pound baskets as for shipping plums, apricots, etc.

Varieties.—There are three varieties, of which the Black San Pedro seems to be the leader. White San Pedro and Black Mission are the other two. Trouble in adequate caprification prevents growing of Calimyrnas. The black San Pedros are much larger than Missions, making only four across in the 2¼-inch boxes, and seven lengthwise. They do not sell for as much per box, however, as the Missions. The whites have a milder flavor than the blacks. Missions keep better than the other kinds.

Pruning.—The white San Pedros are not pruned heavily, because that would take off the crop. The Black Missions needed topping, according to Mr. Johnson, but this could be neglected better than the other work. It was remarked that fig trees of unknown antiquity at the wet spots near the mountains are still producing freely, though never pruned.

Black San Pedros, however, were being given their annual cutting back the last of January, though Mr. Johnson said that the time of pruning is of little consequence. The way it is done, however, is important.

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What is Not Being Planted.

To the Editor: It seems to me that in planting fruit upon a piece of land I have in mind, I ought not to plant what everybody else has planted or is planting, but something different which is likely to come into good demand. You are writing nearly all the time about what is being planted. I would rather know what is not being largely planted.—Intending Planter, San Francisco.

You have a right to enjoy your philosophy and we will try to give you the facts you desire.

In pears people are planting very few of other kinds than Bartletts and are disregarding the chances in winter pears. Aside from the shipping demand our local pear-lovers have been complaining of failure to find good winter pears in our California fruit markets.

Cherries are not being largely planted regardless of the canners' demand and the general fact that the Pacific Coast has to supply nearly the whole country with sweet cherries and that California cherries ship better than those from States farther north because drier air

makes them much better shippers.

Plums are being neglected by planters generally, though Mr. McKevitt, one of our wisest growers for shipping, is showing his faith by his works in plum planting.

Apricots are not being largely planted though our own belief is that in places well tested for apricots, there is no more promising fruit.

Prunes of the larger varieties are not being largely chosen. Planters seem to be showing their "Entente" sympathies by going their all on French and neglecting Imperial and Robe de Sargent as though they belonged to the interior emperors and warriors.

Freestone peaches are not favorites with planters this year, and yet the freestone peach is the greatest out-of-hand fruit eating in the world.

Very few are planting quinces, though California grows the best in the world for size, beauty and quality.

The planting of olives is not large in spite of the propaganda which is being carried on by growers and canners to develop the Eastern demand for this fruit.

Almonds and walnuts are popular with planters, and those who need these trees should not delay in getting them, but pecans are neglected and if one has land in the interior valleys with plenty of moisture and good chances of frost, he might well be taking chances with this very popular nut.

Wet soils, even with a touch of alkali, might also be tried with pomegranates, which are not largely grown. The University of California has just issued a bulletin on this fruit which you can get by applying for it at Berkeley, which will have the effect of pushing this very poetic, artistic and romantic fruit. It particularly emphasizes the characters of the variety rightly called "Wonderful."

Persimmons of Japanese origin are also a neglected fruit which we are just beginning to appreciate, both for fruit and ornament.

Citrus fruits, oranges, lemons and pomelos, are also slowing up in planters' calculations this year and yet they are beyond all other fruits in achievements and popularity, and we are not likely at all to have too many of them for the needs of the people of this continent who must get them from us.

Thus you may know what is not now being largely planted.

WIREWORMS AND SLUGS.

To the Editor: To get rid of wireworms tell the Marysville man to sow 6 bushels of the cheapest kind of salt he can buy on each acre infested by the worms and that will effectually settle them. For slugs sow 4 bushels of air-slaked lime after dark and against the wind. It is no use sowing it in the day time as they are hiding under the ground and come out only at night. These remedies are used by British farmers and have proved effective.

San Jose.

Sam'l Haigh.

We have reason to doubt the efficacy of these prescriptions under California conditions, but they are worth trying because of their historical record.—Eds.

Pears

Magnificent **BARTLETTS** in 4 to 6 grade—very strong roots. Also **COMICE** in 3 to 4—"stocky" trees with abundant fibrous roots.

A limited quantity of **BARTLETT** and **COMICE** in 2 to 3 ft. grade—spring buds budded too late to make tall growth, but rooted as well as many larger trees. Special prices.

A few **A. J. COOK**, the new winter market pear. High quality and equally desirable for the family orchard. All pears on blight-resistant roots.

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TRAGEDY on peach root in 3 to 4 and 4 to 5 ft. grades at special prices.

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DRAKE, **NONPAREIL**, and **NE PLUS ULTRA** on peach and almond roots. Strong trees, heavy caliper.

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Nitrate of Soda

California soils need available nitrogen. Get it as cheap as you can. Write us for "Cost of Available Nitrogen."

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NOW is the Time to Fertilize Fruit Trees

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are scientifically manufactured from animal products that contain the necessary elements for California soil conditions and crop necessities. Let us help you solve the problem of bigger and better crops.

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1842 The Seventy-Fifth Anniversary of 1917

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Built for the Field Test.

Three-Quarters of a Century of "Knowing How" Hammered Into Every One of Them.

The product of the Parlin & Orendorff Co. has always been noted for simplicity of construction, great strength and ease of operation. It was upon such a basis that the founders of this business made their implements, established their reputation, and built their factory. It is upon the same foundation that the business has been carried on to this day, and in 1917 we celebrate our Diamond Jubilee; 75 years of practical experience gained through constantly striving to provide for the exacting requirements of three generations of American farmers.

For an even three-quarters of a century we have met the demand, and today we operate the largest and oldest permanently established plow factory in the whole world. "It's the way we build them."

P&O
Light Draft Plows, Harrows, Planters and Cultivators are made in all types and sizes, to meet the conditions in all sections, and are Backed by an Unqualified Guarantee.

We also make the most complete line of Tractor Engine Plows produced, and we have a special catalog devoted to these famous plows.

The P&O Little Genius Engine Gang Plow

was the most popular plow shown at all points on the 1916 National Tractor Demonstration.

We will send P & O Catalogs to any address. While P & O Implements are sold only through established implement dealers, we welcome correspondence from farmers in all sections.

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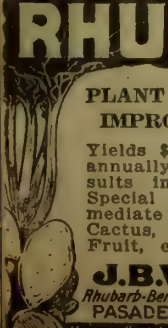
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GENERAL ASSORTMENT

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We have some Japan and Kieffer Pear Seedlings at San Jose, Cal., which we are offering at special prices.
Send us your list for prices. We will have several more cars to California.

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Packed in barrels and double sacks. Are the fluffiest Sulphurs that money can buy; the best for vineyards; the best for bleaching purposes. LEAVING NO ASH. SEND FOR ILLUSTRATED BOOKLET; also PRICE LIST and SAMPLES.
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RHUBARB
PLANT WAGNER'S IMPROVED NOW
Yields \$1,000 per acre annually. Splendid results in six months. Special price for immediate planting (also Cactus, Berries, Small Fruit, etc.). Write
J.B. WAGNER
Rhubarb-Berry & Cactus Specialist
PASADENA, CALIFORNIA

ORCHARD GRASS AND LIQUID MANURE.

To the Editor: In the Willamette Valley, Oregon, the farmers sow orchard grass on the mountains, where there has been brush burnt (in the ashes) in the fall, and I have seen seed threshed from the same to the amount of \$20 per acre. They never irrigate in Western Oregon and she is some dry there in the summer, especially on top of the mountains among the rocks.

Liquid Manure.—I would consider it much cheaper for the farmers to build a concrete basin, to dump their manure into, and keep plenty of water on it, than to let it pile up around the barns, and in a few years the barn is rotted down or ready to be moved. There would be but a cost to make a concrete basin, and it would last a lifetime; and whenever he wanted plant food, he would have it on hand without buying it.

Gridley. C. H. S.

[Orchard grass is also grown profitably in California on quite dry lands, but it will not live through the summer on our driest lands though it is a good winter grower. Liquid manure is a good thing on crops which will stand the labor cost of making and distributing it. The more widely available way is to spread fresh or to scatter in the corral and keep dry and spread at the beginning of the rainy season.—Editor.]

WHAT IS BEING DONE FOR ORANGE DAY.

Strenuous efforts are being made to make March 10th California's greatest Orange Day. The orange crop this year will bring more than \$50,000,000 into California. This about offsets the automobile trade which last year took away more than \$40,000,000 from Southern California alone, and sent that vast sum to Detroit and other Eastern cities.

Thirty railroads are helping tremendously; express companies are placarding their wagons in every city. Every hotel of any size in the United States and Canada will feature the California Orange on its day. The moving picture companies are doing some wonderful stunts to advertise the day. Women's clubs are almost startling with the plans they are developing in every part of the country. Eastern newspapers have promised a great total of publicity. Mayors of thirty Eastern cities have already announced their intention of issuing proclamations in behalf of the day. The outlook is that this California Orange Day will greatly surpass in its scope those of the past, even though former days were so materially successful in clearing up glutted markets and raising and stabilizing prices.

All Californians are urged to promote the idea of sending fruit East in time for California Orange Day; the writing of letters to the East, etc. It is desired to keep public attention fastened on the phrase: "California Orange Day is March 10th," to help promote an event that is profitable to every one who lives in California.

Orange growers about Lindsay are using their cull oranges for fuel, and say when properly dried they make a good fire.

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Wholesale Growers of High Grade Nursery Stock.

- Fine Supply of
PEACH,
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Will bring big money, either for Local or Long Distance Markets.
BLLENHEIM and ROYAL APRICOTS,
the old and safe standbys.
Fine assortment **PEARS, PLUMS, ALMONDS, CHERRIES** and **TUSCAN CLING PEACH.**
FOR AVENUES—Elm, Maple, Mountain Ash, Mulberry, Poplar, Tulip Trees, Walnuts, etc., 6-8 feet size.
LOW PRICES.

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OVER FORTY YEARS' EXPERIENCE GROWING CITRUS
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ORANGES, LEMONS, GRAPEFRUITS, OLIVES
YOU want reliable trees. WE want your business.
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Growers of the highest grade budded trees in commercial quantities. Thirty varieties. All field-grown stock. Our years of experience will be of great value to those considering a spring planting. Come to our nurseries and see the wonderful growth of our trees.
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California's Flirtation with King Corn.

(Continued from first page.)

on dark, gravelly, clay-bottom land without irrigation." The grain was used to fatten a large drove of hogs, and in the form of pork the grain was worth 2½c per lb. This was, perhaps, the largest singly-owned corn field in the State, and the first large product of corn-fed pork.

In 1860, G. F. Long, twelve miles east of Visalia, grew barley and wheat, and after harvesting raised corn on the same land with irrigation. In the same district Solomon Jewett "saw ears of corn nine feet from the ground."

On the moist alluvial land at El Monte in 1860, there were "fine farms producing various kinds of grain, the most reliable crop of which is corn."

It is not strange that such demonstrations as these, which we have drawn from records of widely scattered parts of the State, should have aroused the pioneers from their distrust of California as a land of corn, and awakened them to prophecy. Both white and yellow corn was raised here and there, from the upper Sacramento Valley to the southern end of the State, and the results seemed to warrant this exultation, which was written in 1860:

"Indian corn was generally regarded, until the last few years, as entirely unadapted for general cultivation in this State, but this year has demonstrated that throughout the entire length of the State, from San Diego to Siskiyou, there are large districts where it will, with even less attention than on the great central prairies of the Mississippi Valley, attain a height of 14 to 20 feet and yield from 80 to 120 bushels per acre."

Early Recognition of Limitations.—But even while the joyful prophets were thus exalting California above the prairie States, which have since demonstrated themselves to be unapproachable in corn-growing, there were others of deeper sight and clearer discrimination. As opposed to the too broad all-California-for-corn slogan of the writer quoted above, there was in 1858 this truer conception of the facts published: "There is not a doubt but that there are many fine corn-growing districts within the limits of California that are as yet unknown, so far as practical experiment has demonstrated their appropriateness to the culture of the product." Segregation of the fit means, of course, the exclusion of the unfit; and this reached demonstration within a decade, for in 1868 Cronise wrote, in his *Natural Wealth of California*: "Corn can be grown with profit only in favored localities." And this was the truth, not only about corn, but it is an early declaration of the general truth that in a State with such diverse conditions of soil and meteorology as California has, great discrimination has to be exercised in seeking conditions which answer the requirements of any plant. That such wise caution was disregarded in a subsequent effort to boom the corn plant in California, will be noted later.

Two Great Corn Counties.—That suitability for corn depends upon local conditions and not upon geography, is shown by the very interesting fact that for nearly half a century

the two leading corn counties in California were over 500 miles apart. Los Angeles county has stood first in corn for sixty years, excepting two or three dry years. Sonoma was nearly always second until 1899, when she stood first, because Los Angeles was dry. Since 1900 other counties have taken second place as Los Angeles regained leadership, and Sonoma has done less with corn. In 1910 the corn roll of the counties was in this order: Los Angeles, San Diego, Orange, San Joaquin, Tulare, Ventura, Napa, Kings, Inyo, Merced, Sonoma, etc.—these eleven counties producing two-thirds of the crop of the State. The other third is produced in 44 counties—for every county does something with corn except Alpine and Plumas, which are too high, and San Francisco, which finds other skyscraping more profitable. Thus, in a way, all California is in the "corn belt"—which means that nearly everywhere there is some suitable area, and emphasizes the fact, already stated, that suitability is more a matter of local conditions than of geography.

An Early Conception of Corn Requirements.—Though the early demonstrations of success with corn, which we cited as leading to the first booming of it, were on moist land, the Cosumnes river bottom, the Visalia delta, the old lake bottom of El Monte, etc., there was a corn interest in the Russian river valley in Northern Sonoma which was active for several decades as just shown. And there was a man in that valley in 1858 who did some pretty good thinking and graceful talking about corn-growing in California. We do not know his name, but he said in part, this:

"The Russian river makes its way through valley and canyons to the ocean, and the ocean wind, which makes its way inland through this gorge, is so mellowed, softened, and checked in its velocity and power by natural woodland screens, that it does not disturb the upright growth of corn on the broad corn-producing alluviums of the river. At the same time these winds retain to surprising degree the moistening properties they start with from the ocean, which are near to the point of saturation, that the coolness of the nights during the corn-growing season causes nightly dews to fall, which in their copiousness more than equal many a gentle rain shower of other lands."

Of course, the natural philosophy in this declaration is not as good as the poetry, because dew does not fall from anywhere, but forms where you see it—except as it may fall therefrom upon the place beneath. But passing that rather pedantic point, the man made the good observation that when you get moist night air and dew, it is good for corn, both on the leaf and by its drip to shallow root. And this you are apt to get on low, moist bottoms everywhere, and on sandy lands along the south coast, and apt to miss in mid-summer on dry plains and foothill slopes. And you are apt to get it on lower lands near the coast away from river gorges and bottoms—which explains why corn is encouraged and refreshed, both on coast flats and also on interior river bottoms, to which coast winds do not strongly intrude, for all the wind need not go to the ocean



"The Old Lines"

EVERYBODY speaks of them as "the old lines," many perhaps without realizing how thoroughly new and up to date are all these **Champion, Deering, McCormick, Milwaukee, Osborne and Plano** mowers, rakes and tedders. What really good improvement was ever made in haying machines that did not show itself first on one of these machines? Where can you find mowers, rakes, or tedders that need so little adjustment, so few repairs, or that are so easy to repair when they do need it? Nowhere. These old standard machines, known to farmers for three quarters of a century, can still be depended upon to get in all the hay from any field and to make the work light for the farmer.

When you need a mower, rake, or tedder, see the local dealers who handle the **International Harvester** lines. We can remind you here that our machines have always done good work, but the dealer can show you why they still do it. You will find that the local dealer has just the size and style you need. Buy from him.

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to wet its whistle. But in its broadest significance the observation of the Russian river pioneer was true—moisture which takes the edge from the aridity of the air is a good thing for corn.

But the plant also depends for thrift upon soil-moisture within easy reach of its rather shallow rooting, and this is covered by another chapter of the Russian river philosophy. For the same man said this:

"The principal features of successful corn culture consist in mellowing the soil to only a moderate depth, say eight or nine inches, and then planting the corn nearly at the bottom of this layer of mellow soil, with only a two or three-inch covering of earth. This secures to the seed certain and sufficient moisture for its germination whilst the after-culture, as the plant progresses, is rendered easy by the gradual working of the soil at each hoeing towards the plant, and yet creating but little hill or ridge; so that, for the most part, the surface of the ground, after a corn crop, is nearly as level as before being plowed."

Though California did not discover the advantage of flat or level culture over "hilling" or "ridging" in moisture retention, the application of the discovery naturally counted for more in this State than in humid regions, and was here more quickly and widely employed than elsewhere. Even with irrigation, thorough flat culture, with a furrow freshly opened and soon closed, gives better thrift than running water in hard channels between sun-baked ridges.

California's Second Corn-Boom.—About fifteen years ago a high functionary from the government farming outfit at Washington rolled over the plains of the Sacramento Valley in a palace car in the month of May. As far as the eye could reach, stretched the carpet of flower-decked verdure, covering the summer-fallow, and through the open window came perfume on the wings of soft, warm air, moistened by the last hay-spoiling shower of the rainy season. And so this mighty farmer, whom the corn-belt loaned for a time to the government, had a vision, and he talked of it afterwards to crowds of boosters, who crowded around him in the towns, and it was in this wise: "Oh, Lord, what fools these Californians be to fallow land which should be busy, and to grow low-down posies when the whole landscape could be a mighty ocean of waving corn. You tell me your farmers say they cannot grow corn on the plains without irrigation? What an idea! To me the whole atmosphere is heavy with corn opportunities. Perhaps you have not found the right variety for your soils. If so, 'my scientists' will make it for you!"

Of course the effect was electrical. All the town boosters, who usually know how to farm better than farmers do, were excited, and resolved to arouse California to corn. An association operating from Sacramento enrolled an army of corn-tries, supplied them with munitions from Washington, made zealous drives for a few years, and succeeded in not adding a bushel to the corn crop of California! This corn-bubble pricked and collapsed itself on the old-time barley stubble of the Sacramento valley plains. Perhaps a little more corn was grown with natural moisture on the river land and other lower lands, where it had been known for half a century to be grand and

JOHN DEERE IMPLEMENTS

BETTER FARM IMPLEMENTS AND HOW TO USE THEM

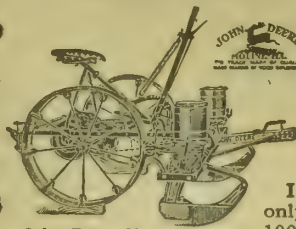
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This book will be sent free to everyone stating what implements he is interested in and asking for Package No. X-152.

JOHN DEERE, MOLINE, ILL.



John Deere No. 999 is accurate. It has the John Deere Natural Cell Fill, Edge Delivery Seed Plate. Surface of hopper bottom and openings to seed cells are oblique, or sloping. Kernels move toward and enter the cells in their natural position. They do not have to be tipped on edge.

Merely move foot lever to change number of kernels per hill.

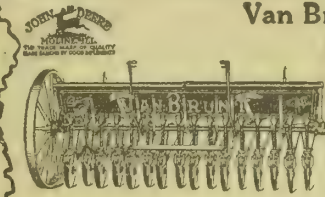
Drilling distances varied, and change hilling to drilling or back to hilling made easily.

John Deere Corn Planters

Accuracy in a corn planter means uniform drop—number of kernels the same in each and every hill.

If the planter misses only six kernels in every 100 hills, the loss in yield is nearly two bushels per acre.

Accuracy in planting has been the main object in designing John Deere planters. One of the many advantages of using a John Deere planter is that with proper handling it will plant practically 2, 3 or 4 kernels in every hill, as desired.



Van Brunt Grain Drills

Van Brunt Drills are particularly noted for their adjustable gate force feed. Each feed cup plants exactly the same amount. The seed is com-

Van Brunt Drills plant any small seed.

Amount sown per acre easily regulated.

Direct, double, gear drive from the continuous axle.

High-grade discs with bearings guaranteed to last lifetime of drill. Scrapers keep discs clean.

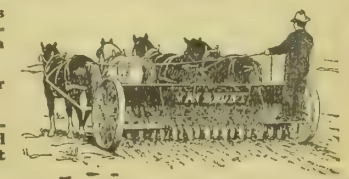
Pressure springs individually adjustable to make uniform depth furrows.

Either single or double discs.

Grass seeder attachment which will drill or sow broadcast can be furnished.

pelled to leave the seed box in even, continuous streams without bunching or choking up. All the ground is seeded.

The Van Brunt Single Disc is the first successful single disc grain drill with closed delivery. The seed is protected by metal seed tubes, disc openers and the disc boots until it reaches the bottom of the furrow.



John Deere Spreader

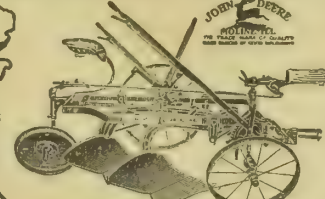
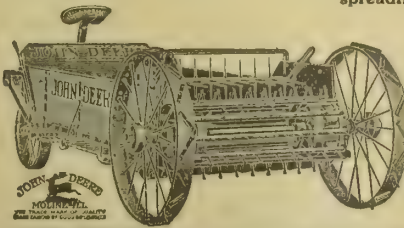
The Spreader with the Beater on the Axle

Mounting the beater on the axle simplified the construction, eliminated troublesome parts and made possible a successful low-down spreader with big drive wheels. There are no shafts to get out of line, no chains to cause trouble, and no clutches to adjust. The only spreader with beater and beater drive mounted on axle.



Low down, with big drive wheels out of the way. Easy to load. Revolving rake, driven by manure moving toward the beater—no bunching of manure. Ball bearing eccentric apron drive—a new and exclusive driving device. Makes uniform spreading certain.

Widespread attachment for spreading seven feet wide can be furnished for the John Deere Spreader. No chains nor gears. Quickly removed.



New Deere Light Draft Gang Plow

For twenty years the New Deere Gang has had the good opinion of enough farmers to make it the one best seller—

The New Deere Gang is the most widely used plow of its type.

It is light draft, durable and is equipped with John Deere bottoms, known all over the world for superior work, easy scouring and light pulling qualities. It cuts and turns full width of furrow.

A simple, practical foot lift and auxiliary hand lift lever—easy to raise bottoms out of the ground.

John Deere Quick Detachable Shares—great labor and time savers. Share can be taken off easily, only one nut to remove.

And, today, it is the same plow it was twenty years ago, with the usual minor refinements added.

Correct in design, always representing the highest development of the plow-maker's art, the New Deere Gang is a leader, and has been every single year for twenty years.

Go to your John Deere dealer's and look this plow over—you will readily see why it is such a popular plow.



JOHN DEERE, MOLINE, ILLINOIS



ALFALFA

250 lbs. of Mococo Superphosphate per acre will increase the yield of alfalfa enormously. "In some cases the alfalfa growth has been tripled," writes Mr. F. F. Lyons, San Joaquin Co. Farm Adviser. Write for particulars.

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Sheep Manure, Horse Manure, Cow Manure, Rotted Manure.

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prolific. A larger acreage was grown on the plains with irrigation to fill silos, but in real corn, as the corn-belt knows corn, there was nothing doing on dry lands without irrigation—just as the horny-headed old farmers said.

Real Knowledge about California

Corn.—The only broad contribution to real knowledge about corn in this State consists of a pamphlet of 20 pages, published by the University Experiment Station at Berkeley in 1911 as "Circular No. 70," by M. E. Sherwin—from which the pictures on our first page are reproduced. It was a part of the "Cereal Investiga-

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Used and endorsed by biggest and most successful ranch owners. Prepared waste balls saturated with Kilmol give best results.

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Herbert F. Dugan 1170 Sutter St. San Francisco

tions," begun by the Station about a decade ago and still being pursued. This document can be had free on application, and therefore we need do little but cite it in this connection. Mr. Sherwin found by careful study of the attitude of California farmers toward corn that factors, both natural and economic, influenced their rejection of it as a crop. It is hard to get the labor at the time corn needs much labor in suckering and cultivation; such labor, if secured, costs too much in ratio to the value of the crop; moisture is scant for full growth, or, if available, adds too much to cost by its application; husking is hard and costly, because of the heavier growth of the California plant; in some sections smut has been so bad that the crop has been given up; corn ear-worm and black-birds are almost ruinous in some places; heat is often so intense and dry on the plains that pollen is killed before the silk is ready to receive it, and the grower gets scantily filled or empty cobs; aggressive weeds, like Johnson grass, morning-glory, etc., which like moist low lands just as well as corn does, make cultivation hard and ineffective; local conditions cause suckering to the extent of seriously robbing the main stalks and the ears they try to develop fully; maturing, perhaps due to cool nights, is too late for convenience and great profit.

Some of these things, and probably others like them not enumerated, lessen the interest of the Californian in corn growing even in places where it does its best, and yet it must be granted that there are other considerations which, in individual cases, and sometimes more broadly than that, may make it desirable to keep corn-growing in mind and use it in rotations where conditions admit such practice. In some aspects the corn question becomes, not, can California grow corn—for more than

half a century's experience has shown that she can—but will California grow corn?

No doubt California would now be growing much more Indian corn had not the sorghum group intruded and shown such superior adaptation for conditions which make maize finical—but that is a matter with a most interesting history and interpretation, which may be pursued at another time.

A Long Courtship without Avail.—

Returning now for a moment to the sentimental aspect in which this discussion was taken up, we remark that King Corn has pursued California in what seems to be a losing race—our queen is too fleet to be his queen. In census years California has produced corn as follows:

Year	Bushels
1860	510,708
1870	1,221,222
1880	1,993,325
1890	2,381,270
1900	1,477,093
1910	1,878,000
1915	2,624,000

The greatest crop ever produced in this State is claimed to be that of 1891 with 5,570,000 bushels, but this seems to have been a spurt, the speed of which was quickly lost. Even though the figures cited above may have some aspect of respectability as they appear, by themselves, their relative insignificance is very plain by proper comparisons. The California corn crop of 1915 was only a little more than one hundredth part of that of Illinois, while that of Illinois is but little more than one-tenth of that of the whole country. Roughly speaking, it would take a thousand States with California's liking for the crop to make the corn product of the United States. Truly, then, the goings-on between King Corn and California have been nothing more serious than a flirtation!

Raising Two Tons Milo Per Acre.

[Written for Pacific Rural Press.]

When a man consistently raises two tons per acre of dwarf milo maize on big acreages in Imperial Valley, his methods may be of interest to the average milo raiser who gets only half that. W. W. Cochran is one who has done this for a long time on medium-heavy land, having averaged nearly two tons from 700 acres in 1913; having raised two tons threshed per acre one year and 2½ tons in the head another.

"It costs the first ton to raise it," says he, "and all over that is to the good." He gives credit for his success to J. J. Strieby, a pioneer milo grower of the Valley, whose advice he has followed successfully. The principal feature is the seed-bed preparation. Only one crop of milo per year is grown, though others plant early, cut one crop, let it grow up, and harvest another crop the same season. Mr. Cochran has tried this; but says that the first crop especially cannot fill out properly because it is heading in hot weather, and the second crop is too late in the season to fill out right. Often a cold north wind crusts the ground after planting the first crop and a poor stand results.

The ground is plowed in June; is then flooded so there will be plenty

of moisture to bring the corn three or four inches tall; then disked and cross-harrowed; then "floated" down with a heavy "smoocher" or clod crusher; and planted.

"More poor stands are due to poor planting than people think," says Mr. Cochran. People plant an inch or 1½ inches deep, then flood. The silt cakes, so only part of the corn gets through, and the ground dries down to it before it can all come up anyway. He has never been successful in irrigating after planting.

As he does it, the seed is planted about July 1, three inches deep in the moistened earth, and it comes up quickly so weeds do not get ahead of it. Three or four pounds of seed are planted per acre with a two-row corn planter. Water is run through a furrow made in each center about when the corn is 4 inches tall. Two or three deep cultivations are given; and one more irrigation, not over a month later, finishes work till harvest; for by the time of the second irrigation it is shading the ground well. It is desired that the kernels begin to fill about September 1 after the hottest weather is past.

Throughout the valley, according to Mr. Cochran, Hindus harvest the milo, cutting the heads off with

knives at a cost last year of \$3 per acre, though previously it had been \$2.50.

The stalks are fed down in the field. Animals ordinarily eat stalks and all unless frosted or too coarse. The beauty of milo stalks is that they are slender and enjoyed by stock.

IMPROVED EGYPTIAN COTTON.

[Written for Pacific Rural Press.]

Instead of paying attention to maintenance and improvement of the staple of cotton, the New England mills have spent their money for machinery to use shorter and poorer grades; and thus American cotton has deteriorated since the Civil War, says W. E. Wilsie, a pioneer grower of cotton in Imperial Valley. That is why five years ago the largest importer of Egyptian cotton into U. S. told Mr. Wilsie that the Egyptian cotton produced in Southwestern U. S. was too good to be manufactured in U. S.

However, the Goodyear tire people want a long staple cotton for the fabric in their tires, according to Mr. Wilsie, and are starting to grow it on a large scale. In such a case, they will probably put in special spindles and machinery to handle it; and probably a greater market will be provided in U. S. for this variety.

About 1908, E. W. Hudson in Arizona began to select from the so-called "Yuma strain" of Egyptian cotton which had been brought to produce 1½-inch staple. He is now getting 1¾-inch staple from the same variety, which is called "Pima cotton" from the name of the reservation on which it was produced. More attention to seed selection would increase the yield and staple of our cotton and thus increase its value.

PROFITABLE STRING BEANS.

[Written for Pacific Rural Press.]

A quarter-acre of Canadian Wonder string beans yielded \$300 net f. o. b. the ranch after shook was paid last spring for C. E. Longaker of Coachella Valley. They had been planted Jan. 18; and the first shipment came 90 days later, selling at 30 cents per pound. The price increased two or three cents for a few days, then went down slowly. This season, he planted Feb. 1 because the season has been colder. Rows were planted on ridges, about 20 to 24 inches apart, using 25 pounds of seed on the quarter-acre.

Irrigations came once per week after the beans were up, never letting the water reach the plants except by soaking upward between the furrows. The soil is sandy, so it could be worked shortly after the water was off.

These beans kept well on the vines and matured through a shipping period of six weeks, being picked alternate days.

The Ranchers' Market of San Diego county now has 81 members who ship vegetables and fruit through their organization from the interior and coast valleys. Most of the produce is shipped from San Diego by steamer all along the west coast.

He'll Make You Poor — KILL HIM

What is the use of preparing a good seed bed and planting seed that cost good money if you let squirrels and gophers eat your profits. These pests are a constant danger to crops and a constant menace to the family's health.

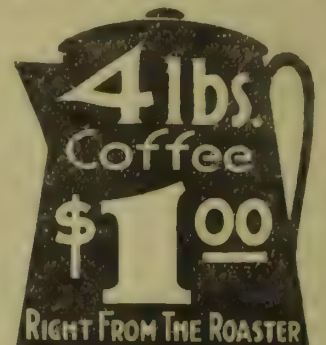
Carbon Bisulphide

has for over 30 years proven to be the most effective—the only sure killer of squirrels, gophers, rats, prairie dogs, ants, moles, yellow jackets, moths, weevils, lice, etc. It is easy and safe to use.

Write today for interesting folder and learn how this profit saver works.

Wheeler, Reynolds & Stauffer
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IS HE CRAZY?



8½ lbs., \$1.00; 8 lbs., \$1.00

WILSON'S OFFER—
Wilson will parcel post any of the above grades, all charges paid. You use 1 lb. If it is unsatisfactory, return the rest, and Wilson will send you postage. **MIND YOU, NO CHARGE FOR THE POUND USED.**
If you are pleased and keep the coffee, you agree to send the \$1.00 within 10 days.

IS THAT FAIR?
When ordering, kindly state how you want coffee ground—fine, medium, pulverized, or in the whole bean.

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ALFALFA SEED

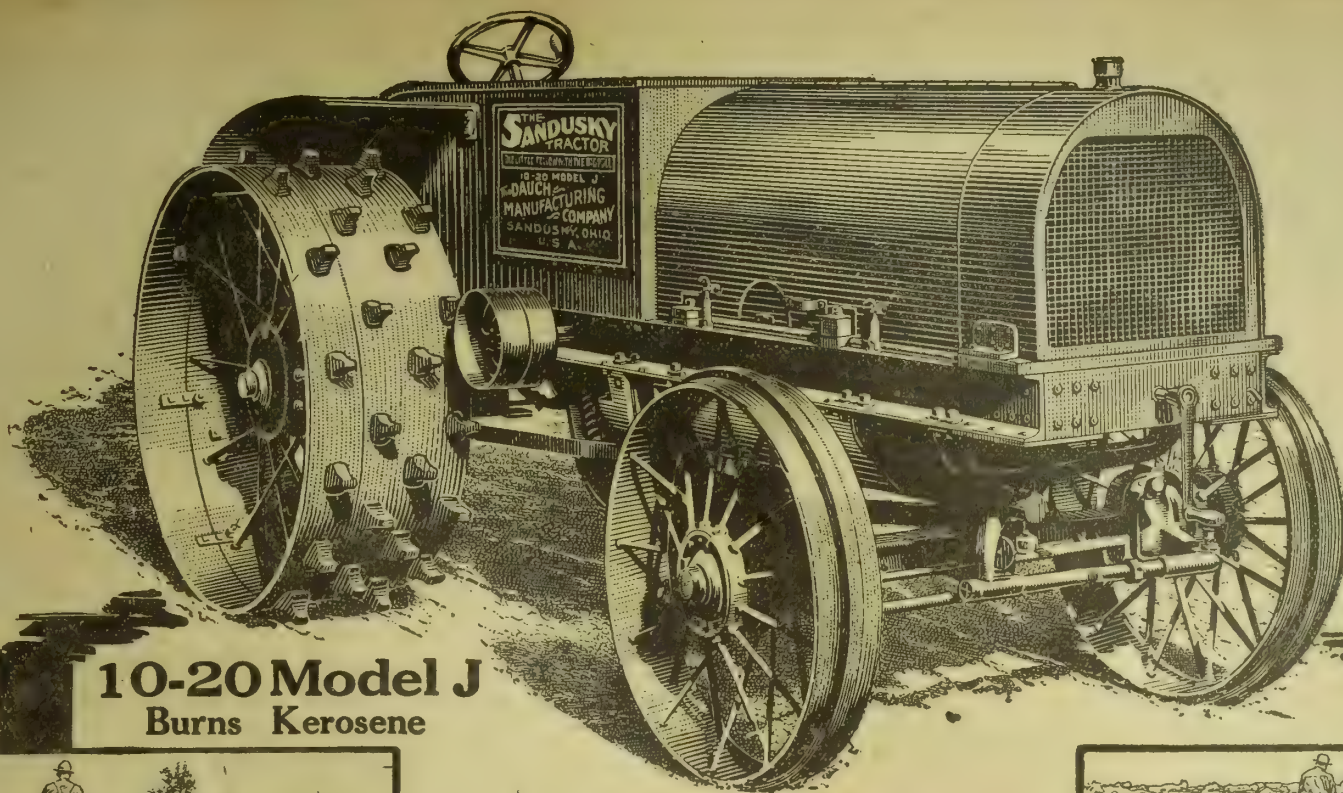
Sweet Clover Seed

Get Samples and Prices

Western Soil Bacteria Co.

422 Sansome St.
SAN FRANCISCO, CAL.
"Breeder of Westrobae."

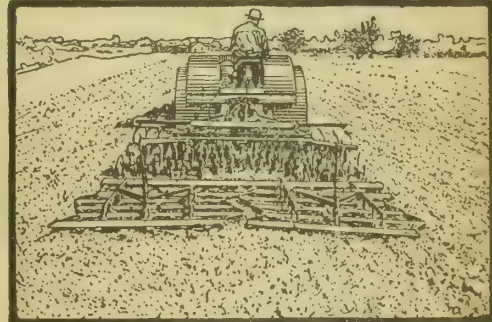
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Circular containing 100 mechanical movements mailed free.



10-20 Model J
Burns Kerosene



\$1095⁰⁰
F.O.B.
SANDUSKY.



THIS 10-20 Model J Sandusky Tractor places the farmer with lesser acreage on the same basis of economy as the man with the larger farm.

Gives him proportionately the same dependable service, produces the same results in dollars and cents and effects the same economies of labor as secured by the hundreds of farmers operating our 15-35 Model E.

Pound for pound the Model J is as good a tractor as our larger machine. It is designed on sound engineering principles, built with the same mechanical precision, of the best materials and proved out thoroughly in actual field work.

It is sold strictly on a guaranteed basis, after an actual demonstration *on your farm* has shown that it is profitably adapted to your needs and capable of doing your work.

You buy tractor certainty when you buy a Sandusky, and you get it at a reasonable price.

BRIEF SPECIFICATIONS

Our own four-cylinder, four-cycle, $4\frac{1}{2} \times 5\frac{1}{2}$ motor; drop forged crank-shaft, cam-shaft and connecting rods, interchangeable high grade bearings; combination force feed and splash oiling system; high tension magneto; Bennett air cleaner; belt pulley; three speed transmission; Timken worm and gear drive; Hyatt equipped; universal couplings between motor, transmission and differential; three-point spring suspension; thorough protection against grit; full steel construction; short turning brakes. Weight, 4000 pounds; wheel base, 76 inches; height, 52 inches.

BOOK J-133 FREE

It describes fully the unique principles of design, the construction and performance of this smaller "Little Fellow With the Big Pull." Also gives the details of our "Try It Before You Buy" sales policy, as well as covering our broad, binding guarantees. Tell us your problems, and we will gladly assist you in solving them without obligation on your part. Be sure to ask for Book J-133

A NEW PLAN—FREE SERVICE

We announce an entirely new departure in tractor selling. A coupon book good for 100 hours of service goes with every Model J. This means expert service and help without charge when you want it. See catalog for details.

If your work requires more power than furnished by Model J let us send you catalog covering our 15-35 Model. Ask for book E-133

TO DEALERS—We want men of standing, with pep and energy, to get behind this 10-20 Model J and push it. Write for our proposition.

THE DAUCH MANUFACTURING CO., Sandusky, Ohio

The Sandusky Tractors—both Models—are ready for inspection at and delivery from our principal Factory Branches and Service Stations at Indianapolis, Ind.; Bloomington, Ill.; Milwaukee, Wis.; Lewistown, Mont.; Minot, N. Dak.; Fargo, N. Dak.; Sioux City, Iowa; Lincoln, Nebr.; Wichita, Kans.; Dallas, Texas; Leesburg, Fla.; Los Angeles, Cal.; Sacramento, Cal.

THE SANDUSKY TRACTOR

"THE LITTLE FELLOW WITH THE BIG PULL"

General Agricultural Review.

FIELD CROPS.

The honey crop of Monterey county was valued at \$125,000 during 1916. An increase of 25 per cent in the number of colonies established is reported.

It is reported from Tulare that Leland C. Rausch of Redlands has bought 332 acres of land in the Pixley district and will plant it to rice this season. New buildings to cost upwards of \$4,000 will go up.

The asparagus shipping season started in Imperial county last week and will increase in size rapidly during the next few weeks. Lettuce shipments to Eastern points are also being made.

Canners are said to have representatives in the Gridley district of Butte county trying to contract for tomatoes. The cannery there will be operated the coming season if the acreage warrants.

News comes from Oxnard that local bean brokers there are receiving inquiries for two-week options on large quantities of lima beans. A number of future contracts have been written by growers for next season's limas at \$6.60 to \$6.80.

A report from Stanislaus county says that while good rice crops were the rule in that county last year it does not seem probable that the industry will become an important one there unless at a much better price than the present.

News comes from Tulare that C. W. Gates of Los Angeles has put \$100,000 in development work on 23,000 acres of land southeast of the Tulare Lake bed and will sow to wheat. Machines are now busy building levees as protection from high water.

A most complete and unbiased statement of climatic and soil conditions in Imperial county and crops adapted to that section is contained in a bulletin of the University of California written by W. E. Packard, who has charge of the Imperial Valley Experimental Station. It is just off the press.

Because hops are selling at 66 cents a pound in England and the crop is about exhausted, together with a big decrease in acreage in all Pacific Coast States, Harry Fraser, organizer of the Cal. Associated Hop Growers, expects record prices for the 1917 crop. He states that 38,000 bales of the 50,000 needed to complete the organization have already been signed up in the Sacramento Valley.

DECIDUOUS FRUITS.

September 13 and 14 have been set aside as the dates for the holding of the Arbuckle Almond Fair this year.

The California Peach Growers, Inc. have advised brokers that there will be no decline in peaches during February or March.

The Robert Marsh Co. are reported to be planting 500 acres of land near Perris, Riverside county, to apricot and pear trees this spring.

McKillop Bros., who recently purchased the Frank Dorn ranch in San Benito county, are planting 100 acres of prune trees and a like amount of apricots.

Dr. L. H. Bailey, dean of the College of Agriculture of Cornell University, left Los Angeles for Japan and China last week where he will study the flora of those countries.

According to the January report of County Horticultural Commissioner Fred K. Howard of Kings county there were 160,000 trees and plants shipped into Kings county during that month.

The supervisors of El Dorado county have notified County Horticultural Commissioner John E. Hassler that after March 1, that office will be vacant. It is said that action was taken to reduce county expenses.

In the annual report of the officers of the Sebastopol Apple Growers' Union, Inc., held at Sebastopol last week, 1916 was shown to have been the most successful year in the history of the organization. The old directors were re-elected.

After a conference with Southern California horticultural commissioners, State Horticultural Commissioner Geo. H. Hecke announced last week that the next State Fruit Growers' Convention will be held in Riverside sometime early in June.

J. F. Niswander, vice-president and general manager of the Cal. Peach Growers, Inc., reports that packers are already endeavoring to contract with the association for the 1917 crop. No orders will be taken subject to the opening price as was done last year.

Report has it that D. C. McCallum of Butte county has found an old pear tree that is not bothered with either blight or frost and that it is a regular bearer of fine fruit. He has grafted over 250 nursery trees on wild pear roots and will experiment as to the commercial aspects of the variety.

County Horticultural Commissioner C. K. Turner of Placer county says in his annual report for 1916 that there were 3314 cars of decidu-

ous fruit shipped from that county during the year. Of this amount there were 13,992 tons of green peaches, 10,778 tons of plums, and 8,712 1/2 tons of pears.

Tulare county reports the following crops for last year: Peaches, 16,100 tons; prunes, 5,000 tons; apricots, 30 tons; almonds 10 tons; sugar beets, 28,320 tons; pears, 80 tons; plums, 1600 tons; grapefruits, 80 tons; lemons, 400 cars; and oranges, 5,300 cars.

CITRUS AND SEMI-TROPICAL.

Except for an occasional car or two navel orange shipping from the

ALFALFA LAND

FOR DAIRYING.

Also first-class Orchard Land, 10 acres and up.

Brentwood Irrigated Farms

in Contra Costa County, 63 miles from San Francisco. Easy terms of payment.

For Prices, Etc., Address

BALFOUR, GUTHRIE & CO.

LAND DEPARTMENT,
350 California St.
San Francisco.



ALMOND TREES

1750 each Texas and Drakes, 4-6 feet.

PRUNES—Burbank's Standard, Sugar, French and Imperial, on all roots.

All other leading fruits in good supply.

SHADE TREES—The finest blocks in the State.

CROWS NURSERIES, Gilroy, Cal.

The Cunningham Land Roller and Pulverizer



Makes a Perfect Seed Bed—Stops Evaporation—Preserves Moisture—The Best Clod Crusher ever made for Farmer, Orchardist, Vineyardist, Nurseryman, and Seedsman.

Made in All Sizes
Write for Circular
Manufactured and Sold
Exclusively by

Spalding-Robbins Disc Plow Co.

625 Market St.
SAN FRANCISCO.

Sample Costs

A dollar and cents argument for the YUBA

Some records chosen at random

1 There is no mystery about the upkeep costs of the Yuba. Costs vary just as the length of the season, soils and drivers vary.

2 Mr. Wesner says, "Earned \$4500 in two years. Total cost of upkeep was \$225."

3 Davis and Son report, "The year's cost for repairs was less than \$5.00."

4 Geo. S. Wheeler, a contractor, gives an average daily operating cost of \$9.56 (including engineer's time) for 16 months' work. His gross daily income was \$20.54.

5 Mr. Thomas Couch of Montana has taken care of 700 acres for two years and has used about \$40 worth of repairs.

6 Costa and Silva didn't even have to repair a spark plug at the end of thirteen months' hard work.

7 Practically no upkeep cost the first season. Thereafter it varies from \$10 to \$500 per season, depending on the amount of work done.

8 The Yuba owner is protected against an unreasonable upkeep cost. The right materials and low repair prices are the reasons.

Yuba Manufacturing Company

Formerly The Yuba Construction Company
(Change in name only)

433 California Street
San Francisco

Send for Yuba Bulletin



Yuba Manufacturing Company Dept. A-2.
433 California St., San Francisco, California
Gentlemen: Kindly send me catalog and prices on the Yuba Ball Tread Tractor.

I am interested in Model 12-20 _____ Model 20-35 _____

Name _____

Town _____ State _____

P. O. Box _____ Size of farm _____

(Check main crop raised) _____

_____ Fruit _____ Rice _____ Grain

_____ Grapes _____ Hops _____ Alfalfa



REASONS WHY THE Waterloo Boy DISTILLATE TRACTOR is the best proposition.

It is a Three Plow Tractor, the right size and power for orchard and field work. Embodies the experience of 20 years of engine building. Economical in operation, using about 15 gallons distillate for 10 hours' work. Sells at a low price—the best Tractor buy.

Meet us at the San Bernardino Orange Show, or write for Catalog.

W.L.Cleveland Co.
211 N. Los Angeles St.,
Los Angeles, California.

Old Style Grafting

Ruins Trees.
Destroys Crops.
Grafts often broken by wind.
Limbs split and decay.



Our Method of Side Grafting



Remedies all this.
Saves wax.
Saves labor.
Grafts grow better and mature sooner than by any other method.
It will work over your grapes.

Full information sent free.
W.S. TUTTLE & CO.
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Walnuts are Dollars

Plant a Walnut Grove, which will grow into dollars while you sleep. The Vrooman Franquette bears in three years and sells for 20c a pound—is smaller than an apple and sells for more money. Get in with the tide and get rich. At forty feet apart, it only takes 28 trees to the acre. A full-bearing orchard will crop you \$1500 to the acre. True Vrooman Franquette Walnut Trees grafted on California Black Walnut Roots at

**MIRA MONTE
NURSERY**
San Jose, Cal.

Lindsay district of Tulare county has been completed for this season, according to reports from that place.

It is said that while the shipments of oranges from the Pomona district are going East rather slowly the returns to ranchers at this time reach about \$6,000 per day.

Well rigs are being erected for the development of deep wells in the Terra Bella Irrigation District which will supply water for 10,000 acres of citrus fruit land in that section.

Smudge pots have been used extensively in the Tulare county Valencia orchards during the recent cold weather, according to reports, and much fruit has been saved as a result.

Three years ago, five acres of C. D. Baker's orange orchard in eastern Los Angeles county was badly mottled. The mottling is all gone now, and Mr. Baker believes the improvement is due to 5 tons per acre of sugar beet lime.

Disking the cover crop lightly to preserve moisture till plowing time, is being practiced by Ralph McNees of Los Angeles county. The disking leaves much of the cover crop still growing, which he hopes will hold the soil in case of floods like those of last spring.

It is announced from Upland that the Lemon Heights Citrus Association has just been organized by thirty-one lemon growers who control about 400 acres of the best citrus property in the district. The association will be a member of the California Fruit Growers' Exchange.

VINES AND VINEYARDS.

A considerable acreage is being planted to Emperor grapes in the Woodlake district of Tulare county as a result of satisfactory yields and prices recently.

The strike issue between vineyardists of Fresno county and vine pruners is still unsettled, the strikers demanding higher wages and shorter days, which the vineyardists refuse to concede.

An experiment is being conducted by Geo. H. Reynolds of Orosi with Zante currants. Vines that he planted last year put on a good growth, but the size of the crop cannot be ascertained till the third year.

Because, it is claimed, the Cal. Wine Association refused to accept delivery of their grapes in 1915 at a contract price agreed upon, twenty growers in Fresno county have sued the wine company for a total of \$6,740 damages.

Because some vines affected with phylloxera in Fresno county are being dug up and sold for fire wood, this dreaded disease is being spread among vineyards of Fresno county, according to Horticultural Commissioner Fred P. Roullard, who states that he will prosecute all offenders in the future.

DEATH OF PROF. STUBENRAUCH.

The College of Agriculture at Berkeley is plunged into mourning this week by the death of Arnold V. Stubenrauch, professor of pomology, which occurred after a brief illness on the evening of February 12. Our readers throughout the State, who widely know him for his work in fruit lines, will be pained to hear of the early ending of his career, in the course of which he did much good work which will long be influential. Prof. Stubenrauch was still in middle life, grown and educated in California, and a graduate of the State University. He served in several capacities under Prof. Hilgard, who leaned upon him confidently and esteemed him very highly. He was then occupied for several years as associate of G. Harold Powell in his fruit work for the Bureau of Plant Industry and succeeded Mr. Powell in that line, pursuing several investigations into handling grapes, apples and small fruits in storage and shipment from the Pacific Coast. During the last three he has been at the head of instruction and research in deciduous fruit lines in the University, man-

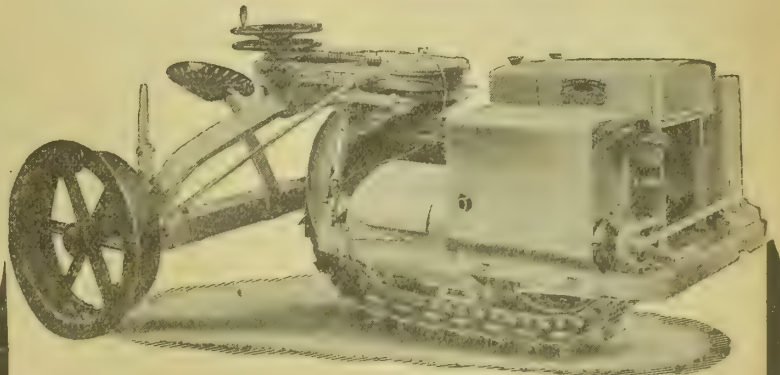
festing great mastery and devotion in his work, and his death is a serious loss to the State.

KEEPING BIRDS OUT OF VEGETABLE GARDEN.

Orange county vegetable growers keep birds away quite effectively by setting lath stakes two or three feet

tall about the gardens and tying white strips of cloth about a foot long at their tops to flutter in the wind. Some run a cord from stake to stake along every eighth or ninth row and tie the streamers to them. The cords are run crosswise of the prevailing wind so the cloths will not wrap around them so much.

Does The Work of Six Horses



---and saves you money!

BEAN TrackPULL Six Horse Tractor

Find out about this wonderful little tractor now—before you start another season's work. The BEAN TrackPULL Six Horse Tractor weighs only 2800 pounds—so light that it does not pack the softest soil. It will pull any load six horses can pull all day long and costs no more to keep and work than two horses. And the BEAN TrackPULL Tractor will work 24 hours a day if you say so. Here is powerful traction for every use at a low cost. The price is \$975—little more than you spend to keep six horses for a year. There is no other track-laying orchard tractor made for less than \$1800. Now see what it will do for you.

Orchard Work

In an orchard or citrus grove this tractor will work under tree boughs only four feet off the ground, and closer to the trees than horses can go. It is especially adapted for cultivating and works hour after hour without a stop. A boy can operate it with a little practice. The BEAN TrackPULL Tractor "gee's" and "haws" just like a team of horses, and delivers as much power on the turn as when pulling straight.



The 10 Foot Turn

This wonderful little tractor is so compact that it will turn completely around in a circle 10 feet across. Because it can make such a short turn, it gets into corners just as well or better than a team can. The motor is a simple four-cylinder automobile type, but built for heavy duty. Controlled by a friction clutch driving four big gears. It has a pulley for stationary work. The fenders and wheel flanges can be removed for running on boulevards.

No Other Tractor Like This

No other tractor now does or ever did what the BEAN TrackPULL Tractor does. No other tractor with such advantages was ever sold at such a low price. It is fully patented. There will be no other tractor like it. The demand for these tractors is growing daily. Wide-awake farmers and growers are realizing the value of the BEAN TrackPULL Tractor.

We Guarantee Prompt Deliveries in April

Our factory has been working night and day, but we cannot supply the demand. We are now enlarging our plant and increasing our facilities and by April will be able to handle deliveries promptly.

If you are interested, don't delay.

MAIL THE COUPON. GET ALL THE FACTS.

Clip the coupon printed at the right, and mail it today. It puts you under no obligation whatever. Our folder tells everything. Fill in the coupon and mail it now.

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Please send me prices and the big folder with the complete story of the BEAN TrackPULL. If I decide to purchase I will need my tractor about

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I work acres
I grow
(Name fruits or vegetables you produce.)
Name
Street
City State

Mechanical Power on the Farm.

Users of tractors, engines, pumping plants, motor trucks, automobiles, electric motors, and other mechanical farm power are invited to make this department an exchange of their experiences and troubles.

SUCCESSFUL TESTS OF CITRUS TRACTOR.

[Written for Pacific Rural Press.]

A new orchard tractor (new in California) has been going through its paces in Southern California for the past few weeks. It is the baby of the Avery family—10 h.p. on the belt and guaranteed to do whatever four horses can, but costing only the price of two good ones. We saw it Feb. 10 in the J. W. Cox lemon orchard not far from Whittier. The demonstration had been locally advertised; and when we arrived at 3:30 there were some 14 automobiles besides other rigs lined up along the road; while their occupants were scattered among the young trees where the tractor had been plowing since one o'clock with a two-bottom disk plow. The ground had been disked by team, leaving it covered with clods half the size of a derby hat. That was poor condition to leave it in, and the tractor wasn't leaving it that way. It was turning up mellow moist earth and laying it over as smoothly as most people plow soft land; though the driver, Roscoe

base is 109 inches and the width over all is 45 inches, while it is only about three feet high at the highest point. The two front wheels are about 16 inches apart. Her next larger sister, an 8-16, is very little taller or broader. The baby weighs 2300 pounds.

LOCATING WELL ON LOW GROUND.

To the Editor: Will you please tell me whether it would be possible and practicable to irrigate an orchard of 20 acres that has a ditch across one end 40 rods long, with a fall of one foot in the 40 rods, by pumping into the lower end instead of the high end? The ditch is an open ditch, and has walls amply high to take care of the extra foot of water. I wish to locate the well at the lower end if possible on account of irrigating near-by alfalfa which would have to be irrigated by pumping the water across a lateral which we do not own and will have to go either over or under.—C. A. S., Pasadena.

[Answered by Prof. S. H. Beckett, University of California.]

In overcoming the one-foot grade in 660 feet, at least .5 of a foot additional must be added to give suf-



This little orchard tractor pulls 6-foot double disks easily over newly plowed ground.

Anthony, admitted absolute lack of plow-knowledge, and not much of tractor knowledge.

From beginning to end, the little four-cylinder engine responded to every touch of the driver. She pulled the plows down and up across a ravine with 40-degree slopes, though with not quite so deep a furrow as the full six inches she turned on the level. Only when the grade grew so steep that fuel would not run from tank to carburetor (which is at least a foot lower than the bottom of the tank) did she begin to balk. Roscoe gave the tank all the compressed air he had, and that forced enough gas out to get the machine and plows up the hill. Running along a side hill, so much traction devolved onto one wheel that the upper one had to be held down by loading that side with a man or two extra. On the turns, one center was skipped each time. Otherwise everything went beautifully. At the end, the tractor was backed up a couple of planks onto a truck to be taken back to town to be used in other demonstrations.

About the Tractor.—This little engine has four 3-inch cylinders of 4-inch stroke and burns distillate or gasoline with proper adjustments. The friction drive keeps the wheels going even when the tractor is hitched to a walnut tree. The wheel

ficient grade to carry the water in the ditch. This will mean that the ditch at the lower corner will have to be built up at least 1½ feet above the elevation of the highest corner to be irrigated. Whether or not this is good practice depends mainly upon the soil type. In light loam, gravelly, or sandy soils, ditches built above the adjacent land level are a continuous source of annoyance; while if built in more impervious soils, such ditches may be operated successfully. Even under the best condition, ditches which are built above the adjacent land level are in the long run unsatisfactory and sooner or later are replaced by the elevated flume or the underground pipe line.

If the high corner of the alfalfa field to which you refer is at a lower elevation than the adjacent corner of the orchard, by means of an inverted siphon the water may be taken under the lateral referred to. The pumping plant may then be placed in the high corner of the orchard.

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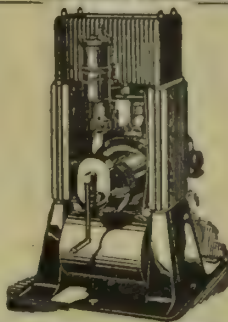
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the desert, is 176 feet long, and is driven with a single jerk line. Borax Bill, called King of the Mule Drivers, is celebrated as a jerk line engineer in the desert and today is one of the few of his kind alive. The wagons weigh 8000 pounds each and the rear wheels are eight feet high. One team has a capacity of 30 tons of ore and the wagons are thirty-three years old and were actually used in hauling

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IRON AGE Combined Hill and Drill Seeder

solves the garden labor problem. Takes the place of many tools—stored in small space. Sows, covers, cultivates, weeds, ridges, etc., better than old-time tools. A woman, boy or girl can push it and do a day's hand-work in 20 minutes. 25 combinations, \$3.25 to \$15.00. Write for booklet.

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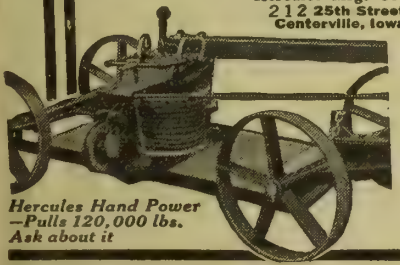
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ore from the Death Valley Mines of the Pacific Coast Borax Company to the nearest railroad station, 162 miles away. The team that starts this week overland is the last of its kind and it will drive to New York to show the present generation the difference in styles of transportation then and now.

CULTIVATE BERMUDA SOD BEFORE PLOWING.

[Written for Pacific Rural Press.]

A stubborn sod of Bermuda grass had overrun a ten-acre field now being worked by Frank Van der Poel of Imperial county. Mr. Van der Poel says that when you try to plow Bermuda sod, it is next to impossible to plow it shallow or to regulate the depth at all. The plow always wants to go deeper.

To make the plowing easy, he had hitched a 10-tooth cultivator to his 8-16 tractor and was tearing around the field in fine shape, lapping the cultivated strip half its width on every round. He did the same thing crosswise, but deeper still. Thus the sod was torn to small pieces so that it would plow easy right away. This cultivator is used ahead of all plowing, not only for the sod, but also to break up clods so the dirt turned under will be fine. He did it that way last July and August on 30 acres, and plowed it 10 or 12 inches deep. This does not kill the grass, but puts the ground in far better shape for crops.

WORDS WITHOUT POWER.

On a recent rainy day four hunters went out from Macon, Mo., to shoot squirrels and rabbits. They were in a good car—that is, a good car for dry weather. In the bottoms the car sank to its axles and balked. A consultation of war was held and Charley Weisenborn, one of the party, volunteered to bring to the rescue a span of Missouri mules. He said he knew a farmer in the vicinity and that he would go to him for aid. Presently Charley appeared with the farmer and two large mules. Ahead of the bottoms was a long and steep hill.

"We want you to get us out of this," explained Charley, "and then help us to the top of the hill."

"Who's them fellows you got with you?" the farmer asked.

"Oh, that fellow without a mustache is Walter Hunter. That serious looking man over there is Earl Edwards—runs a store in Macon. The dignified gentleman with his hands in his overcoat pockets is the Rev. G. B. Smith of the Methodist Church."

"A preacher?"

"Yes, pastor of the church."

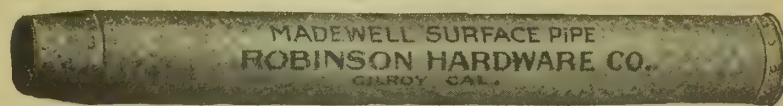
The farmer shrugged his shoulders and turned away.

"It's no use, Charley," he said; "those mules would never yank the car out of the mud under the influence of language that a preacher would stand for."

The extra tire which every autoist should carry with him should be used to replace one of the service tires at regular intervals. The tire removed should then be gone over and put in condition. The spare tire should always have the paper in which it is packed or a tire jacket on it.

The most effective safety device known is a careful man. Get the "Safety First" habit.

Don't let your steering rod connection loosen up so that your wheels wobble.



Lock Seamed and Soldered

There is a tremendous difference in surface pipe. This is appreciated most by the man who has wasted time and money on inferior makes. If you want absolutely the strongest and best surface pipe you can buy, select

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It has many distinctive important advantages you can't afford to overlook.

The Madewell Long Lock Seam is made doubly sure and strong by soldering the entire length. A better seam can't be made. The Madewell Lock Seam Sleeve—used in Madewell pipe only—is decidedly stronger and smoother than the old fashioned lap and riveted seam used in other pipe. This feature alone puts Madewell Pipe in a class by itself.

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This valuable book was written especially to suit Western conditions—by men who have blasted hundreds of acres of stumps like yours. It contains many letters from Pacific Coast farmers, telling why they prefer the Giant Farm Powders.

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Milk Producers Likely to Organize.

[Written for Pacific Rural Press.]

The big problem of dairymen furnishing whole milk for city trade is to get a market in spring for the surplus "green-grass" milk. In San Diego county as explained by Farm Adviser H. A. Weinland, an effort is being made to solve the problem systematically.

Certain milk producers supply the city distributors regularly the year around. Others supply them during the scarce season only. Others retail their own milk. Often the grocers handle milk at cost for convenience of their patrons. With the last three classes unorganized in connection with the other two, there is difficulty keeping the price to producers up to the cost of production. The latter is figured at 20 to 23 cents per gallon here, according to Mr. Weinland. The "gentlemen's agreement" retail price is 11 cents per quart and 6 cents per pint now in mid-January.

When the extra flow comes with the spring grass, the dairymen who sell to distributors during scarce seasons only, must find another market for their entire product. They find it profitable to cut the retail prices of the distributors, rather than sell to butter factories. This reduces the margin on which the regular distributors operate and often causes a loss, because their regular producers get a contract price. This loss must be replaced by making a

wider margin between producers' and consumers' prices.

If all five classes mentioned above as being concerned in the milk supply of San Diego were organized, the milk graded and sold according to fat content, pooling it as occasion should show best, and sold only to those distributors who would retail it at a price not exorbitant to consumers, but yielding a living profit to the producers, the problem would be solved. The retail prices and the producers' prices could be varied to suit the season; for the plentiful spring milk is produced cheaper per gallon than when feed is scarce. The distributors could operate on a fixed margin per gallon and could expand their profits by expanding consumption. They would be protected against loss due to independent retailers cutting under; and when a surplus must be sold to butter factories, the lesser profits would be prorated to everybody. The distributors could pay a higher price to producers without raising the price to consumers; because they would be protected against the losses due to under-cutting. Producers would all be assured of the maximum prices consistent with big consumption.

There is hope that, with the aid of State Market Director Weinstock, the organization may be ready to handle the next spring's milk.

Milk Cool on a Long Haul.

The objection to hauling milk daily 37 miles to San Diego from San Pasqual Valley by auto-truck was that it would arrive in bad condition, especially in summer time. But E. H. Webb thought he could do it and began two years ago to haul his own and neighbors' milk. Now this milk is considered about the best received

by San Diego, and so appreciated.

A few cans of soured milk were encountered the first year, but their causes were found and remedied. The milk is hauled in 10-gallon cans, of which two sets are now kept so that one set can be put out in the sun alternate days, after cleaning and sterilizing them. Two cans had been found sour because the caps were not off during the day at home, so lids are always removed during that period. Flies do not enter clean cans set in the wind and sun in a clean place. Hot cans are uncomfortable and clean cans offer no inducement to flies, anyway.

The Principal Cause of sour milk was that it was not cooled and kept cool; for no ice is available for this purpose. But Mr. Webb and his sons worked out a system which has proved satisfactory. A 300-gallon tank is pumped full of water. Grain sacking is hung over the edge of the tank all around the outside with about one foot hanging in the water. The sacking acts as a wick, drawing water to the outside, where it evaporates in sun and wind and cools the water in the tank. This water is piped down hill to the regular milk cooling machine at the barn.

To keep the milk cool on the road, each can is covered with a wet bar-

ley sack; and a sheet made of grain sacks is sometimes thrown over the whole load. A few bucketfuls of

water on this sheet about twice on the four-hour trip keeps the milk cool except in extreme weather.

SHARPLES

SUCTION-FEED PATENT

and what it means to you dairymen

The new SHARPLES patent, one of the broadest process patents ever obtained, covers any separator that will *skim clean at all speeds*. It covers the *process* of varying the feed in proportion to the centrifugal (separating) force. No one else can, for 17 years, make and sell such a separator.

You know of the tremendous losses caused by all fixed-feed separators because they are never turned full speed. More than 4,000 investigations *proved* that 19 out of 20 operators turn their separators *below* speed most of the time. Purdue Experiment Station Bulletin No. 116 *proves* that the loss from slow turning amounts to from 7 to 13 lbs. of butter per cow per year—or the appalling loss of 80,000,000 lbs. of butter yearly in America alone!

Skims Clean at Any Speed

So we realized that it was far from sufficient that a separator *could* skim clean when properly handled. It was vitally necessary that it *would* skim clean—even when improperly handled. That's SHARPLES, which sucks in just as much milk as the centrifugal force can perfectly handle—and *no more*. The result is *clean* skim at all speeds and *unchanging* thickness of cream.

All separator makers *know* of this tremendous loss and some *admit* it in their advertisements. They *cannot* stop the loss (because SHARPLES basic patent covers any separator that will skim clean at all speeds) so they try to *warn* against it by putting on a sight speed indicator (on which the operator's eyes must be glued every moment and his muscle must respond instantly to the indicator's *prod* for more speed)—or a bell indicator (which, like the fire alarm, gives notice of damage only *after* it is done). All such devices have proven *failures*, time after time, because few operators can stand being prodded or yelled at whenever the speed slackens.

A bell ringing device is truly an acknowledgement of the vast *superiority* of SHARPLES which automatically *prevents* all losses from uneven turning instead of simply announcing them.

Simple Tubular Bowl—No Discs

Not a single piece is added to accomplish the wonderful "Suction-feed." And the SHARPLES was *already* by far the *simplest* and easiest to clean. We realized that it was not enough that a separator *could* be kept clean—it must be so simple that it *would* be kept clean. So the *patented* SHARPLES Tubular Bowl contains *no discs* or blades—it is just a plain, light, steel tube. No other separator can use it.

All other separators must contain discs or blades to skim at all. Their makers wrangle between them as to how many discs, and if curved or straight, and how the milk should be fed into them. They constantly change their designs without getting nearer the *ideal*. Some use more discs, many of them boast of using less. Such boasts plainly acknowledge that "the fewer discs the better."

The *ideal* is SHARPLES which has *no discs at all*. But this ideal is a SHARPLES patent.

Important to Dairymen

So all SHARPLES patents assure you, as a SHARPLES user, of *larger* profits and *greater* convenience than the other man gets. The knee-low supply tank, single ball bearing in oil, slow and easy crank speed, freedom from the tyranny of fixed speed, increasable capacity, easiest cleaning, automatic oiling without oil cups or oil holes—all these are *your* advantages *exclusively*, because they are exclusive SHARPLES features.

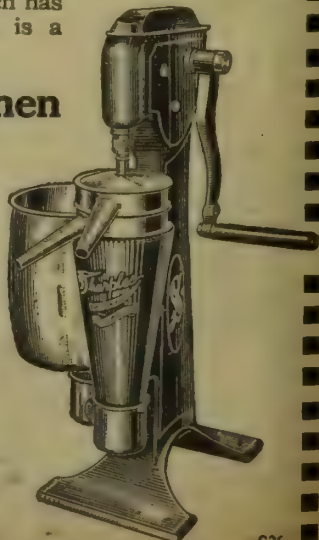
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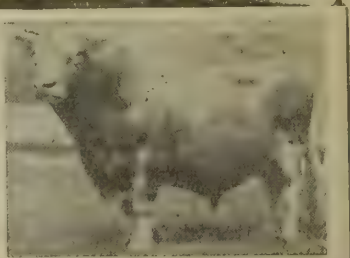
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used in a grade herd in Ohio sired daughters that
produced 50% more milk and 70% more butter
fat as 2 year olds than did their dams when mature.

GUERNSEY MILK contains 5% Butter Fat

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booklets about Guernseys

THE AMERICAN GUERNSEY CATTLE CLUB
BOX P.P. PETERBORO, N. H.



Good Records at Whittier.

[Written for Pacific Rural Press.]

Three heifers are doing outstanding things at the Whittier State School. Windsor Milk Maid Segis, born May 10, 1913, freshened Nov. 5, 1916, and produced 566.1 pounds milk from which 26.04 pounds butter was made. They have two heifer calves from this cow sired by King Segis De Kol Mead, son of De Kol of Valley Mead, the world record and three times State grand champion Holstein cow. Another heifer, Whittier Ormsby Hartog, born July 5, 1914, freshened Dec. 8, 1916, made a record of 334.7 pounds milk and 17.388 pounds butter and having an average test of 4.15 per cent fat in the milk. She is a daughter of Mutual Ormsby De

Kol, and a granddaughter of King of the Pontiacs. Her record is better than the one made by Windsor Milk Maid Segis at her age (14.87) and her individuality is as good. The first mentioned record above is very near the State record of 27.86 pounds which still holds, though made three and a half years ago by A. W. Morris & Sons' Natula Fobes 2nd. Another heifer, Whittier De Kol Netherland, freshened Jan. 29 as a junior two-year-old and is being tested for 30 days, because near the end of her first week's test she was increasing both milk and fat. On Feb. 7 she made 2.37 pounds butter; and on Feb. 8 she made three pounds. These are excellent records.

Is Hay Chopping Advisable?

To the Editor: I would be very glad if you would give me information as to the benefits of chopping up dry hay, which would be mixed with alfalfa, oats and barley, for use in a dairy. I am told that from two to two and a half tons of chopped hay can be stored in a barn where one ton of loose hay can. If you can tell me whether there is much advantage so far as saving in feed and securing extra food value out of the feed I would be greatly obliged.—H. M. B., Santa Clara.

It is commonly estimated by those who store their hay in chopped form that about three tons of chopped hay can be stored in the same space required for one ton of loose hay. As a precautionary measure, though, you should either have a strongly braced barn or put in additional braces, as there is much more pressure against the sidewalls with chopped hay than loose hay. Sometimes we have seen it stacked inside the barn about a foot from the wall

to overcome this condition. Chopping hay does not increase the feeding value of hay, but practical feeders claim that 15 to 20 per cent of the hay is saved by chopping, owing to the relatively small amount wasted as compared with loose hay feeding. In your location it would probably be advisable to stack the hay before chopping, but in the interior valleys it may be hauled direct from the field to the cutter, providing it is left in the shock till pretty thoroughly dried out. Otherwise there is danger of spontaneous combustion.—Eds.

Silage is similar to grass in value. Therefore, winter feeding more nearly approaches June feeding.

If the crop is allowed to get ripe or dry out in any way, it does not pack well, and is almost certain to produce moldy silage.

Save Your First Crop of Alfalfa

California ranchers who get busy quick will save thousands of dollars! A silo will save your first crop of alfalfa, usually made worthless for hay on account of the large quantities of foxtail and other weeds.

INDIANA SILO

Have you been depending like a lot of others, on hay and other high-priced feed to keep your cows sleek this Winter? With feed bills going higher and cream checks smaller, don't you wish that Indiana Silo was erected last summer?

Early Buyer's Discount

Don't delay—mail the Coupon above, or write at once. We are now making up carload shipments to California. Get our Early Buyer's Discount. Buy on easy payments, if you wish, and pay out of the profits. But act quick—NOW—and save that first alfalfa crop.

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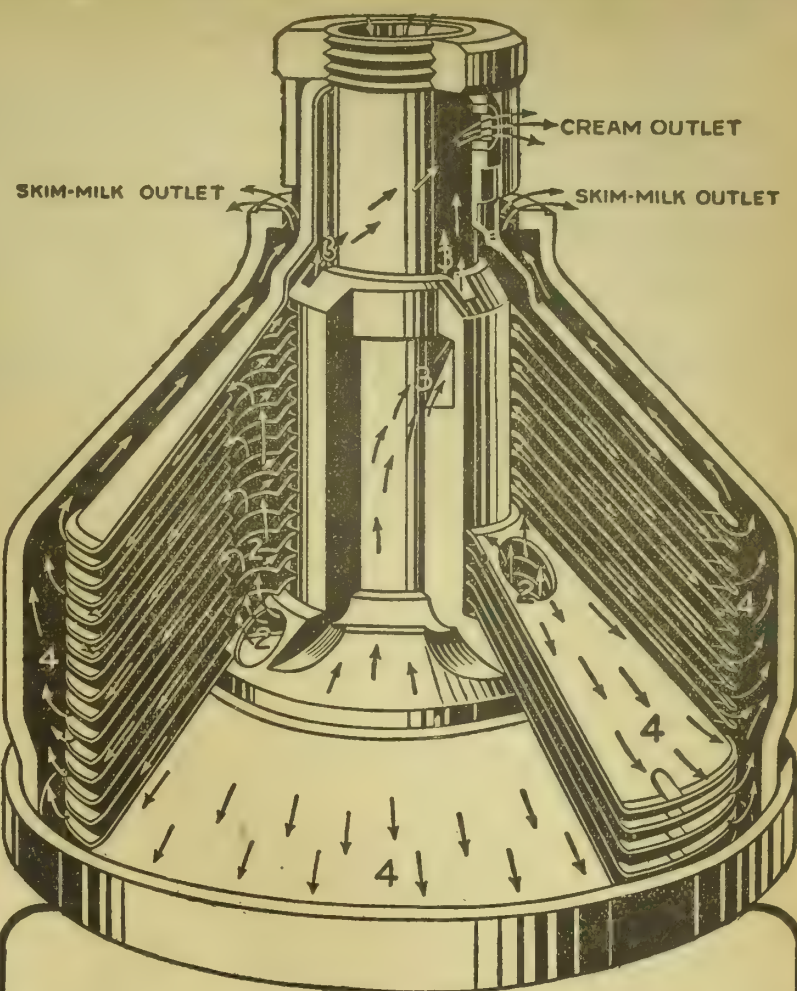
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Here is the heart of THE NEW DE LAVAL CREAM SEPARATOR

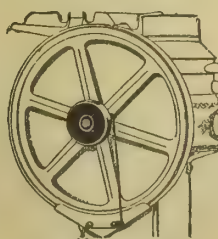
THIS is the new self-centering De Laval bowl with detached spindle, that is creating such a sensation in the dairy world.

This new De Laval bowl, with patented tangential tubular milk passages and patented removable milk conveyor, makes possible in a bowl of given size and weight, operated at a given speed, greater skimming efficiency and capacity than has ever before been attained in any other cream separator bowl.

These are big advantages that you can secure only in the De Laval.

But aside from the big advantages of greater capacity and closer skimming, there are many other important improvements in the New De Laval.

All discs are now interchangeable and are unnumbered. There are fewer discs. On account of greater simplicity of bowl construction, the New De Laval is easier to wash and, capacity considered, is still easier to run than before. High grade construction and design, together with perfect automatic lubrication, are a guarantee that the splendid De Laval record for durability will be maintained in the new style machine.



Every New De Laval is now equipped with a Bell Speed-Indicator, the "Warning Signal" which insures proper speed and uniform cream.

If you are trying to get along without a cream separator or with a half-worn-out or unreliable machine, why not get a NEW De Laval NOW and stop your cream waste? You don't need to count the cost, because the De Laval will soon pay for itself.

There is a De Laval agent near you who will be glad to explain all the improvements and advantages of the NEW De Laval, and who will set and start a machine for you on your farm and let you try it for yourself.

Why not see the nearest De Laval agent at once? If you do not know him, write to the nearest office for any desired information.

New Catalog will be mailed upon request

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50,000 BRANCHES AND LOCAL AGENCIES THE WORLD OVER

LA DRIVER STOCK FARM

Herd headed by CREAMCUP CORNUCOPIA, son of COLANTHA SIE PONTIAC AAGGIE, whose three nearest dams average 30.50 lbs. of butter. Sire, COLANTHA JOHANNA LAD, son of the first 34-lb. cow.

Young bulls for sale. Correspondence solicited.

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Nicolaus, Cal.

California Hog Book

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PACIFIC RURAL PRESS, S. F.

Possibilities of Alfalfa-Finished Beef.

[Written for Pacific Rural Press.]

Many alfalfa growers have looked forward to the time when some practicable way of finishing beef steers on alfalfa lands would be fully demonstrated in the interior valleys of California on the theory that such practice might furnish a safe and sure market for alfalfa hay on farms owned by those who do not care to maintain dairy herds.

That practicable methods of feeding beef steers on alfalfa lands may be evolved, but that the beef steer will never invade the alfalfa farm of 80 acres or less, is the view of W. E. Premo, manager of the Porterville Alfalfa Co. in Tulare county, who has handled several hundred head of beef steers on alfalfa land each winter for the past three years.

Mr. Premo's reasons for these beliefs are that the 80-acre alfalfa grower can handle dairy cows and hogs more profitably than he could feeder cattle and with less speculation, also because the smaller operator would encounter an almost prohibitive cost of feeder buying. Even the larger buyer runs against this objection, but is able to overcome it in a measure by being able to stand a bigger overhead expense in finding the stock.

But the large operator's path is by no means a rosy one as yet, because of the following reasons: ordinarily he does not receive a big enough spread in market quotations between November, when the cattle are put into the feed lots, and February or March when he sells them (the gain in weight is not sufficient to offset expense of feed and labor, a spread of at least one and a half cents a pound on the average being necessary to insure profits); he is

handicapped at times by heavy rainfall in a comparatively short length of time, causing muddy corrals and a consequent reduction in gain per steer per day; buyers do not pay sufficient premium for well-finished steers, although this latter is under way of improvement, according to Mr. Premo.

Notwithstanding these difficulties, Mr. Premo's three years' feeding has been satisfactory from a financial standpoint, for while his alfalfa only brought him \$3 a ton one year when the spring price for steers was less than the fall price, he estimates that his hay will net him \$25 a ton for the past season.

The equipment investment under which Mr. Premo operates is relatively small, consisting of corrals, feed and water troughs, hay chopper and feed wagons and teams.

The feed ration is made up of about 22 pounds chopped alfalfa hay and eight pounds of cocoanut meal and cottonseed cake per day per steer. The advantages of feeding chopped hay are many, according to Mr. Premo, for there is not only a direct saving in waste, but it can be handled about twice as cheaply as loose hay in feeding. Heretofore it has been chopped as used, but it would be practicable to cut and stack in the field direct from the shock, if allowed to dry out fairly well, and this may be practiced in the future.

As the matter of profits lies largely with the kind of cattle one has to feed, Mr. Premo spends a good deal of time and money in selecting them. The 1900 that were fed out by him the past season were mostly twos and threes of Hereford and Shorthorn breeding, secured in Oregon.

Hog Breeding Pointers.

[Written for Pacific Rural Press.]

From a dozen litters of purebred Berkshires, W. H. Waugh of Riverside raised 101 pigs to weaning age; while from eight litters sired by purebreds but out of common sows, only 60 pigs were raised to weaning age. This does not accord with the opinion commonly accepted without proof that common pigs are harder than purebreds. For on this farm of 10 acres, the capital invested in hog equipment, including buildings and feeding fixtures but not fences, wouldn't buy more than one or two of his beautiful September pigs. It certainly could not buy the pick of them; for Mr. Waugh does not reduce the quality of his breeding stock by selling the best.

Weanling Ration.—Mr. Waugh has adapted a ration found in one of the agricultural papers, to the feeds available in his section; and gives it systematically from weaning time for about eight weeks.

Weeks from Weaning	Pounds Ground	Pounds Milo	Pounds Wheat Bran	Pounds Tankage
One	1.6	2.0	0.2	0.20
Three	1.7	1.9	0.2	0.22
Five	1.8	1.8	0.3	0.25
Seven	1.9	1.7	0.3	0.27

It will be noticed that the carbohydrates (barley and milo) remained constant while the protein feeds gradually increased because the ration is for growing pigs. The original ration specified wheat middlings where ground milo has been substituted,

so additional protein had to be given. This is in the shape of skim milk from his own tuberculin-tested cows, so the pigs are fed three times per day on the theory that fewer feeds tend to intemperance in eating, and its resultant ills.

The buildings are the cheapest kind of open-sided sheds, the open sides being faced so the rains do not beat in. A dry place at night, and good balanced feed for the sows—that is the care these pigs get. Sows are kept in good but not fat condition by a ration of cocoanut meal, bran, and ground milo with pasture, while carrying pigs.

Breeding.—Mr. Waugh is staying close to Masterpiece and Rivals Champion blood, having noticed that the breeders who do not mix unlike strains often get the most uniform hogs, the best reputations, and the highest prices.

Three beautifully built but slightly undersized sows standing rather high on their legs are bred to the boar Wilts Masterpiece, which won first prize at Riverside Fair and lost the championship, according to Mr. Waugh, only because he was nearer breeding condition than show condition. This policy is carried out in the herd, which accounts for the apparently long legs of the sows mentioned above. Their undersize is due to the fact that they are to have

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Golden Goods, Jr., Herd Sire.

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Davis, California

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FEEDROLLED RICE

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Digestible Value:
64.6% Carbo-hydrates
1.7% Fat
4.7% Protein

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35 Choice Service Bulls
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All registered and tuberculin tested.

A Few Choice Berkshires of Either Sex for Sale.

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A fine lot of individuals. Ready for service on the range. Registered Berkshires, Holstein Bulls from high-testing cows.

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their third litters before they are two years old. Their first litters were each seven pigs, and their second litters each eight, of which all were raised. They were not bred thus early by Mr. Waugh, but by the man who had them previously. Mr. Waugh would not breed first under about a year old, for carrying and suckling pigs robs the finest kind of gilts of a chance to show their individual value.

Most of the shoats on the place are of great promise, showing well the results of their ancestry, and the entire herd is now cholera-immune. The herd sire is now six years old,

Value's Bachelor, sired by Star Value and out of Lady's Bachelor 5th.

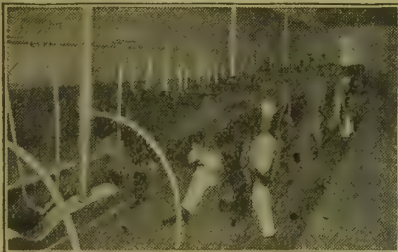
LUMPS ON BAG AND TEATS.

[Written for Pacific Rural Press by H. B. Wintringham, Petaluma.]

To the Editor: What is the cause of small lumps size of a pea up to the size of an egg? Form on the base of cows teats around the udder and between teats, when ripe form a white head from which matter is squeezed out. When large ones come on it is difficult to milk. My cows are tied in stall, well bedded at night and fed plain alfalfa and grass hay. L. Y. Grass Valley.

Apply to State Veterinarian, Sacramento, for free tuberculin test.

GIVE YOUR COWS and YOUR-SELF A SQUARE DEAL



The more energy your cows are obliged to spend fighting flies, combating disease, and striving for physical comfort, the less they have for milk production. They are sensitive animals, and can do their best only under the most favorable conditions.

Transfer your herd to comfortable, sanitary, Louden Steel Stalls and watch the milk supply jump! The cows will be healthier, more contented, more productive; they can't help it. That's one side—the cow's side. Then there's YOUR side.

The increased production is clear profit—often a good margin in itself.

The stalls simplify the care of the cows. It's but a few moments' work to open the stanchions or snap them shut, and once in place you know the cows are safe. No chance to get loose, to become entangled, or to trample one another.

Let us quote you prices for your complete equipment.

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Best plow rig. NO WHIFFLETREES—NO TRACES. Handiest farm harness.

Indispensable in the orchard with special fitness for all low down work. You can hitch closer to your load, plow and cultivate close to the row and save all the worry to man and team. No weight of whiffletrees for man to lug. Everything clear behind team. Use our outfit and save your trees. Highest endorsement of farmers and fruit growers.

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ABSORBINE, JR., the antiseptic liniment for mankind, reduces Painful, Swollen Veins, Wens, Strains, Bruises; stops pain and inflammation. Price \$1.00 per bottle; dealers or delivered. Will tell you more if you write. Liberal Trial Bottle for 10c in stamps. W. F. YOUNG, P.D.F., 86 Temple St., Springfield, Mass.

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CONFUSES HOG FEEDING WITH BREEDING.

To the Editor: I noticed the tale of "Razor" and "Chunk" in Jan. 20 issue of the Press. It certainly is very interesting, and just the kind of stuff I am looking for; as I am in the hog business myself. But I would like to ask you if you took into consideration the fact that "Chunk" possibly was a pen-raised pig, with expensive pedigreed ancestors. His maintenance, if he was a pen-raised pig and one year old, at three cents a day, would be about \$10 against his market value of \$23.75, which leaves \$13.75 profit.

"Razor," on the other hand, was an acorn or swamp-grass hog that never cost the raiser a cent until she was put in the pen to fatten, and 200 pounds of corn at \$1.50 per hundred, or \$3.00, would do this. This deducted from her market price, \$15.72, leaves \$12.72 profit; and you say she has possibly farrowed one or more litters, which leaves the owner six more razor-backed hogs running in the hills or swamps, to some time be sent to market.

As far as "Chunk" is concerned, his owner is out of the hog business with about \$1 the best of "Razor's" owner; but it doesn't look to me as if "Razor's" owner is liable to go out of the hog business very soon.

While it may seem to you that I have clinched into "Razor's" pen to stay, I will say that I took two of my best sows to a purebred boar this fall in hopes of getting better blood into my herd. I might add that I have 25 head of pigs shut up in a two-acre wild grass pasture that I am feeding pie- or cow-melons. They run outside until they are eight months old with no expense to me. I have been feeding them melons for about two months now, and by February I will start feeding corn and expect to put these hogs on the market at about 150 pounds at one year old at a cost of about \$5 per head. It only cost me \$3 a head to fatten them last year, but corn is higher this year. Send us some more of these tales. They are just what we fellows in this neck of the woods want.—C. J. E., Poway, San Diego county.

[The point we wished to bring out in the article referred to was the relative merits of a well-bred hog and one of nondescript breeding. Evidently you agree with us that under identically the same conditions "Chunk" has it all over "Razor" in the making of pork economically else you would not be going to the trouble of breeding to a purebred boar; and that, after all, is the only question involved. To credit "Razor" with a litter of pigs is manifestly unfair. She probably had brothers that did no better than "Chunk," while he doubtless had sisters with a far better average at farrowing time.—Eds.]

SHRINKAGE IN SHIPPING SHEEP.

In the old ewe feeding experiment which was conducted by the University of California during the early part of the winter some interesting data as to the shrinkage that results from shipping from farm to packer were brought out. The sheep were

shipped in two separate lots, the average weight of Lot 1 being 110.2 pounds at Davis, while Lot II weighed on the average 108.4 pounds. Both lots were on the cars 18 hours without feed or water, and weighed 104 pounds and 101 pounds respectively, off cars at South San Francisco, making a total average shrinkage of 6.2 pounds for Lot I

and 7.4 pounds for Lot II. As the sheep were sold for 6½ cents a pound f. o. b. San Francisco, the shrinkage charge was \$.481 per sheep for Lot II and \$.403 per ewe for Lot I.

Strict regularity in quantity and time of feeding the calf is most important.

Auction Sale of 25 Purebred DUROC-JERSEY HOGS

Of Highest Champion Strains, Such As

KING THE COL. BOAR (Brother to Crimson King; Grand Dam the Dam of Col. Gano).

KING THE COL. SOW (Bred to Critic B).

ILLUSTRATOR GILT (Bred to National Chief).

TAXPAYER SOW (With Litter by Orion Cherry King, Ja.).

PATHFINDER-PROUD COL. GILTS.

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SEVEN OF ABOVE PATHFINDERS Bred to Our KING THE COL. BOAR. Together with other Purebred Durocs, 32 grade Poland-China Sows (many bred, some with litters), over 400 Feeding Hogs, Complete Equipment of Farming Implements, Tools, Wagons, Live Stock, Hog Wire, Pipe, Lumber, Galvanized Tank, Gas Engine, etc.,

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For many years at widely separated show rings, under many different judges of varying type ideals, my Poland Chinas have been consistent prize-winners. My herd is large and I cull closely. The animals sent out as breeders are the very tops of a large number. I KNOW that my kind of Poland China is a profitable farmer's hog, for I send carloads of them to the packer every year—uniform in size, high in quality, quickly and economically matured and finished.

Young stock, \$30 Up.
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Aged Ram, First and Second. Yearling Ram, First. Ram Lamb, First, Second, and Third. Champion Ram, Yearling Ewe, Second. Ewe Lamb, Second and Third. Get of Sire, First. Pen of three Lambs, bred by Exhibitor, First and Fourth. Pen of four Rams, bred by Exhibitor, First and Fourth. Flock, any age, Second. Flock, any age, bred by Exhibitor, Second. Flock, one year old, First. Flock, one year old, bred by Exhibitor, First. Flock under one year, First. Flock under one year, bred by Exhibitor, First. Produce of Ewe, First. Second and Third. Premier Championship for Breeder. Premier Championship for Exhibitor. A total, including American Shropshire Specials, of 15 Firsts, 9 Seconds, and 6 Championships.

Purebred Registered Rams and Ewes.

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Live Stock and Dairy Notes.

[Livestock breeders all over the State are invited to send on postal cards, notes regarding their sales, State and County Fair intentions, new stock, etc.]

DAIRYING.

At an auction sale held in Monterey county last week grade cows sold for an average of a little over \$75 a head.

J. T. Raitt of Santa Ana doesn't build resaw silos until he can use the newly cut silage as a scaffold, and he saves lots of bother that way.

There were 51 cows in the Truckee-Carson Cow Testing Association of Nevada that made over 40 pounds of butterfat during January.

A total of \$4250 was secured for 40 heifers and a like number of mature cows at an auction in Stanislaus county last week. Hay brought \$11.50 to \$12.50 a ton.

Many small dairymen are asking Farm Adviser Lee of Alameda county for advice on tuberculin testing with the intention of testing their cows for their own protection.

Nine registered Holstein cows belonging to C. Darnell of Imperial county averaged 61.1 pounds butterfat during January, according to the figures of the Imperial County Cow Testing Association.

There were 18 cows in the Orland Cow Testing Association that made better than 45 pounds of fat during January. The highest production was made by a Jersey-Durham grade owned by Faltings & Zimmerman.

The Danish Creamery of Fresno reports that the average price paid for butterfat during January was 44 cents per pound, the highest average in 22 years. The creamery handled 3,725 pounds more fat this year than during the same month in 1916.

The Holstein cow Ormsby Methilde Pietertje, owned by the Bridgeford Co. in Contra Costa county, has recently made a seven-day record of 32 pounds butter. This company is doing considerable official and semi-official testing at the present time.

A. E. Slater of Contra Costa county reports the purchase of a young Holstein bull sired by Lakeside Model from the herd of the Cornell University. Mr. Slater has a small herd of purebred Holsteins which he purchased three years ago.

Messrs. Thatch, Ennis, and Williamson of Riverside plan to auction all of their purebred Berkshires and the latter two will devote the ranch to dairying. Their four strings of grade cows average a pound of fat per day, according to Mr. Ennis.

According to J. H. Guill of Chico, the California State Holstein Breeders' Association will hold its annual meeting during the Butte County Spring Exposition. The California Holstein Breeders and Sales Corporation will hold a bull sale during the same week.

According to Farm Adviser Conner of Stanislaus county, there are 225 silos in that county at the present time. He states that there was an increase of 100 per cent last year, and it is probable that the same percentage of increase will be maintained during 1917.

Bids have been received and contracts will be let shortly for the erection of the milk condensary at Galt. The plant will handle the milk from 2500 cows when running at full capacity. It is said that the owners will erect five other plants in the Sacramento Valley.

E. O. McClure of Santa Ana is enthusiastic about his change of location last fall from Stanislaus county. He is getting 62½ cents for the butterfat in the whole milk which he sells for local use, as against about 42 cents when he was in the north. He has 60 head of purebred Holsteins now.

There were 44 cows in the Stanislaus County Cow Testing Association that made 40 pounds of fat or better during January. A Holstein belonging to H. E. Cornwall was

high with 97.9 pounds fat and a Jersey belonging to J. M. Bomberger was second with 92.38 pounds fat.

In order to take full advantage of the national advertising campaign which has been undertaken by the National Dairy Council they have started a city selling campaign and are asking all dealers and dairymen to co-operate with them in its workings. Interested parties should write to National Dairy Council, 130 North Fifth Ave., Chicago, Ill.

SWINE.

R. H. Whitten writes that he has recently sold one of the herd boars from his herd of Poland Chinas in Tulare county to Langley Brookes of Los Angeles county. The boar is Long Smooth Wonder, sired by Fesenmeyer's A Wonder and a proven breeder.

Elwood Mead, Professor of Rural Institutions at the University of California, has sent out letters to ascertain the cause of low-priced hogs in California and high-priced pork products. Farm advisers and others in a position to find out these things are being consulted.

SHEEP.

Feed conditions in Solano and Yolo counties, while not normal, are sufficiently good to carry the sheep now there through the season according to late advices.

Mr. Brockman, whose weather forecasts have been given in this journal from time to time, advises us that feed conditions along the coast below Salinas are good because of heavier rainfall than elsewhere in the State.

Feed shortage is reported by sheep men generally in San Joaquin county, range grasses being exhausted and hay being scarce and high. Some are reported to be feeding hay and corn in order to carry their ewes over with little or no chance of saving the lamb crop.

While feed conditions vary greatly in Alameda county, some sections report such a shortage of feed that sheep owners are killing their lambs in order to carry their ewe bands through the winter. Some cattle are also reported to be dying in the dry districts of the county.

BEEF CATTLE.

Wm. Carruthers advises us that he has secured the services of Col. Carey M. Jones of Chicago to handle his sale of registered Shorthorns at Mayfield, May 2.

R. M. Dunlap writes from Omaha that he expects to buy one of the great young Shorthorn bulls of the Middle West for shipment to California.

David Stollery of the Paicines Ranch Co. advises us that he has recently sold three choice yearling Shorthorn heifers to the University of California. Two of them were sired by Bessie Consul, he by King's Consul out of Roan Bessie, and the other was sired by College Count 3rd, he sired by College Count and out of Peggy Wornill. Prof. Gordon H. True selected the stock for the University.

MISCELLANEOUS.

The Directors of the Butte County Spring Exposition Association have decided to hold their Third Annual Fair at Chico the week beginning May 21, 1917.

In order that they may market their livestock direct, 187 members of the Glenn County Farm Bureau have agreed to market all of their stock through a market man employed by the bureau.

It is said that Monrovia's milk supply is to be safeguarded by tuberculin test and bacteriological count of the milk to begin March 1. The

milk will then be graded "A," "B," or "C," according to the provisions of the new State law.

"Which is better for Imperial Valley—Livestock or Cotton?" is just now being warmly discussed by the farmers there. The livestock advocates are being led by S. E. Robinson and Judge E. R. Simon and the cotton growers by W. E. Wilsie and Marvin W. Conkling.

The Drovers' Telegram of Kansas City, in its annual review issue of January 1, says: "The highest level of livestock values ever attained in the realm of livestock prevailed in 1916. The average top price of cattle for the year was \$10.53, hogs \$10.00, and sheep \$9.82.

One of the most comprehensive reports of livestock receipts and prices ever issued on the Pacific Coast is just at hand from the Portland Union Stock Yards in the form of an annual report for the year 1916. The report shows an increase in receipts of California hogs at that market during 1916 over all previous years.

The monthly meeting of the Napa County Livestock Association was

Classified Advertisements

MISCELLANEOUS.

GROCERIES WHOLESALE—Our prices are the lowest and our quality the highest. Dollars saved on every order. Freight paid within 100 miles. Send for catalog. Freese and Company. Mail Order Grocers, 1264 Devisadero street, San Francisco.

EVERY SIZE WROUGHT IRON WATER PIPE and screw casing water pipe, guaranteed as good as new. Prices right. Send for catalog. We beat no one; everybody gets a Square Deal. Weissenau Pipe Works 160 Eleventh St., San Francisco.

FOR SALE—100 H. P. Westinghouse motor, vertical C. C. L. type, and 10-inch Byron Jackson vertical centrifugal pump, used 60 hours. Outfit complete \$2,000. For particulars address Frank Cox, Westley, Stanislaus Co., Cal.

SECOND HAND WATER PIPE AND SCREW CASING. New threads and couplings dipped in hot asphaltum. All guaranteed. Send us your inquiry. Sheeter Pipe Works, 306-8 Howard St., San Francisco.

AT LAST THE PERFECT SILO—THE STAR ROUND. No hoops. No bolts. No experiments. Any one can erect. Close prices. Address D. O. Lively, 215 Hobart Bldg., San Francisco.

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ASK FOR SNOW'S GRAFTING WAX—In use all over the State. If your grocer does not keep it, send to D. A. Snow, R. D., Box 548, San Jose, Cal.

TO REDUCE THE HIGH COST OF LIVING, send for our Wholesaler to Consumer Catalog. Smiths' Cash Store, 106 Clay St., San Francisco.

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FREE 1917 PLANTING GUIDE and Pure Seed Book. 96 pages handsomely illustrated in many colors. Describes latest, best varieties vegetables, flowers, field crops, fruits, shrubbery, etc. A dictionary on gardening! Flower lover's delight! Field crop guide! An orchardist's manual! Berry-grower's book! A postal gets it. Don't buy seeds until you read it. Galloway Bros. & Co., Pure Seed Specialists, Waterloo, Iowa.

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SPECIALLY SELECTED ARIZONA ALFALFA SEED—the best there is—at wholesale prices. Shipping warehouses at Modesto, Fresno, and in Arizona. You save at least \$2.00 per hundred by buying direct. Send your address for sample and price. Bomberger Seed Co., Modesto, Cal.

ALFALFA SEED—Common variety and Smooth Peruvian, good quality, excellent color, high germination test, grown in Arizona under ideal conditions. Do not buy until you have compared my samples and prices with seed others offer. E. F. Sanguinetti, Yuma, Arizona.

5000 MISSION OLIVE—4 to 5, clean, well rooted and stocky, 20c each, \$15 per 100. Fine stock Walnuts, Apricots on Myroblan, 4 to 6, clean, stocky, \$12 per 100. All leading varieties high grade nursery stock. A. B. Marshall's Nurseries, 5th and Broadway, Santa Ana, Cal.

CITRUS TREES—all leading varieties, Large line Lisbon and Villa Frances Lemon, and Washington Navel Orange Trees. First-class stock and clean. Special prices to dealers or to growers in carload lots. Randall Brothers' Nurseries, Whittier, Cal.

STRICTLY FANCY SEEDS—Alfalfa, Scarified Sweet Clover, Red Clover, Timothy, Rye Grass, etc. Free Bulletin—"Sweet Clover in the Northwest." Write for samples and prices. Ralph Waldo Elden, Central Point, Oregon.

FELIX GILLET STRAIN Walnuts grafted on California Black and Vrooman Franquette. Pears on Japan. Luscious, mountain-grown, with heavy fibrous roots. Write now. Good trees are scarce. Barren Hill Nursery, Nevada City, Cal.

A SELECT STOCK OF Delicious Rome Beauty and Jonathan Apples, Royal Apricot, Tuscan, J. H. Hale and Nov. Cling Peach, Russian Mulberry, Mission Olives. Cleaning-up prices. Threewit and Blom, Hemet, Cal.

WALNUT GRAFTING WOOD—Genuine Franquette. Same strain as Vrooman orchard was planted from. Willson's Wonder, grown by originator, W. C. Willson, Encinal Nurseries, Sunnyvale, Santa Clara Co., Cal.

ALFALFA SEED—New crop of choice home-grown seed; re-cleaned and guaranteed. Send for sample and price delivered to your nearest railway station. A. F. Scheidecker, Zamora, Yolo Co., Cal.

WALNUT TREES—Franquette, Mayette and Mammoth on Black Root; also Grafting Wood and Black Seedling Trees. Lowest prices. Mammoth Walnut Nurseries, Watsonville, Cal.

SEED CORN—White Dent. Largest growing variety. Heavy yielding. Fully acclimated. Selected ears or shelled to order. \$4.50 per cental. C. W. Jenkins, Live Oak.

OLIVE TREES—Mission, Manzanillo, Ascolano. Propagated by me from trees of known bearing qualities. Guaranteed. L. T. Schwabacher, Hemet, Cal.

MISSION OLIVE TREES—Raised from my own bearing trees. This is the only sure way to get what one wants. W. A. Hayne, Box 461, Marysville.

FRANQUETTE WALNUT TREES—Grafted on Black Root. Vigorous stock at lowest prices. Orden Bolton, Jr., Route 6, Santa Rosa, Cal.

FOR SALE—Gold Dollar and New Oregon Strawberry plants, \$3 per M. D. Bannister, P. O. Box 185, Oakdale, Cal.

FOR SALE—Black Walnut Seedlings, 4-6 ft., 1c. Mazzard Cherry Seedlings, 4-6 ft., 5c. C. R. McBride, Vacaville, Cal.

QUALITY TREES—Seedlings, 5c. Prunes, 10c. Walnuts, 30c. Cash Nurseries & Seed Store, Sebastopol, Cal.

RHUBARB ROOTS—Wagner's Giant Crimson, \$2 per hundred; 5c each. Currier Bulb Co., Seabright, Cal.

ALFALFA SEED—Why not sow the best? Write for prices to P. S. Wawter, Arbuckle, Cal.

FOR SALE—Walnut Trees. Magnolia Nurseries, Whittier, Cal.

WANTED.

WANTED—Young men and women to attend the Western Normal Courses—Normal and Academic. The Normal Course gives an adequate preparation for teaching, at a great saving in time and money. Academic course gives practical finish to education. Write for Bulletin "A." Western Normal, 524 E. Market St., Stockton, Cal.

GENTLEMAN—Thoroughly experienced in dairying, having passed the State Civil Service examination for dairyman; also having had many years' experience in poultry husbandry, wants responsible position. First-class references. Address: S. Boehm, 822 Wright St., Santa Rosa, Cal.

WANTED INFORMATION—A general plan showing best income from farming with \$10,000 cash capital. Either stock, crops, or anything. Will give \$10 for best practical answer. Give location where plan can be tried. Address: Painter, Box 5, Laguna Beach, Cal.

EXPERIENCED University graduate will manage farm, horticulture, stock, development or demonstration. Salary or commission. Box 460 Pacific Rural Press.

WANTED—Machinery and equipment for cannery—new or second-hand. R. G. Root, Rte. 3, Sacramento, Cal.

COUNTRY LANDS.

NO MONEY IN FRUIT—unless you have the right kind of an orchard. I have the right kind: 3¼ acres of Newtowns and Spitzemburgs which yielded 3,300 boxes the past two years. The average price received was about \$1.25, making over \$4,000 for the two crops. After deducting all spraying, irrigating, harvesting and marketing expenses, there was nearly \$3000 left from the proceeds of the two crops. The trees are getting bigger and better all the time and the market has averaged about the same—\$1.25—for the past eleven years. Fine place for cow and chickens, the ground being covered with clover and grasses, which grow luxuriantly. No cultivation needed. Big packing-house, fire-alarm residence, city water, phone, electric lights, etc. This is not a farm, but choice city income property, well located in the finest residence city on the coast—Ashland, Ore., which has a population of 5,000 and a great future as a health resort. Price, \$7,500; encumbrance, \$1,000. Reasons for selling are purely personal. Would consider trade for farm or acreage of similar value in low altitude. O. H. Barnhill, Ashland, Ore.

HUMBOLDT STOCK RANCHES—\$10.00: Safe Sheep Range of 5000 acres on State Highway. Neighborhood controlling coyotes; three hundred pounds. \$10.00; 5700 acres. Cattle Ranch near Railroad. Joins Forest Reserve. 500 acres tillable. Good soil. \$4000.00: Half cash. Worth it. Will Perry Ranch with tools, Alderpoint. Se owner. Bad health. Just returned to S. F. Sold Curless Ranch, Blocksburg. C. E. Robertson, 105 Montgomery St., S. F.

FOR SALE—948-acre stock ranch in Napa county. Price, \$17,000 net. All modern improvements. Living creek. 125 acres hay, grain and alfalfa land. Free range adjoining. 175 head of cattle can be purchased if desired. Liberal terms. Owner, Box 363, Napa, Cal.

FOR SALE—20 acres good alfalfa or fruit land. Splendid location, 2 miles from Modesto. Fair improvements, leveled, checked. Only \$5500. \$3000 can remain 5 years. J. H. Wilder, owner. Rt. 1, Box 129, Modesto, Cal.

FOR SALE—BARGAIN—Coacabella Valley land. Level, silt, no alkali. Easy water, best quality. Station three and half miles. Dates, earliest fruits and vegetables. Auto road. Owner, 1142 West 11th St., Riverside, Cal.

FOR SALE CHEAP—320 acres good level land in Klamath County, Oregon. For information, address owner, W. H. Johnson, 22 Maple Ave., Watsonville, Cal.

TO LEASE—170 acres level land. Fine for cows or hogs 50 acres of growing barley. Enquire of Miss V. E. Field, Ukiah, Cal.

FREE NEW BLUE BOOKLET—State, Government and Indian Lands. Bargains overlooked. Joseph Clark Sacramento.

WANTED TO HEAR from owner of good ranch for sale. Send cash price and description. D. F. Bush, Minneapolis, Minn.

640 ACRES MONTANA HOMESTEADS—new law. Circular free. Bureau 27, Boulder, Mont.

held at St. Helena February 3, a good attendance being reported. Prof. Gordon H. True was the principal speaker, his subject being "The International Livestock Exposition and the Showing Made There by California."

The new law enlarging the grazing area in the public domain to 640 acres has brought out a rush of applicants to the Los Angeles land office. So far, the proposed entries, which are suspended pending an investigation of the character of the land, are confined to that part of the Tehachapi region within the jurisdiction of the Los Angeles land office. A total of 65 applications, covering 21,729 acres in the northern part of the State, is also reported for the week from Sacramento.

More animals were slaughtered under Federal inspection during the last fiscal year than in any previous year since meat inspection was begun. The total for the 12 months reached 62,304,522 animals. Nearly 7½ billion pounds of meat and meat food products were prepared and processed under inspection. Certificates were issued for the export of over 510 million pounds of beef and beef products, more than 1,373,000,000 pounds of pork and pork products, and about 12,344,000 pounds of mutton, or a total of 1,895,863,936 pounds.

MANURE \$10 A LOAD.

H. H. Ford of Redlands has established a dairy herd at Highlands from which he hauls manure across the valley and up the southeastern hills for his orange grove. It cost \$10 per load of 200 cubic feet but is cheaper at that, according to W. N. Barlow who has charge of the oranges, than to ship it in. Four horses are required per load.

It is well to wet down the silage every time you pack it after the filling process. If you are able to squeeze water from a handful of the corn cut, the silage will need no water at filling.

LIVESTOCK DIRECTORY.

Rates in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

SWINE.

Poland Chinas.

SMITH'S POLAND-CHINAS—Sows and gilts bred to Joker, First Prize Boar at the Wisconsin State Fair, 1915. These sows and gilts, sired by Iowa Wonder, who is a son of A Wonder, the most celebrated Poland-China boar, living or dead. Litters from this mating are the best I have ever seen anywhere. Prices low quality considered. Will sell one or a carload. As a special inducement each purchaser will be given a year's subscription to the American Swineherd, the best swine paper published, and a copy of the Handbook on the Sow; also a copy of the Pig Feeders' Manual. Geo. A. Smith, Corcoran, Cal.

SEND FOR FREE CATALOG—Finest ever issued. Tells of the famous Whitten Ranch money-making strain of Big Type Poland-Chinas. Make greatest weight in shortest time at lowest cost topping market at 225 lbs. in 6 months. 600 head both sexes, all ages, reasonable prices. Satisfaction guaranteed. Ranch in Tulare County, but address owner, R. H. Whitten, 610-A Security Building, Los Angeles.

GRAND CHAMPION SUPERBA POLANDS—A few choice spring Superba boars ready for service. Sows bred to Superba for fall litters. Prices reasonably low. Rough's Greenfields, Arlington Station, Riverside, Cal.

REGISTERED POLAND-CHINA BOARS of serviceable age. A Wonder and Chief Picture breeding. Every animal guaranteed. Price \$25. Bar N. Ranch, E. A. Noyes & Son, Props., Sutter, Cal.

POLAND-CHINAS—Bred gilts, \$15; young boars, \$10 and \$15; bred sows, \$25. Weanlings, either sex, \$6. Registered and crated, purchaser to return crates. E. A. Hall, Watsonville, Cal.

REGISTERED POLAND CHINAS—Young boars ready for service. Weanling pigs, both sexes. Prices attractive for quick sales. J. H. Cook, Paradise, Cal.

LAKEVIEW STOCK FARM POLAND CHINAS are money-makers. Satisfaction or money refunded. Geo. V. Beckman & Sons, Lodi, Cal.

POLAND CHINAS—Big type, Shoats, either sex, or in unrelated pairs. O. L. Linn, Linview, Route A, Modesto, Cal.

POLAND-CHINAS—Big type combined with quality. Choice bred sows, gilts, boars. W. D. Treshitt, Box 82A, Hanford, Cal.

REGISTERED POLAND CHINA SWINE—Prize-winners. Finest stock in the State. 230 m. M. Bassett, Hanford, Cal.

POLAND-CHINAS—Stock for sale at all times. We please you or refund your money. W. A. Young, Lodi, Cal.

BIG-TYPE POLAND CHINAS—Stock from the best herds of the Middle West. N. Hauck, Alton, Humboldt Co., Cal.

REGISTERED POLAND-CHINAS and Duroc Jerseys. Cholera immune for life. T. H. Beckman, Lodi, Cal.

REGISTERED POLAND-CHINAS—Prolific, pabulous profitable porkers. Choice boars now ready for service, \$25 each. Weanlings, \$15. Dr. J. A. Crawshaw, Hanford, Cal.

POLAND-CHINAS—Large type. The Browning Stock Farm. W. H. Browning, Woodland, Cal.

DEACON RANCH POLAND CHINAS—Prize winners. Young stock reasonable. Box 27A, Davis, Cal.

KNOB HILL STOCK FARM—Registered Poland-China Swine. A. M. Henry, Farmington, Cal.

AMAWAGE FARMS—Poland-China hogs and Holstein cattle. G. H. Loughery, Visalia, Cal.

POLAND-CHINAS—Prize-winners. Money-makers. W. Bernstein, Hanford, Cal.

REAOAKS RANCH herd of registered Poland Chinas. W. J. Hanna, Gilroy, Cal.

REGISTERED POLAND-CHINA HOGS—J. A. Clark, R. 4, Lodi, Cal.

Berkshires.

GRAPEWILD FARM BERKSHIRES—World's Fair Grand Champion Grand Leader 2nd heads our herd, not only himself a champion, but the sire of Champions. At the 1916 California State Fair his daughters won first in all of the senior sow classes, including the Grand Champion Sow. At the 1916 Oregon State Fair a Grand Leader sow was Junior Champion. We are offering a number of choice boars of exceptional breeding and are also booking orders for Fall pigs. A. B. Humphrey, Escalon, San Joaquin Co., Cal.

REGISTERED BERKSHIRES—Progeny of Improver B. Young stock now ready for sale. Start your herd with breed and strain of established reputation for California conditions. Geo. G. Meckfessel, Berlin, Cal.

BERKSHIRES—I have one of the best herds on the Pacific Coast, including Grand Champion Sow, Reserve Grand Champion Boar under one year, Third Aged Boar, etc. Frank A. Brush, Santa Rosa, Cal.

CHOLERA IMMUNE BERKSHIRES—Fine sows bred to excellent boars for Spring farrow, \$50 to \$60 each. Splendid August and September boars and gilts, \$20 and \$25 each. W. H. Waugh, Riverside, Cal.

IMMUNIZED NORMANDY BERKSHIRES—Good type. Breeding stock, any age, for sale at all times. Cast iron guarantee. Arlington Smith, Visalia, Cal.

BERKSHIRES—Bred sows and weanling pigs. Write for prices and pedigrees before buying. Butte City Ranch, Box P, Butte City, Glenn Co., Cal.

REGISTERED BERKSHIRES—Special offering. Three service boars at prices to move them quick. Write us. Imperial Stock Farm, Morgan Hill, Cal.

SPECIAL—Six good service boars and a few sows in pig to Premier Leader due to farrow in October. Geo. M. York & Son, Berkshire breeders, Modesto, Cal.

FOR SALE—CHEAP—Registered Berkshire Boar, three years old, in fine condition. Address T. G. Hester, Morgan Hill, Cal.

ROSE CREST BERKSHIRES—Rivals Champion Best blood. Open and bred gilts. Service boars. F. L. Hall, Perris, Cal.

CARRUTHERS FARMS BERKSHIRES—Cholera immune. Second annual sale August 2, 1917. Mayfield, Cal.

30 REGISTERED BERKSHIRES—Boars and gilts for sale. J. H. Benedict, Lemoore, Kings county.

HOPLAND STOCK FARM—Registered Berkshires. Prices on application. Hopland, Cal.

REGISTERED BERKSHIRES—Young stock for sale. F. W. White, Elk Grove, Cal.

Duroc-Jerseys.

FIRST PRIZE HERD—Headed by Uneeda Wonder, 2nd prize boar at Nebraska and a winner at Omaha, 1916. Grandson of Crimson Wonder Again and H. A.'s Queen. Entire offering of Spring pigs will be from 1st or 2nd prize-winners. Inquiry solicited. Haden Smith, Box 84D, Woodland, Cal.

REGISTERED DUROC-JERSEYS—Service boars from prize-winning stock are money-makers. They grow faster. New England California Corporation, Ripon, Cal.

CROLEY'S BALANCED HOG FEED—the cheapest feed to fatten hogs. Write Geo. H. Croley Co., Inc., Live Stock Supplies, 631-637 Brannan St., San Francisco.

DUROC JERSEYS—Herd boars. E. N.'s Colonel and Tulare Boy. Sweepstakes winner at Fresno, 1915. Choice breeding stock. J. P. Walker, Visalia.

FOR SALE—2-year-old registered Duroc Boar, B. S.'s Crimson Wonder. A proven breeder. Satisfaction guaranteed. Brother & Ward, Chowchilla, Cal.

MUST SACRIFICE my two-year-old, registered Duroc-Jersey Boar and Sow. Both prize-winners. Write A. Melvin, Paradise, Butte Co., Cal.

RANCHO RUBIUS DUROCS—All sold except a few July and September gilts. Extra good. Write for prices. Elmer Lamb, Ceres, Cal.

REGISTERED DUROCS of guaranteed breeding. All ages. Weaned pigs, \$10. H. E. Boudier & Son, Napa.

HEAVY BONED DUROCS—A few service boars for sale. Ormondale Co., Route 1, Redwood City, Cal.

REGISTERED DUROCS—Crimson Wonder stock. Young stock, both sexes. L. D. Collins, Denair, Cal.

REGISTERED DUROC-JERSEY SWINE—Both sexes. Big-boned type. B. F. J. Kendall, Hardwick.

DUROCS—Defender Cantic B and Golden Model strain. The big type. Allen Thompson, Tulare.

WINTON DUROC-JERSEY FARM, Winton, Cal.—High-class pure-bred hogs both sexes, any age.

BIG TYPE DUROCS—Quick maturing. Easy keeping. Frederick M. Johnson, Napa, Cal.

RIVER BEND FARM—Registered Durocs are superior. Big Type. St. Helena, Cal.

DOS HERMANOS REGISTERED DUROCS—Duveneck & Pickersgill, Ukiah, Cal.

CURTIS DUROCS of either sex at all times. E. C. Curtis, Napa, Cal.

DUROCS—Big type, both sexes for sale. Ed. E. Johnson, Turlock, Cal.

REGISTERED DUROC-JERSEYS—S. S. Southworth, Napa.

Yorkshires.

LARGE YORKSHIRES—Choice spring boars, gilts, and weaned pigs from Champion sow P. P. I. E., or from breeding of champion boar and sow, Sacramento, 1916. If you see them grow you will like them. Riverina Farms, Paradise Road, Modesto, Cal.

LARGE YORKSHIRES—The ideal hog for the progressive farmer. Young stock for sale. A. L. Tubbs Co., Calistoga, Cal.

Chester Whites.

BILLIKEN HERD OF CHESTERS—The big prize-winners at the 1916 California State Fair. A real utility breed that makes money for its owners. A few young service boars left. Twenty young, open gilts that will be bred as may be desired by buyer. Write for the booklet Chester Whites. C. B. Cunningham, Mills, Cal.

REGISTERED IMPROVED CHESTER Whites—Two service boars, one brood sow. Write for price. G. H. DuBois, San Martin, Cal.

REGISTERED IMPROVED CHESTER Whites—Grizzly Bear Ranch, East Auburn, Cal.

Essex.

LITTLE BLACK ESSEX—Service boars and weanlings. Only herd in the State. Limited supply. Yolo Essex Herd, L. W. Millsap, Yolo, Cal.

Hampshires.

BELLA VISTA HAMPSHIRE SWINE—from prize-winning stock. J. W. Henderson, First National Berkeley.

DAIRY CATTLE.

Holsteins.

FOR SALE—From 1 to 100 extra fine, straight, well-marked, light colored, highly bred, registered Holstein heifers from 6 to 18 months old. They are rich in the blood of King of the Pontiacs, Pontiac Korndyke, Hengerveld De Kol, Rag Apple Korndyke 8th, King Segis and other most celebrated sires of the breed. Prices very reasonable. Write Geo. A. Smith, Corcoran, California.

25 HIGH-GRADE HOLSTEIN HEIFERS, sired by Creamer, Sir Waltham Pontiac 96169, coming with second calf by a high-class bull. All tuberculin tested. Also 35 yearling heifers, sired by same bull. Terms and prices, apply to W. H. Nichols, 2552 Haste St., Berkeley, Cal.

REGISTERED HOLSTEINS—Herd sire King Korndyke Hengerveld Ormsby 7th, 86623. His full sister as Junior 3-year-old made 32.04 lbs. butter in 7 days. The record of his dam and his sire's dam averaged 30.98. George Kounias, Modesto, Cal.

REGISTERED HOLSTEINS—Grandsons of King Segis and of world's record cow Creamelle Vale. Will build up the production and value of your herd. Write or call and see them. F. H. Stenzel, San Lorenzo, Cal.

WANTED—One registered Holstein bull and six registered Holstein cows or heifers with calf. Light colored preferred. State price and pedigree. Must be good and price right. Address H. H. Dunning, Marysville, Cal.

FOR SALE—Thoroughbred Holstein Bull, Sir Clifden Korndyke No. 106585, H. F. H. B., four years old, at a bargain. Inquire F. G. Anthony, Good Templar's Home for Orphans, Vallejo, Cal.

REGISTERED BULLS by King Korndyke Pontiac and out of A. R. O. cows. A splendid selection old enough for service. Write or call. J. H. Harlan, Woodland, Cal.

TULARE GUERNSEY AND HOLSTEIN Farm is offering young bulls of both breeds. Excellent breeding. Prices reasonable. W. J. Higdon, Tulare, Cal.

WE HAVE A CLIENT who is in the market for 10 grade Holstein cows. Must not be over 4 years old. The University Realty Co., Palo Alto, Cal.

THE MCLOUD RIVER LUMBER CO., McCloud, Cal.—High-class thoroughbred Holstein bulls for sale. Write for prices and pedigrees.

FOR SALE—Two registered Holstein cows with A. R. O. records. Write for particulars. J. W. Benoit, Route C, Modesto, Cal.

THE HENDERSON CO.—Breeders and importers. Registered Holsteins. Sacramento Bank Bldg., Sacramento.

BREEDERS OF REGISTERED HOLSTEIN cattle and Berkshire pigs. Whittier State School, Whittier, Cal.

REGISTERED HOLSTEINS—A. W. Morris & Sons, Corp., Importers and Breeders, Woodland, Cal.

CREAMCUP HERD—Registered Holsteins Pontiac bull calves. M. Holdridge, Modesto, Cal.

SUNNYSIDE HERD—Registered Holstein cattle. R. F. Guerin, R. 3, Box 58, Visalia.

REGISTERED HOLSTEIN CATTLE—E. E. Freeman, Route B, Modesto, Cal.

REGISTERED HOLSTEIN BULLS for sale. Sunnyside Ranch, Willits, Cal.

REGISTERED HOUSTON BULLS for sale. C. L. Morse, Route B, Modesto, Cal.

BREEDERS OF REGISTERED HOLSTEIN Cattle—McAlister & Sons, Chino, Cal.

REGISTERED HOLSTEIN BULLS, \$50 to \$150. Glorietta Stock Farm, Woodland, Cal.

REGISTERED HOLSTEIN BULLS from A. R. O. dams. B. F. Anderson, Modesto, Cal.

CHOICE HOLSTEIN bulls for sale. No females. Millbrae Dairy, Millbrae, Cal.

REGISTERED HOLSTEIN-FRIESIAN CATTLE—J. M. Campbell, Escalon, Cal.

BREEDER OF HOLSTEIN-FRIESIAN CATTLE—Dr. Ben Stetson, Napa, Cal.

A. R. O. HERD OF HOLSTEINS—Alex. Whaley, Tulare, Calif.

Jerseys.

JERSEY BULLS AND BULL CALVES—Sons and grandsons of 2 and 3-lbs. cows. None better. Cheap for quality. N. H. Locke, Lockeford, Cal.

VENADERA HERD OF JERSEYS offers calves from Register of Merit Cows with official yearly records. Write for list of bulls. Guy H. Miller, Route 1, Modesto, Cal.

BREEDER OF REGISTERED JERSEY Cattle—Duroc Swine. Young stock for sale. W. J. Hackett, Ceres, Cal.

JERSEY BULLS AND HEIFERS from Register of Merit Cows for sale. C. G. McFarland, R. 2, Tulare.

YOUNG REGISTERED JERSEY BULL Calves at reasonable prices. O. J. Ames, Oakdale.

JERSEY BULLS—Sons of Gertie's Lad and Gertie's Son's Victor. A. A. Jenkins, Tulare, Cal.

REGISTERED JERSEYS—Young bulls and bull calves. T. B. Purvine, Petaluma, Cal.

JERSEY BULLS from Register of Merit cows. C. D. Hayworth, Modesto, Cal.

Guernseys.

PACIFIC GUERNSEY HERD—Cattle selected from best imported and Advanced Register Stock. Now offering choice bulls. C. S. Rasmussen, Lodi, Cal.

EDGEWOOD FARM GUERNSEYS—First in the show ring and in official records. Few animals of either sex for sale. Edgewood Farm, Santee, Cal.

BELLA VISTA GUERNSEYS—Males from A. R. dams, \$100 up. J. W. Henderson, 1st National, Berkeley.

Ayrshires.

AYRSHIRES—Registered; all ages. E. B. McFarland, 412 Claus Spreckels Bldg., San Francisco.

AYRSHIRES—Registered—75 head. All ages. Young stock for sale. Le Baron Estate Co., Valley Ford, Cal.

BEEF CATTLE.

SHORTHORNS—Herd headed by grandson Whitehall Sultan. Calves sired by \$10,000 Prince Imperial for sale. One or a carload for sale. Get our prices before buying. Butte City Ranch, Box P, Butte City, Glenn Co., Cal.

SCOTCH AND SCOTCH-TOPPED SHORTHORNS—We have the largest herd of straight Scotch cows in California. Foundation stock of both sexes for sale; also a choice lot of range bulls. Barco Ranch, Hollister, Cal.

1500 HEAD HIGH GRADE HEREFORD cows. Some calves by their side. 300 head fine yearling steers, 200 mixed weaned calves. Sixty head exceptionally well-bred grade Hereford bulls. Ten head of very choice registered Hereford bulls ready for service. G. R. Patton, Porterville.

D. O. LIVELY STOCK FARM, INC., 216 Hobart Bldg., San Francisco, breeders of Hereford cattle. A few choice heifers for sale. We buy and sell livestock on commission. Farm at Mayfield, Cal.

REGISTERED YEARLING SHORTHORN Bulls—Heavy-boned, thick-meated Scotch and Scotch-topped breeding. Ormondale Co., Route 1, Redwood City, Cal.

BREEDERS OF REGISTERED SHORTHORNS—Milk strain. Choice young stock for sale. John Lynch Ranch, Box 321, Petaluma, Cal.

REGISTERED AND UNREGISTERED—Shorthorn bulls for sale. Paicines Ranch Co., 320 Sharon Bldg., San Francisco.

INNISFAIR DAIRY SHORTHORNS—Registered young bulls for sale. Alexander & Kellogg, Suisun, Cal.

HOPLAND STOCK FARM—Registered Shorthorns. Prices on application. Hopland, Cal.

REGISTERED HEREFORDS—H. H. Gable, Diamond G Ranch, Esparto, Cal.

SIMON NEWMAN CO., Breeders of Registered Herefords, Newman, Cal.

GEORGE WATTERSON—Breeder registered Herefords. Bishop, Cal.

SHORTHORNS—Carruthers Farm, Mayfield, Cal.

SHORTHORNS—Fair Oaks Ranch, Willits, Cal.

SHEEP AND GOATS.

F. A. MECHAM ESTATE, Petaluma, Cal.—Breeders and Importers of Shropshire, Exmouth and American Merinos, both sexes. Also Red Polled cattle. Take electric car at Petaluma or Santa Rosa for Live Oak Ranch.

SHROPSHIRE—Ewes and Ewe lambs for sale. International winner heads flock. Butte City Ranch, Box P, Butte City, Cal.

KAUPKE BROS., WOODLAND, CAL.—Breeders and Importers of Hampshire sheep.

DORSETS AND ROMNEYS—Dorset ram lambs for sale. John E. Marble, Los Angeles.

BISHOP BROS., SAN RAMON, CAL.—Breeders and Importers Shropshires.

CHAS. KIMBLE—Breeder and Importer of Rambouillets. Hanford, Cal.

HORSES AND MULES.

FINE YOUNG JACKS and Jennies for sale. Black with white points. Eligible to register. Geo. A. Mast, Madison, Yolo Co., Cal.

REGISTERED SHIRES—Black Hawk Stock Farm, Importers and Breeders, Easton & Ward, Proprietors, Burlingame, Cal.

MISCELLANEOUS.

SAN FRANCISCO LIVESTOCK EXPORT Co., Eugene R. Croley, Manager, solicits foreign orders for purebred registered and merit breeding animals and fowls. California has great diversity of climatic and other conditions that enable us to select animals that have been raised under conditions similar to those of the location for which they are intended. We should be informed regarding these conditions and be allowed ample time to make selections. Nearly all disappointments in buying afar are the result of insufficient information as to conditions or to lack of time for proper selection. Our plan and terms for "raising animals to order" to fit into peculiar foreign conditions is worth investigating. References: Dun or Bradstreet, or San Francisco banks. Office, 319 Underwood Building, 525 Market St., San Francisco.

LIVE STOCK INSURANCE—Registered live stock and farm work horses should be insured. The Hartford Company, strongest in the world, writing live stock. No trouble to answer questions. D. O. Lively, special representative, 215 Hobart Bldg., San Francisco.

CROLEY'S BALANCED DAIRY FEED—the cheap milk producer; and Croley's Calf Meal—the best California calf raiser. Geo. H. Croley Co., Inc., 631-637 Brannan St., San Francisco.

Adulteration of Feeding Stuffs Practiced.

Agitation favoring more stringent laws regarding the licensing and inspection of feeding stuffs has been more or less spasmodic in California, although the need for such has been recognized by most every one in the feed buying and selling business. Our attention has been drawn to the need of such a law in California because of the adulteration of cottonseed meal which is being practiced by many, if not all, of the cottonseed meal mills. One large beef cattle feeder states that he not only has to pay for a large percentage of hulls in the meal he is now buying but has to pay freight as well, which

materially increases the cost of feeding operations.

Evidently mills all over the country are making it a practice to adulterate with hulls, as advice from the Ohio Experimental Station says that a five-ton lot of cottonseed meal bought by the Experiment Station was guaranteed to contain 38.5 per cent protein, but one sample analyzed 27.3 per cent and a second only 17.4 per cent. It contained a large amount of finely ground hulls, which have a lower feeding value than oat straw or corn stover. A carload lot also contained less protein than guaranteed. Of ten brands

in the latest inspection bulletin of the Ohio State Board of Agriculture nine were below their guarantee.

Not only is this a costly practice for livestock feeders, but to cotton growers as well, for it is certain to reduce consumption of a cotton by-product whose more general use is profitable to grower and feeder. Because some few rice mills in California see fit to adulterate rice bran and middlings with hulls, a good deal the same condition exists with that by-product as with cottonseed meal, in spite of the fact that a good market is being made in this State for such feeds among farmers.

Apparently a law providing for certified analysis on each sack of feeding stuffs would be of benefit to the honest manufacturer as well as to livestock feeders.

SHOULD HE USE GRADE BULL?

To the Editor: I know it is against the ordinary rules of breeding practice to breed to grade bulls, but I have a grade Jersey cow, evidently part Durham, which has brought six heifer calves in succession. Three of these heifers and a granddaughter are all high producers and all the stock from this cow are very nearly alike in conformation, showing strong prepotency. The oldest of these heifers, that made two pounds of fat with her first calf, has just dropped a bull calf. Under the circumstances would it not be good dairy practice to save this bull and breed right back, both to the same family and to the rest of the herd? He is from a registered Jersey bull, as are all the others, and solid in color.

I have a good many heifers from different registered Jersey bulls but my experience has been that but a small proportion of them finally turn out to be high producers and it does not seem possible I would be going backward to save this bull.—F. D. K., Hughson.

[Answered by Prof. Gordon H. True, University Farm, Davis.]

Replying to your subscriber I would say very frankly that I would not follow the plan concerning which he asks advice. He evidently has in mind the fact that certain skilled breeders have built up their flocks and herds by the practice of close breeding. This, of course, cannot be denied, but where one man has been successful in his breeding operations so conducted, many have failed.

The fact that it is proposed to start on a system of inbreeding with grade animals makes the outcome seem more questionable. The bull calf that it is intended to use as a herd sire contains but one-fourth of the blood of the prepotent cow referred to. The heifers to which he would be bred contain but one-half of the blood of this cow, and with the well recognized tendency of the progeny of mixed breeding to develop characteristics of both sides of the cross, it seems to me that best results could scarcely be reasonably expected from the line of breeding that it is proposed to follow.

The fact that the dam of the heifer has made 2 pounds of butter per day should not recommend her especially when purebred sires from dams of high producers are available at comparatively low prices. The fact that your subscriber has had a comparatively small number of high-producing heifers from purebred bulls cannot be seriously taken as an argument against the use of a purebred sire as against a grade of even high-producing ancestry.

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It is steam-cooked and no trouble to prepare or use.

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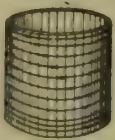


HOLSTEIN CATTLE

The scope of its labors and the numerous details involved in the administration of the affairs of the Holstein-Friesian Association are best comprehended by a consideration of the fact that, during the fiscal year ending April 30, 1916, \$158,994.50 was received by the secretary's office for the registration of pedigrees and for transfers. This volume of business required 46,760 entries in the cash books, and the issuance of 142,120 certificates, and this prodigious labor is demanded for the conduct of but one department of the greatest dairy cattle breeders' association in the world.

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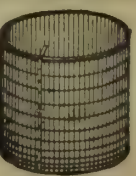
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A cow can not tell you when she is sick, but her milk yield is a very accurate indication of her condition. The fact is, thousands of cows are allowed to remain unprofitable or below their reasonable standard of productiveness through their owner's failure to act on the hint of the milk pail. Don't pass it off by simply calling her a "backward cow"—correct the trouble and reap the extra profit.

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VETERINARY QUERIES.

[Answered by Dr. H. B. Wintringham, Petaluma, Cal.]

[Subscribers wishing an immediate reply should send money order for \$1.00. No charge for questions answered through this department. Name and address of subscriber must accompany each query.]

COW WITH FITS.

To the Editor: I have a cow that has fits. I first noticed her having this trouble last fall when she was in a corn field trying to eat the tops of high stalks. She put her head up and turned around several times in a circle, finally falling to the ground. She has good pasture and all the alfalfa hay she wants. What will help her?—H. J., Terra Bella.

Give this cow 4 ounces epsom salts daily till the symptoms are relieved.

HORSE HAS SORE ON NOSE.

To the Editor: I have a horse whose nose muzzle wore off a patch of skin on the top of his nose about the size of a dime, last summer. There is a growth forming like a mushroom, about the size of a dollar, on top. What is the best method to get rid of it and heal it up?—J. F. T., Linden.

Paint this growth with a 2 per cent solution of chromic acid twice a day till it disappears.

HORSE WITH LICE.

To the Editor: I have a horse that is covered with lice. Have used kerosene and lard but without results. What else can I do?—G. K., Los Molinos.

Boil up a bar of soap in three quarts of water. When dissolved add one quart of coal oil and mix thoroughly. Apply this to the animal and rub in well.

HORSE NEEDS VETERINARIAN.

To the Editor: I have a young horse that seems to be troubled with coffin-joint lameness. When I take him out of the barn in the morning he seems to be lame in his feet, but after walking a little while he gets all right unless going up or down a hill on a pull, when he seems to flinch. Liniment seems to help, but only temporarily. What can I do for him?—G. D., Lompoc.

It is impossible to diagnose your case at this distance. Call in your veterinarian.

SIZE OF HERDS AFFECTS TUBERCULOSIS.

While the present dairy laws were severely criticised by some on the grounds that they would do irreparable damage to small dairymen because of the high percentage of reactors which would have to be discarded, the work of State Veterinarian Chas. Keane and his assistants for the months of October, November and December indicate that such criticism was ill advised. During that time 503 herds containing 10 or less cows were tested, only 15 per cent of these herds showing any indications of tuberculin animals. In larger herds, though, the per cent of herds containing reactors was larger, 25 per cent of the 198 herds of this size contained some reactors.

That these facts are appreciated by dairymen, and that many are having the State do their testing, which they would not be compelled to by law, is shown by the fact that applications for the testing of 75,000 to 100,000 cows are now on file with the State Veterinarian.

A good dairy herd is obtained by using a purebred sire. You can get calves 98 per cent purebred in six generations.

POOR MILK FLOW.

To the Editor: My cow freshened two or three days ago but doesn't give any milk to speak of. She was dried up two or three weeks before freshening. She eats well and doesn't seem to be sick. What can I do for her?—I. E., Acampo.

Give your cow the following: Philocarpine, 6 grains; strychnine, 3 grains. Dissolve this in water, divide into three doses, to be given six hours apart.

Silage, under normal conditions, is worth four dollars per ton.

GRANDSONS OF TILLY ALCARTRA

We now offer two young bulls for sale that are old enough for service. No. 1—Born Sept. 13, 1915.



Prince Alcartra Korndyke.
Best bred son of Tilly Alcartra.

No. 2—Born Sept. 3, 1915. His dam is a heavy producer and will be put on test next time she freshens. His full sister has a record of 18.56 lbs. butter in 7 days at age of 2 years 3 months and will be kept on test for the year.

The bulls are nicely marked, have perfect top lines, are good individuals and both sired by Prince Alcartra Korndyke, who now has 6 A. R. O daughters and more coming.

Write for prices, or better come and see them.

J. S. GIBSON CO., Box 97 Williams, Cal.

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No Other Six Resembles Hudson Super-Six

Don't Be Misled—It Is a Hudson Invention

Sixes have come into renewed popularity since the Super-Six won the top place. But the Super-Six invention—controlled by our patents—added 80 percent to the six-type efficiency. And that 80 percent is what gave it supremacy, when the V-types threatened to displace the Six.

Late in 1915, remember, the Six was a waning type. Even the Light Six, which Hudson gave first rank, had revealed some vital engineering limitations.

It had not solved the problem of motor vibration. It had not minimized friction and wear. Its endurance had proved disappointing.

Sixes at that time held hardly a single record. They were mostly held by Fours.

And leading engineers, including the Hudson, were seeking a remedy in Eights and Twelves. At that time the Six, for high-grade cars, seemed verging on displacement.

What Saved the Day

It was the Super-Six invention, remember, which then saved the day for the Six.

Hudson engineers discovered the shortcoming. By a basic invention they corrected the fault. They ended nearly all the vibration. They doubled the motor's endurance. Thus they created a motor which has since won all the worth-while records.

But that doesn't mean that the old-type Six is any better than it was.

'Twas the Super-Six That Won

The Super-Six, in a hundred tests, has out-performed all other motor types. It has not merely broken records. It has made new records which, a year ago, no man considered possible.

It broke the 24-hour endurance record by 52 per cent. It broke the transcontinental record twice in one round trip. A Super-Six touring

car went from San Francisco to New York and back in 10 days and 21 hours.

It beat twenty famous rivals up Pike's Peak. It broke all stock-car speed records, and all for quick acceleration.

Then, after 7,000 record-breaking miles, it showed itself in new condition. Not a part or bearing showed evidence of wear.

No other motor ever built has shown anywhere near such endurance.

All By Saving Waste

The Super-Six develops no more power than other like-size motors. It simply delivers more. It almost eliminates motor friction and wear by ending nearly all the vibration.

That vibration, which wasted power, was the great fault of the Six. It is that which led to the Eight and Twelve as a possible solution. Any motor in which that fault remains can't compare with the Super-Six.

A New Gasoline Saver

The Hudson Super-Six, in endurance and performance, stands foremost in the world. The new style bodies which we have created make the car look its supremacy. A new exclusive feature—a gasoline saver—gives it this year another advantage.

It now outsells any other front-rank car. It has 25,000 enthusiastic owners, who know that no rival can match them.

You can prove in one hour, at any Hudson showroom, that this car deserves its place. And that no other car, at any price, can be classed with it. Do that before the spring demand overwhelms us.



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HUDSON MOTOR CAR COMPANY, DETROIT, MICHIGAN

and poultry, and now all at once some man with a title steals my thunder and comes out as the "first" advocate in the State for bees, fruit and poultry. And I should not be a bit surprised if he influences more folks than I have because he is a "Professor." Well, that is all right; I'm not going to quit because he just commenced, so in this paper I am going to say once more: Get a few hives of bees, and put as many chickens as you can well care for under the fruit trees. Chicken money is the nimble sixpence; it comes in often and it helps the trees to produce better and bigger fruit.

The chicken business is not a get-rich-quick scheme, neither is it a lazy man's job; however, as a legitimate means of adding to your yearly income on the farm there is no better or safer way than by having a flock of good laying hens. If you get chicks within the next three months, next winter they will be bringing you back the money you put into the investment. You don't have to wait several years for returns, for as soon as the pullets mature they commence to pay back their own debt. Now is the time to think this over.

PREFERS BLUE OINTMENT FOR LICE.

To the Editor: I notice "C. F. C." Fresno, has an inquiry in your paper of Jan. 27 as to how to get rid of lice on his poultry. I have lately tried blue ointment and found it a sure remedy, much easier and pleasanter to apply than the insect powder. Mix the ointment with 50 to 60 per cent of vaseline. I think lard might do. Take a little on the end of the finger the size of a pea or less and rub in well below the vent, and a little under each wing, then repeat in about two weeks. I could not find one when I made the second application, but I found two or three of the hens were slightly blistered. I suppose I put on a little more than I intended. I had previously dusted them with insect powder, getting a large per cent of it in my eyes, nose and clothing, and the first time I examined them afterwards they were badly infested with lice.

Devore. T. S. Johnson.

"CHINESE DUCKS."

To the Editor: Who has a breed of ducks that are mostly black and have a comb somewhat like a turkey? They are called "Chinese ducks." How can I distinguish geese from ganders?—R. P., Richvale.

[Answered by Geo. H. Croley.]

We know of no Chinese ducks such as our correspondent describes. The colored Muscovy duck has peculiar formations on the head and face that are red and somewhat similar to the color of a turkey gobbler's wattles. The simplest method of distinguishing ganders from geese is to note the difference in the voice, particularly when they are simply "talking." The voice of the male is shrill and fine, while that of the female is coarser and harsh. It is more difficult to distinguish them when they are calling in a loud tone.

Arlington poultrymen will contract for the transportation of the product of their poultry farms from Arlington to the Los Angeles market by motor truck.

RICE FOR PIGEONS.

To the Editor: Is rice good for pigeon feed? If so, how can I teach them to eat it? I have tried it raw, soaked and boiled and they won't eat it.—P. A., Lodi.

[Answered by Geo. H. Croley.]

Pigeons do not like rice, but we have known it to be used successfully when fed in small quantities mixed with a variety of other grains. We refer now to the hulled rice such as is used for table purposes. Pigeons do not like broken rice grains nor any other broken grain feed; they are partial to whole grain. A large amount of rice would be very likely to injure the digestion for reason that it is too starchy. They will not eat paddy or unhulled rice unless nearly starved.



Raise High Priced Wheat on Fertile Canadian Soil

Canada extends to you a hearty invitation to settle on her FREE Homestead lands of 160 acres each or secure some of the low priced lands in Manitoba, Saskatchewan and Alberta. This year wheat is higher but Canadian land just as cheap, so the opportunity is more attractive than ever. Canada wants you to help feed the world by tilling some of her fertile soil—land similar to that which during many years has averaged 20 to 45 bushels of wheat to the acre. Think of the money you can make with wheat around \$2 a bushel and land so easy to get. Wonderful yields also of Oats, Barley and Flax. Mixed farming in Western Canada is as profitable an industry as grain growing.

The Government this year is asking farmers to put increased acreage into grain. Military service is not compulsory in Canada but there is a great demand for farm labor to replace the many young men who have volunteered for service. The climate is healthful and agreeable, railway facilities excellent, good schools and churches convenient. Write for literature as to reduced railway rates to Supt. of Immigration, Ottawa, Can., or to

GILBERT ROCHE, Canadian Government Exhibit, San Diego, Cal.
Canadian Government Agent.

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Fair Treatment

Bring Back Any GOODRICH BLACK SAFETY TREAD TIRES That Owe You —Anything—

FROM Maine to California, and on around the world, The B. F. Goodrich Company sends forth this all-including invitation:

Bring back any Goodrich tires you feel have failed to give you right service.

Goodrich will at once make good all their shortcomings—generously and gladly.

There are no strings to this offer—no conditions—no catch words.

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For a Goodrich Black Safety Tread Tire carries with it in the market an unwritten SUPER-GUARANTEE that it is the best fabric tire, the largest, oldest, and most resourceful rubber manufacturer can produce.

The very name of Goodrich pledges it to the best service a fabric tire can give—style, safety, comfort, durability, freedom from tire trouble, and mileage.

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30 x 3	\$11.35	33 x 4	23.70
30 x 3 1/2	14.70	34 x 4	24.00
31 x 3 1/2	15.35	34 x 4 1/2	31.20
32 x 3 1/2	17.70	35 x 4 1/2	32.55
32 x 4	23.05	37 x 5	43.10

"BEST IN THE LONG RUN"

Mrs. Best's Letter.

Spring Garments.

My Dear Friends: The separate coat gives promise of being just as good style this spring as it has been all winter. The new spring garments are in lighter colors, bright green and black and white checks being very good. They nearly all have large cuffs and collars and many times the collar is a contrasting color to the coat itself. One of a taupe color had a cardinal collar and stitching of cardinal around the deep cuffs and big pockets, while another of soft green had a white collar with stitching and big buttons of white. Both of these had plain waists with a skirt gathered on, and partly belted.

Tailored Suits.

The very newest thing in tailored suits, so I am told, is the plain skirt and unbelted coat. This is a real blow to many, for the belted models have been wonderfully popular and becoming to most figures.

The advance rumor that skirts are growing narrower and longer seems to be true—the tailored suit either has a narrower skirt or, if pleated, the pleats are pressed down to give the straight, slim line so much desired.

In the one-piece dresses, occasionally there is some fullness on the hips, produced by the cartridge pleats, which are still worn, but the straight, slim line rather leads in popularity and the prevailing materials, soft satin, georgette, chiffon and crepe de chine as well as the soft finish wools fall into clinging lines very gracefully.

New Cloths for Dresses.

Jersey cloth is having a great run of popularity for spring suits and the white Coolie Silk suits are very fetching. In addition one sees serge, gabardine, covert and homespun that will be very serviceable and suitable for all kinds of wear.

There are more voile waists as spring draws near and they seem to be developed in a more trimmed style than the crepe de chine. Many of them have lace insertion and lace-trimmed collars and others have plaited frills edged with lace or a scalloped edge.

The newest note in the dresses are the sleeves—there are many smart types of sleeve shown and it is almost the only change in the chemise dress of last season.

Hand embroidery is shown on the new afternoon gowns and the beaded effects are still good style.

Rosabella Best.

RURAL CHURCHES.

Churches seem to be awake to the fact that a country church should be a power in the community in other ways than merely for church service.

The Department of Rural Work in one of the denominational churches is commissioned to make surveys in rural church fields to ascertain their resources and needs, to apportion such funds as may be appropriated for this purpose, to promote the study of rural sociology among the ministers and to co-operate with the allies of the church in the task of improving the social, economic, educational and religious life of the rural sections.

THE HOME CIRCLE

IN FEBRUARY.

Oh, they say it's growing colder every day,
That the winter's growing bolder every day;
Since the woodchuck's gone to sleep in his cavern dark and deep,
There'll be six weeks more of snowing,
Of freezing and of blowing,
Every day.

But the day's a little longer every day,
And the sun's a little stronger every day;

If we're patient for a while,
We shall see the summer smile,
And the buds will soon be showing,
For they're growing, growing, growing,
Every day.

And the birds will soon be singing every day,
Northward now they'll soon be winging every day;

Though the frost is in the air,
There's a feeling everywhere
That the skies are growing clearer,
And the springtime's drawing nearer,
Every day.

—Annie Johnson Flint, in St. Nicholas.

HOW TO CURE HAMS.

After the hogs have been killed and the meat is thoroughly cooled, the fresh surface is sprinkled with fine saltpeter until the surface is white. About three or four pounds of saltpeter are used on 1,000 pounds of hams. Fine salt is then rubbed over the surface and the hams are packed in bulk not deeper than three feet and allowed to remain for at least three days. The bulk is then broken and the hams resalted and repacked. Each ham should remain in bulk at least a day for each pound of weight. The hams are then hung up and slowly smoked for thirty to forty days with hickory or red oak bark. When the smoking is finished, they should be peppered and hung in canvas bags to guard against vermin. Hams cured as directed improve with age and are considered perfect when about one year old.

A MINIATURE GARDEN.

To make a miniature Japanese garden at home, take a long baking pan and paint it white. Then fill with soft white sand and place two horseradish roots firmly enough in the sand that they will not roll. build a little island of rocks in the center, filling the crevices with sand, and sprinkle with canary seed. The horseradish will produce a lovely green foliage and the canary seed also, giving an appearance of a green island in the midst of a sandy lake. If desired more elaborate, add the figures and bridges that can be purchased at a Japanese store.

WHAT TO DO WITH THE HANDS.

Few women know what to do with their hands in idle moments. There can be no rules laid down from which to learn how to hold and use the hands gracefully, except that you must relax and forget them entirely.

To put grace into the movements of the hands, there must be no nervous, jerky, gestures nor fidgeting with purse or other articles. Avoid

spreading out the hands upon the knees or having the arms folded tightly at the waistline and above all, do not place the hands upon the hips.

When standing, if the arms are relaxed, the hands should take care of themselves, and when sitting, one hand resting palm upward inside the palm of the other is a graceful position.

ARTISTIC DRAPERIES.

One of the things necessary to consider in the discussion of draperies is the weaving together of color and fabric to make a balanced tone of color.

For example, a room with a two-toned paper and a mulberry rug should have an ecru curtain next the windows with over draperies of mulberry.

If the walls are a cool gray, crimson would be better than the mulberry, while if the walls and woodwork were white, hangings and rugs of blue would produce a charming effect.

Dead white curtains are apt to not be harmonious as the contrast is too sharp. Either ecru or cream are better. In houses where the over draperies are lined, roller shades can be dispensed with and the draperies can be drawn together to temper the light or give privacy. Cretonne curtains retain their color better if lined, and an unbleached muslin answers very well for that purpose.

ROAST HAMBURG STEAK.

To 1½ lbs. Hamburg steak add 2 slices fat salt pork, finely chopped, ½ cup bread crumbs, one egg, ¼ teaspoon salt. Shape in loaf, dredge with flour, and over top put 7 strips fat salt pork. Roast 45 minutes, basting often, first with ¼ cup water and then with fat in pan. To liquid in pan add water to make 1 cup. Brown 1½ tablespoons butter, add 2 tablespoons flour and the cup of liquid.

BAKED CAULIFLOWER.

One medium sized cauliflower, 2 cups white sauce, 1 cup grated cheese, 1-3 cup melted butter, 1 cup cracker crumbs, salt, pepper, paprika to taste. Boil the cauliflower in salted water until tender. When done, drain and place head upward in a buttered casserole. Mix the cheese with the white sauce and pour over the cauliflower. Stir the cupful of fine cracker crumbs into the melted butter and sprinkle over the top. Bake until browned.

SQUASH PUDDING.

Mix ½ cup sugar, 1¼ teaspoons salt and 1 teaspoon cinnamon and add 2¼ cups steamed and strained squash, the yolks of 2 eggs slightly beaten and 2¼ cups hot milk; then add whites of 2 eggs, beaten until stiff. Turn into a buttered pudding dish and bake in a moderate oven until firm. Cool before serving.

COMPARATIVE FOOD VALUES.

One and one-half quarts milk equals a 1 pound steak; 1 quart milk equals 7 pounds of cabbage, or 14 eggs, or 3½ lbs. of potatoes.

Floral Department.

[By Geo. N. Tyler.]

Chrysanthemum Growing.

If you are going to grow any single and pompon chrysanthemums this year, enrich a sunny piece of ground and get divisions from old plants. After these are established pinch them out so they will branch, and keep on pinching until July—do not do any pinching after that date. Get and plant them as soon as possible. Plant eighteen inches apart, for by planting early they make large bushy plants with from twenty to fifty blooming shoots. They require staking. One center stake is enough, but do not require any disbudding, and they keep in bloom for six weeks and give a grand lot of flowers for the house or decorative purposes—when flowers are scarce. They come in all colors, white, light pink, dark pink, violet, bronze, two or three shades of yellow, etc.

Plant Violets.

If you want any violets for next October, now is the time to start your beds. Give rich soil in a sunny location, and if the soil is not very rich use a liberal coating of cow manure, half rotted. Take four or five of the runners and trim off the leaves, leaving a stem five or six inches long, and plant the four or five runners, so that the crowns are just above the surface of the soil. They should be planted two feet apart both ways. The object of four or five runners is to insure a large crown, or plant for next winter's bloom. They do not require much water through the year, but all runners should be picked off twice. They should be cultivated through the hot weather, and in August and September should be watered and cultivated, and as soon as cool weather comes in October they start blooming, and bloom right through the winter. This is the way the market gardeners grow them for the San Francisco markets and for shipping to Eastern States.

Sweet Peas—Pansies.

Sweet peas should have a support to run up on. I use chicken wire. The sooner you get in your supports the earlier they will bloom.

Pansies, to get large flowers, should be mulched now with about three-quarters of an inch of half-rotted cow manure, and later on mild applications of liquid manure once a week will insure three-inch pansies, provided you have plants from a fine strain of seed.

ASTER SEED

NURSERYMEN—SEEDMEN—EVERYBODY!
Crego's Lavender and White, Giant Branching Lavender and Pink, Rose King and Violet King. Fine Mixed, Separate Colors, 5c pkgs.; ¼ oz. 50c; 1 oz. 75c; pound, \$6.00. Mixed, 50c an oz.; pound, \$5.00.

Foster's Flower Seed Farm,
1408 Locust St., Pasadena, Cal.

Specialists in Specimen Stock for Landscape Work.

Hardy Rhododendrons, Azaleas, Boxwoods, Hollies and a complete line of Coniferous Evergreens.
WRITE FOR PRICES.

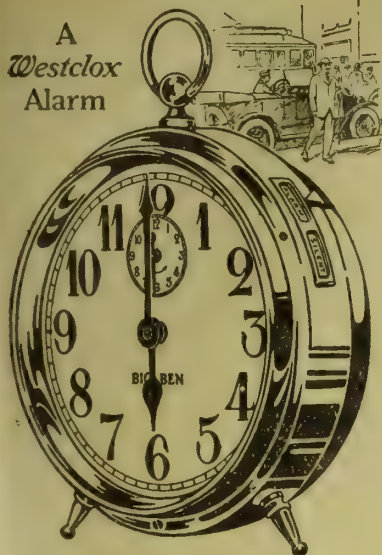
Cottage Gardens Nurseries, Inc.,
SUNOL, CALIFORNIA

Seventy varieties of ferns in three and four inch pots now ready—including maiden hair—25 cts. each; \$2.50 per doz. by express. Seven varieties of carnations, cut flower varieties; rooted cuttings by parcel post, 75 cts per doz for a short time. 40 varieties of pelargoniums in 2½ in. pots, ready for four inch; by express, ten cts. each; \$1.00 per doz. My selection. My catalogue will be ready by February 1st.

BROOKDALE NURSERY,
Geo. N. Tyler, Los Gatos, Cal.

Big Ben

A
Westclox
Alarm



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WARD-AALDERS SANITARIUM
GENERAL OFFICES:
500 Central Bank Bldg., Oakland.

Good Health.

[By H. E. Pastor, M. D.]

Goat's Milk.

A valued correspondent of the Rural Press, resident in Southern California, directs the attention of the writer of this column to the subject of goat's milk, and asks for an expression of opinion as to its value as compared with cow's milk. The correspondent in question becomes enthusiastic in extolling its virtues, an enthusiasm we cannot bring ourselves to share. It is quite true that some people speak well of the milk of the goat, and it is also true that there are many infants, and mature people as well, whose personal idiosyncrasy enables them to tolerate and even thrive on it; but we believe the preponderance of medical opinion favors the milk of the cow as against that of the goat. In the first place, goat's milk is too rich to be easily digested, more particularly by infants. In the second place, its odor is strong, and, to the uninitiated, its taste disagreeable, though it is claimed that the more recently imported Anglo-Nubian goat yields a milk free from this objection. Thirdly, while we are not familiar with the chemical and physical constitution of the ingredients of the goat's milk, we know that it has some peculiarity that very commonly causes vomiting and diarrhoea in those who drink it. Personally, we cannot drink it; we gag at the effort.

If goat's milk possessed the wonderful properties that some of its zealous advocates claim for it, it is rather strange that it has not come into wider public favor. Still, we are not disposed to condemn goat's milk outright, or indeed at all. It has its place in the dietetic economy of many peoples, and a most useful place. The goat is essentially the poor man's cow. It is not, however, in our opinion, a satisfactory substitute for pure, prime cow's milk, which is superior in palatability and digestibility.

Animals as Conveyors of Disease.

A noteworthy paper was read not long since by Prof. D. J. Davis, of the College of Medicine of the University of Illinois, on the diseases that may be communicated by animals and insects to man, the manner of their transmission, and some preventive measures. An abbreviated list of the diseases mentioned and the animals instrumental in their spread may interest readers of the Rural Press.

Dog—Rabies, foot and mouth disease, tapeworms, mange, fleas and ticks, ringworm.

Cow—Tuberculosis, anthrax, cowpox, tetanus (through vaccine), foot and mouth disease, septic sore throat, rabies, pus infection, milk sickness.

Horse—Glanders, rabies, tetanus.

Swine—Trichiniasis, tuberculosis, anthrax, tapeworm.

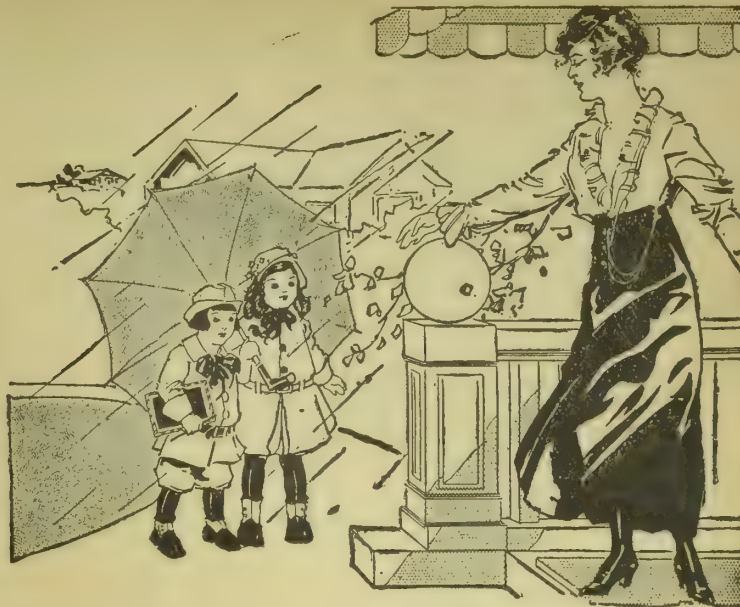
Sheep—Anthrax, tuberculosis.

Goats—Malta fever, tuberculosis.

Cat—Rabies, ringworm. Suspected: diphtheria, infantile, paralysis, scarlet fever, malaria, pneumonia.

Rats—Bubonic plague (through fleas), trichiniasis (through hog to man).

Ground squirrels—Bubonic plague.



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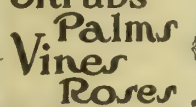


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Mosquitoes—Yellow fever, malaria, dengue (breakbone) fever.

Flies—Typhoid fever, infantile paralysis, and other infections carried mechanically.

It is hard to lay down any set rule or rules for the prevention of the animal-human diseases. As Prof. Davis says, much depends on the personal hygiene of the individual, care in matters concerning diet, the care of clothing, and the sanitary care of animals.

Irish potatoes and most other vegetables and fruits tend to make the body tissues and fluids alkaline so correcting the tendency of meats, eggs, fish, and similar foods to create acid conditions. The body performs its work best when it is neutral or slightly alkaline.



COFFEE

3 lbs. for \$1.00.

I sell from 20,000 to 30,000 lbs. of coffee every month. By buying direct from the growers, doing my own roasting and selling direct to the consumer, I do away with two middlemen's profits. That's why I can give you so much for your dollar.

Long's Best Coffee has a flavor and aroma that will win your instant approval. It is a blend of four mountain grown coffees, and hence high-flavored.

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LONG, the Coffee Man

LONG'S MARKET
11th and Washington Sts.
Oakland, Calif.

SAN FRANCISCO.

San Francisco, Feb. 14, 1917.

WHEAT.

Trade in wheat has been practically at a standstill during the past week. California Club continues as the most popular offering, but as yet no change in the top price of \$2.70 per cental has been reported.

Sonora wheat \$2.75@2.80
Northern club 2.70@2.75
Calif. club, ctl. 2.65@2.70
Northern Bluestem None offered
Northern Red None offered

BARLEY.

With the exception of feed barley, which is being shipped in large quantities to interior sections, this grain has been in little demand during the past week.

Seed, ctl. \$ 2.50
Shipping, ctl. 2.35@2.40
Brewing, ctl. Nominal
Choice feed, ctl. 2.25@2.30

OATS.

The only change recorded in quotations on oats has been a twenty-cent advance on Texas red seed stock. The announcement that this variety was to be had here led to such a buying movement that the price range was forced upward.

Red feed \$1.85@2.00
White 2.15@2.25
Red seed (Texas) 3.00@3.10

CORN.

A few of the lots of Eastern corn which were tied up in the Eastern snow blockade are beginning to arrive. The presence of a good shipping call led to a five-cent advance on sacked California corn.

[First-hand prices on strictly first-class grain, San Francisco.]

Eastern Yellow, ctl., bulk \$2.15@2.22½
California, sacked 2.25@2.30
Milo Maize 2.00@2.20
Egyptian 2.25@2.50

BEANS.

Holdings of beans in first hands are now so depleted that the quoting of uncleaned stock on the wharf is no longer justified. It is estimated that not more than one-eighth of one per cent of last year's production remains in the farmer's hands, and the bulk of this small total is being held for seed purposes. What is said to be the last shipment of Lady Washingtons from Humboldt reached here this week and met with a ready sale at \$10.00. The quotations given below are for choice re-cleaned stock, f. o. b. San Francisco. Limas are in heavy call and have advanced nearly 75 cents per cental. There is also a heavy demand for southern small whites and large whites. Southern asking prices on limas today were \$9.50 per cental with local sales ranging between \$9.25@9.50.

[Recleaned, f. o. b. San Francisco.]

Bayos, per ctl. \$ 7.40@7.50
Blackeyes 5.25@5.35
Cranberry beans 8.25@8.40
Horse beans 4.25@4.50
Small Whites (south) 9.50@11.50
Large Whites 10.75@11.00
Pinks 7.00@7.75
Limas (south, re-cleaned) 9.25@9.50
Red Kidney 11.50@12.00
Mexican Reds 7.50@8.00
Tepary beans 8.00@8.50

HAY.

Increased receipts of hay for the past week not only failed to depress quotations asked here but sold out in good style at higher prices, as the result of a heavier demand. Arrivals were nearly 450 tons greater than for the preceding week. No relief in the form of rain came to halt the heavy call for hay from most of the interior sections. Reports from Sonoma county say that some green feed will be available within a month or so, but the Sacramento districts furnish just as pessimistic reports as were heard last month. Outside of the usual export trade, the city trade in hay has been very light. The few farmers who still have any alfalfa hay on hand refuse to name a price at which they will sell, because they may need it for their own use if dry weather continues.

[Price per ton, carload lots, San Francisco.]

Wheat, No. 1 \$19.00@20.50
No. 2 17.00@19.30
Tame oats 16.00@21.00
Wild oats 16.00@19.00
Barley 16.00@19.00
Alfalfa 15.00@18.00
Stock hay 15.00@16.00
Straw, per bale 8.00@1.00

FEEDSTUFFS.

Conditions in the country continue to rule in favor of higher prices on feedstuffs, especially for the more popular stock foods. Alfalfa meal is being held at \$1 per ton in excess of last week's figure.

[Per ton, San Francisco.]

Root Pulp, per ton \$20.00@31.00
Alfalfa meal, per ton 23.00@24.00
Bran, per ton 30.00@31.00
Oll Cake 40.00@41.50
Cocoanut cake or meal 31.00@32.00
Cracked corn 47.00@48.00
Middlings 37.00@40.00
Rolled Barley 45.00@46.00
Tankage 47.00@48.00
Rolled oats 45.00@46.00
Rice middlings 31.00@33.00

POTATOES, ONIONS, ETC.

While easier prices on onions are quoted in Seattle as the result of the putting on sale there at \$6.50@7.50 per cental of Japanese onions, the local trade seems to have discounted the chance that this imported stock will be offered on this market and prices continue to advance. Fancy onions were selling on the street here today at \$9.50@10.25, and ice house goods were being held for \$11. Receipts have dropped off to practically nothing, the

THE MARKET REPORTS

Figures Given Are Independent and Reliable.
Prices Quoted As Paid to Producers.

average for past week being barely fifty sacks per day. Potatoes are also one of the produce items that continue to gain in price and Delta Burbanks are now commanding as high as \$3.75 per cental. A few small lots of Salinas were put up for sale, but not enough to establish a quotation. Celery prices have declined under increased receipts, with lettuce holding firm. Tomatoes have been of noticeably poor quality and dragged at current prices, while a good shipping call figured in putting up the quotation on rhubarb. Lettuce, crate \$1.25@1.75
Celery, Delta, crate 1.50@3.50
do, Southern, crate 2.50@4.00
Tomatoes, crate75@1.25
Rhubarb, box 1.50@1.90
Potatoes, ctl., Delta 3.50@3.75
Salinas Cleaned up
Oregon 3.00@3.90
Onions 9.50@10.25
Garlic, lb. 3@4½c

POULTRY.

Higher prices on poultry in the Eastern markets have tended to discourage shipments to this city and generally firmer prices have been the rule here. But two cars of Eastern were received last week and one is scheduled for this week, leaving the market pretty much to local offerings. Young stock has been commanding better figures. Turkeys are meeting with a somewhat heavier call and large fancy dressed fowls have been commanding as high as 29 cents. Squabs are scarce.

Turkeys, live, lb. 23@24c
do, dressed, large, lb. 26@29c
Turkeys, live, lb. 24@25c
Young, large 25c
Broilers, 18 lbs to doz and less 29@32c
do, over 18 lbs. to doz 25@27c
Fryers 25@26c
Hens, extra, per lb. colored 20@22c
Small leghorn 19@21c
Smooth Young Roosters, per lb. (3 lbs. and over) 23@26c
Geese, per lb. 19@21c
Squabs, per doz. \$3.00@3.50
Ducks 20@22c
Old 20c
Belgian Hares 13@15c

BUTTER.

Receipts of butter, especially from Sonoma and Marin county creameries, have shown a marked increase during the past week and easier prices have been the rule. Another factor in this weaker tone was the lighter call from Los Angeles, which only drew about 60,000 pounds from this market as compared with 100,000 during the preceding week. A few small shipments to Northwest points have been reported and the usual exports. The New York and Chicago markets do not warrant any shipping from this section.

Thu. Fri. Sat. Mon. Tu. Wed.
Extra 39 38½ 38 — 36 35½
Prime 37 37 37 — 35 35
Firsts 36 36 36 — 34 34

*Holiday.

EGGS.

Egg prices showed a small decline for the week, and only a heavy shipping demand preventing heavier losses. During the past week nearly twenty-five cars of eggs were shipped from here and Petaluma to Eastern and Northwestern cities. Chicago got the bulk of these shipments and is still buying here. Los Angeles drew on this market for one car.

The San Francisco Wholesale Dairy Produce Exchange made several changes in the rules governing the grading of eggs that will have considerable effect on future shipments. Hitherto, the grades known as extras and selected pullets were allowed to contain washed eggs, but this is to be changed. From now on the grade known as extras must be free from washed stock and goods which would qualify as extras except for washing will go into a new grade to be known as extra firsts. Extra pullets will replace selected pullets and must be free from washed eggs, while extra first pullets will contain the washed stock which formerly fell in the pullet grade.

Thu. Fri. Sat. Mon. Tu. Wed.
Extra 33½ 32½ 34 — 33 32½
Extra pul. 30 29½ 32½ — 30 29½

*Holiday.

CHEESE.

A very firm undertone continues as the ruling factor of the local cheese market with buying for Eastern shipment responsible for an advance on types of California offerings. During the past month California has shipped more than twenty-five cars of cheese to Eastern points, besides a normal export trade.

Y. A.'s 21c
Fancy Calif. Flats, per lb. 19½c
Monterey Cheese 16@20c

DECIDUOUS FRUITS.

The shipment of several large cargoes to the Hawaiian Islands, and a good local demand, resulted in further cut in size of storage holdings here. Quotations on both apples and pears were without change. Citrus offerings were all higher.

Apples:
Bellflower, box \$.60@.75
Newtown 1.10@1.25
Pears, Winter Nellis 2.50@3.00

DRIED FRUITS.

Developments for the week were of a rather negative character as far as dried fruits were concerned. A few contracts for 1917 peaches were closed at 6 cents per pound and some dealing in prunes at 5½ cents was reported. Lake county pears are out of the market and stock from other sections has eased somewhat under a slow call. Sales of 1917 figs by growers at prices below those being asked last week were rather general, but in most cases these transactions can be traced to a need of ready money. The outlook for high prices on raisins is even bet-

Special Citrus Market Report.

Los Angeles, Feb. 13, 1917.

Shipments of citrus fruits from Southern California from November 1 to February 8: oranges 6,260 cars and lemons 1,391 cars. Same time last year, oranges 5,069 cars and lemons 1,440 cars.

The Florida crop of oranges being pretty much out of the way and not so many foreign oranges arriving, the markets East the past week showed more strength. Demand good and all highly colored of best known brands brought a little more money. Lemons too showed more life and at times were higher.

Locally the market showed a little more strength. Not so many culls coming in and the quality of the fruit better, which helped sales. Buyers bid-

ding 1@1¼c per pound in the grove picked. Grapefruit in very good demand and steady at 2c per pound in the grove picked. Tangerines continue slow sale at 1@2c per pound in the grove picked. Lemons show no change, they continue to drag. Packers still bidding 1@1¼c per pound in the grove picked. Poor stock has to be sold for what it will bring.

AUCTION SALES.

Boston, Feb. 12.—Fifteen cars sold. Market doing better on oranges and lemons. California navel averaged \$1.00@3.45. Lemons averaged \$2.30@3.85.

Philadelphia, Feb. 12.—Three cars sold. Market higher on oranges. California navel averaged \$1.95@2.55.

San Francisco May Have a Milk War.

While some middle ground may be arrived at satisfactory to all concerned, there is now a strong possibility of the most bitterly fought milk war ever recorded in San Francisco at contract fixing time next June.

The producers, through the Associated Milk Producers' Association, have materially strengthened their position since their contracts were made last June, with the result that they now have signed up for delivery after June 1, 1917, 24,000 gallons of milk daily. Of this amount they are marketing about 2,000 gallons a day in other bay cities. There are about 32,000 gallons consumed in San Francisco and 5,000 to 6,000 gallons of this are produced by distributors themselves.

With this supply assured producers feel able to enforce their demand for a minimum price of 16½ cents a gallon, with ¼ cent per gallon increase for every one-tenth increase in test over 3.6 per cent—the minimum test. This price was turned down by the distributors last June with the result that a minimum price of 14 cents is now being received by the producer, regardless of test, except that it must comply with the State law.

So insistent are the producers in their demand for the higher price that they threaten to enter the distributing field and if necessary resort to price cutting. Members of the association have offered the use of 150 vehicles for this purpose if they are required.

ter than before, with 62,000,000 packages sold in the East as compared with 43,000,000 at this time last year. All indications point to old crop being sold out before new stock is offered. [Net to growers, bulk basis, f. o. b. shipping point.]

Apples, new crop 5½@6c
Apricots, per lb. 15@16½c
Figs, black, 1916 6@8½c
do, 1917 5½@6½c
do, white, 1917 6@6½c
Callimyrna, 1917 9@10c
Prunes, 4-size basis, 1917 5@5½c
Prunes, 1916 5½@7½c
Pears 6@7½c
Peaches, 1917 6c

RICE.

Local demand is practically nil on account of the low-priced offerings which are being forced on this market. There is some demand for New York shipments, but the freight embargo and the high all-rail rates make these prohibitive. Authentic reports from Louisiana say that there are four and a half million bags of the 1916 crop still in the growers' hands as compared to 1,373,000 bags Feb. 1, 1916. Local prices are still figured on a \$1.70 basis for best quality paddy.

HOPS.

Sacramento 8@9c
Sonoma 10@11c
Mendocino 9@10c

HORSES.

Drafters, 1700 lbs. and up 250
Drafters, 1550 to 1650 lbs. 150@200
Chunks, 1350 to 1500 lbs. 150@175
Wagon Horses, 1050 to 1350 lbs. 110@150
Great Mountain range horses:
950 to 1200 lbs. 20@75
900 to 1200 lbs. 50@100
1000 to 1200 lbs. 150@175
1200 to 1400 lbs. 175@200

LOS ANGELES.

Los Angeles, Feb. 13, 1917.

BUTTER.

Receipts of week ending Feb. 13, 1917—323,719.
Receipts of week ending Feb. 13, 1916—306,160.

There was a stronger tone to the market the past week. Consumptive demand good and receipts only fair and no stocks caused dealers to bid prices up the first part of our review week. By Saturday, however, the market began to show signs of weakness. Monday brought rain and better receipts than for some time and by Tuesday with San Francisco off 2c the market was sold off 2c, closing at 37c for extras and buying was only moderate at this.

We quote extra creamery 37c
Prime first 36c
First 35c

1917— Wed. Thu. Fri. Sat. Mon. Tu.
Extra ... 39 40 40 39 39 37
1916—
Extra ... 33 33 34 33½ 34 34

EGGS.

Receipts (railroads) for week ending Feb. 13, 1917—2000 cases.
Receipts (railroads) for week ending Feb. 13, 1916—1480 cases.

More in the past week and the shipping demand not so strong caused prices to work lower. The market by Friday had dropped 2c on extras and 3c on case count and pullets. At this reduction there was a very good consumptive demand, the lower prices encouraging consumption and the receipts were pretty well taken care of at the prices. Tuesday under liberal receipts and a lower market in San Francisco ranch eggs case count broke 1c and pullets ½c and demand only fair at these prices.

We quote fresh ranch case count. 25c
Extra 33 33 31 31 31 31
Ranch 32 32 29 29 29 28
Pullets 31 31 28 28 28 27½

1916—
Ranch 30 30 29 29 25

POULTRY.

The market the past week was hardly so snappy as the week before, the high prices curtailing consumption. Hens coming in more freely and weak. Broilers and fryers, however, in light supply and higher in good demand. Ducks slow sale and lower and turkeys quiet. The high prices checking consumption and causing buyers to go slow. Geese dull.

We quote from growers:
Broilers, 1½ to 3 lbs. 27@28c
Fryers, 2½ to 3 lbs. 23@24c
Hens, over 4 lbs. 20@21c
Hens, under 4 lbs. 17@18c
Ducks 18@19c
Geese 16@17c
Roosters, 3 lbs. up (soft bones) 22c
Turkeys, heavy, 12 lbs. and up 28@29c
Turkeys, light 24@25c
Squabs, live, per doz. \$1.50@3.00
Dressed 3.75@4.85

CABBAGE AND CAULIFLOWER.

A firm and fairly active market was had the past week. Cabbage continues under scarce and high, finding ready sale at \$3.50@4.00 per 100 pounds. Cauliflower too is holding up very well. Not much coming in. The season is drawing to a close. Demand very fair for what arriving at \$1.20@1.30 per standard crate to growers.

HONEY.

The tone of the market was firm under the influence of the tight stocks, but buying was light and only of such lots as needed for immediate use. High prices caused buyers to hold back and go slow.

We quote from growers:
Water white, pound 8½c
White sage, lb. 8c
Light amber sage, lb. 7½c
Light amber alfalfa, lb. 7½c

Ripe Olives Enjoy Good Markets.

Dealers in California olives are enjoying one of the best market situations that has existed for several years. The 1916-17 crop was short in itself and was further reduced in size by early frosts. As there was practically no hold-over of the 1915-16 crop, conditions are almost ideal in the disposition of this year's product.

The selling of olives on futures has been practiced in this State in the past, but packers who sold on futures this season find it exceedingly difficult to fill their orders. Because of this, and the short crop, the demand for olives is greater than the supply.

The Cal. Associated Olive Ass'n, who is packing the Serra, "the grower's brand," is not taking advantage of these market conditions in regard to increased price to the trade or consumer. Its policy is to maintain a uniform price, building its business along this line in the hope that an increased consumption of olives may result.

There has been a heavy demand for the reasonably priced canned olive, generally known as the "10-cent seller." Fully 50 per cent of the olives in California that previously went into oil are being processed and sold by the growers' association this year. The quality of these is the same as of larger sizes and if the consumer does not eat with his eyes he can get a goodly portion of olives for 10 cents.

There are two advantages in putting this size on the market; it educates consumers east of the Rocky Mountains as to the value of ripe olives and provides the growers with a remunerative market for olives that have heretofore been used entirely for oil manufacture.

Fancy white comb, lb.	10	c
Light amber comb	9	c
Beeswax	30	c

There was more inquiry the past week than any time since the opening of the new year. Receipts only fair and shippers and local buyers were both in the market. Prices were advanced sharply on limas, whites and pinks. Prices are not only higher but the advance has been maintained.

We quote from growers:

Limas	\$ 9.00 @ 9.25
Large white	11.00 @ 11.50
Small white	11.00 @ 11.50
Pinks	7.50 @ 8.00
Blackeyes	5.25 @ 5.75

Tepary	5.75 @ 6.25
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Receipts were again very good the past week and the market was draggy throughout. With freer offerings buyers held back; even the country was inclined to take hold less freely and values were weak. Prices, however, have not been marked down as holders felt that with a dropping off in the receipts that the surplus can be disposed of at current prices. Receipts 228 cars.

We quote f. o. b. Los Angeles:

Barley hay, ton	\$18.00 @ 22.00
Oat hay, ton	19.00 @ 21.00
Alfalfa, northern, ton	17.00 @ 18.00
Alfalfa, local, ton	19.00 @ 21.00
Straw, ton	9.00 @ 12.00

Special Livestock Market Report.

San Francisco, Feb. 14, 1917.

[Prices paid for stock, live weight, off cars, without feed or water, at Stock Yards, South S. F. Hog prices subject to seller standing one-half of all hogs condemned by government inspectors.]

CATTLE continue to be in great demand and price fluctuations are numerous. This is particularly true of steers, she-stuff quotations remaining unchanged on the theory that a continuation of the dry weather will force great quantities of this class on the market. What few prime baby beef there are in the State are being bid for; one feeder having turned down 10 cents for his entire offering last week.

Steers, No. 1	9 1/2 @ 9 3/4 c
No. 2	8 1/2 @ 8 3/4 c
Cows and Heifers	7 1/2 @ 8 c
No. 2	7 @ 7 1/2 c
Bulls and Stags	5 1/2 @ 6 1/2 c
CALVES, light	9 @ 9 1/2 c
Medium	8 1/2 @ 9 c
Heavy	7 @ 8 c

SHEEP trade is still pretty much limited to lambs because of the almost total scarcity of older stuff. Consumption has been materially reduced on account of the high prices. Killers are working on lambs from Idaho and Oregon this week and securing sheep from feed-lots. Idaho lambs are costing around 14 cents f. o. b. S. F.

Prime Wethers	9 1/2 @ 10 1/2 c
Ewes	8 @ 8 1/2 c
Lambs	12 1/2 @ 13 1/2 c

HOGS are marked up again notwithstanding the already high price level. Supplies continue to decrease in size and this, together with high-priced pork in Northwest and Eastern markets, makes a strong undertone to the market.

[Rough, docked 20 pounds, piggy sows, 40 pounds, stags 80 pounds.]

100 to 150 lbs.	9 1/2 @ 10 c
150 to 300 lbs.	11 1/2 @ 11 1/2 c
300 to 375 lbs.	10 1/2 @ 11 c

WOOL buyers report the Red Bluff clip pretty well cleaned up, the extreme high figure of 37 cents being reported. Buyers are still in the Bakersfield section but are finding it difficult to make any inroads on the growers' demands. There is some movement of wools in the East, but freight embargoes are holding up all California shipments. One steamer shipment was made via Panama this week.

Sacramento Valley, spring clip.

Mendocino, year's	22 @ 30c
Southern, spring clip	26 @ 28c
Southern, 7 months	13 @ 16c
Imperial Valley, 7 mos.	14 @ 15c
Nevada, year's	31 @ 32c

HIDES and leather are both in a healthier demand than they have been for some time. A report from the East says inquiries are more numerous than they have been and confidence is being restored. A break with Germany is expected to still further improve this condition.

Steers	21 @ 23 c
Cows	21 1/2 @ 23 c
Light hides, 25 to 48 lbs.	21 1/2 @ 23 c
Kip	20 @ 22 c
Calf and veal	29 @ 30 c
Dry Hides	32 1/2 @ 33 1/2 c
Dry Kip	35 @ 36 c
Dry Veal and Calf	38 @ 40 c
Pelts, long wool	\$2.25 @ 2.50

Short wool	1.25 @ 1.50
Horse hides, wet, large, ea.	5.00 @ 5.50
dry, large	3.00 @ 3.50

Los Angeles, Feb. 13, 1917.

CATTLE: There was a sharp advance the past week all along the line. The demand was only fair, but with a falling off in the supply of good killing cattle and strong and active markets East, caused killers to bid prices up in order to get what they wanted. California and Arizona furnished most of the supply and are giving us some good cattle for this time of year.

Per cwt. f. o. b. Los Angeles:

Beef steers, 1000 to 1100 lbs.	\$9.00 @ 9.50
Prime cows and heifers	7.50 @ 8.00
Good cows and heifers	7.00 @ 7.50

HOGS: There was a dropping off in the receipts the past week, and as there was an advance in fresh pork and demand good, hogs ruled higher in sympathy. The Eastern markets kept up, which encouraged a higher market here. California and Arizona furnished most of the receipts with a few in from Idaho.

Per cwt. f. o. b. Los Angeles:

Heavy, averaging 250 @ 300 lbs.	\$9.25 @ 9.75
Mixed, 200 @ 250 lbs.	9.75 @ 10.25
Light, 175 @ 200 lbs.	9.75 @ 10.25
Rough docked 20 pounds, piggy sows	40 pounds and stags 40 per cent.

SHEEP: With the Eastern markets high and the supply of fat sheep and lambs in the country light, killers the past week had to bid higher both for sheep and lambs. Even at quoted prices feeders were not anxious sellers. The general disposition being to hold as many sheep and ewes as possible until after the lambing and shearing season is over.

Per cwt. f. o. b. Los Angeles:

Prime wethers	\$9.00 @ 10.00
Prime ewes	9.50 @ 10.00
Yearlings	9.50 @ 10.00
Lambs	13.00 @ 14.00

CALVES: But few coming in and market and demand good. Selling at \$8.75 and \$9.75 per cwt.

North Portland, Ore., Feb. 12, 1917.

CATTLE: With a light supply of around 400 head on the market it can yet be called an active session at steady to strong prices. There was a fairly good demand from packers and especially from small butchers and all offerings were disposed of early. Best beef steers from \$9.00 to 9.25; the one load that brought \$9.25 was a prime load of yearlings averaging 1040 lbs. Prime killers both light and heavy sold at \$9.00; medium to good steers brought \$8.50 to 8.75; while the fair steers sold from \$8.00 to 8.50; common and ordinary valley steers brought \$6.00 to 7.00. There were only a few good cows available this morning although demand was limited; a few good cows brought \$7.50, with one small bunch of prime stuff going at \$7.70; fair to good cows sold from \$7.00 to 7.25. A few prime heifers brought \$8.00. The heavy demand for bulls during the last month continues and prices are gradually getting higher, one prime heavy bull brought \$6.50 with a few others at \$6.00, the bulk bringing \$5.50 to 5.75.

TIRES
We Guarantee

Goods shipped to all points C. O. D. Money refunded on goods returned intact within one week.

Size	Special Prices on Plain Tread	Gray	Red
28x3	\$ 7.20	\$1.85	\$2.05
30x3	7.65	1.95	2.20
30x3 1/2	9.85	2.29	2.45
31x3 1/2	10.40	2.25	2.50
32x3 1/2	10.95	2.35	2.55
34x3 1/2	12.05	2.40	2.65
36x3 1/2	13.25	2.50	2.90
30x4	14.50	2.95	3.25
31x4	15.25	3.00	3.35
32x4	15.45	3.10	3.45
33x4	16.15	3.25	3.55
34x4	16.45	3.30	3.70
35x4	17.20	3.35	3.80
36x4	17.45	3.45	3.90
34x4 1/2	22.25	4.05	4.50
35x4 1/2	22.95	4.15	4.55
36x4 1/2	23.35	4.30	4.75
37x4 1/2	24.10	4.35	4.85
35x5	26.00	4.95	5.45
36x5	26.35	5.15	5.60
37x5	27.40	5.20	5.70

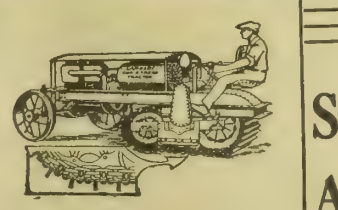
Non-Skid Prices in Proportion.

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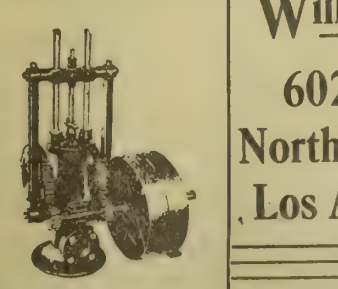
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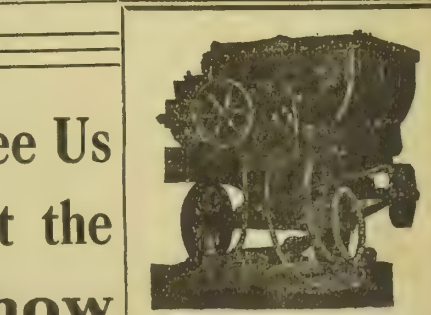
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Stability

YOUR car is inseparable from the institution that built it.

The service it gives you is just what its producers build into it and *keep alive* in it.

In motor cars, stability of product is inseparable from the stability of the producers.

Overland ranks first among producers of cars above the \$400 class—second in the entire industry.

There are 400,000 Overlands in use.

Overland dealers have contracted for one hundred and eighty million dollars worth of Overlands for 1917—an increase of seventy-five million dollars compared with last year.

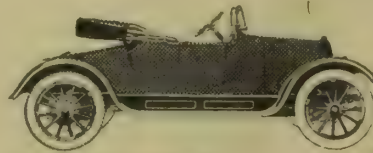
Overland sales this year therefore will be approximately as great as the entire annual gross revenues of the New York Central Railroad.

Overland net assets have grown from *fifty-eight thousand* dollars eight years ago, to *sixty-eight million* dollars today.

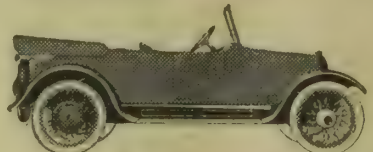
In our great Toledo plant and our allied plants, we employ nearly thirty-eight thousand men.

They directly support more than two hundred thousand people.

Permanent well appointed factory branches and parts depots representing an investment of millions have been established in important metropolitan centers that cover the country.



Two Passenger Roadster
Light Four, 104-in. wheelbase \$650



Four Seater Sport Model
The Country Club, 104-in. wheelbase, \$750



Big Four Roadster, 112-in. wheelbase, \$835
Light Six Roadster, 116-in. wheelbase, \$970



Light Four Touring, 106-in. wheelbase, \$665
Big Four Touring, 112-in. wheelbase, \$850
Light Six Touring, 116-in. wheelbase, \$985

All prices f. o. b. Toledo

These branches serve the five thousand Willys-Overland dealers who complete our great international service system.

These tangible evidences of the stability of the Overland Industry are your best assurance of stability of quality and service in Overland Automobiles.

The Willys-Overland line is now *complete*.

And it is the only complete line of cars built and sold—

- under *one* executive management,
- with *one* engineering staff,
- with *one* purchasing power,
- by *one* production management,
- through *one* sales force, and
- one* group of dealers.

Resulting economies amounting to millions of dollars, reduce the cost of every car—enable Overland to establish and maintain higher quality standards at lower prices.

So in your Overland you get maximum quality at minimum price—plus stability to assure permanence of value in your investment.

You can select a car in the light four group, the big four group, or the light six group.

You can select one of the cars in the luxurious Willys-Knight group.

In either case it is dominant value in its class for it has shared in the economies of Overland bigness and stability.

See the Overland dealer now and make your selection.

Catalog on request. Please address Dept. 897.

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Manufacturers of Willys-Knight and Overland Automobiles and Light Commercial Cars

"Made in U. S. A."

THE PACIFIC RURAL PRESS

SAN FRANCISCO

FEBRUARY 24, 1917.

LOS ANGELES

Some Observations on the Pruning of the Olive.

[Written for the Pacific Rural Press by Prof. F. T. Bioletti of the University of California.]

THERE is no new thing under the sun," said Solomon, the great sage of the Hebrews, and Professor Wickson evidently has this view about pruning, for in a very interesting talk recently, to a students' horticultural club, he gave the history of the development of the present Californian system of pruning deciduous fruit trees, and showed that this is practically the system described and advocated by Barry seventy years ago. Barry imported the system from France. It was probably brought to France by the Romans from Egypt, where it had been introduced by the Babylonians, who got it from the Sumerians.

Is it possible that the proper method of olive pruning, about which we are in such uncertainty, is common practice in Spain, or Syria, or Timbuctu? Perhaps; but there are many systems in these lands, and many more in others, and which, if any of them, is the best we can discover only by trial. The Barry method was not the only system in use in France when Barry wrote.

After reading much contradictory evidence and observing much diversified practice, it seems possible to recommend certain methods, which, while perhaps not the best, are at least good and safe. The following recommendations therefore are the result partly of theoretical considerations and partly of observations of Californian practises, and do not pretend to be authoritative.

Pruning Trees before Planting.—The olive, when planted with bare roots, should be treated in the way accepted for deciduous trees. As all the feeding roots are destroyed, necessarily, in transplanting, the young tree is incapable of obtaining water until it develops new ones. A severe pruning back of the top and removal of all the leaves is logical, and perhaps more necessary with olives than with trees naturally bare of leaves when planted. Leaves evaporate water and may desiccate and kill the tree before it can grow a crop of water-absorbing rootlets.

All branches, then, should be removed entirely and the main stem shortened to 15 or 30 inches, according to the size of the tree. To prevent injury to the bark by the direct rays of the sun, the stem should be whitewashed or shaded by means of a shade on the southwest side.

Pruning Young Trees.—The leaf is the feeding organ of the plant, and the growth of a tree is conditioned and limited by the amount of its foliage and by the length of time its foliage is active. A deciduous tree may make as much foliage, and this foliage may function for as many weeks,

if we prune it severely in the winter, as if we do not prune it at all. The case seems to be different with an evergreen tree like the olive.

Such a tree is indeed relatively dormant in the winter, and the food absorbed by the leaves is probably only sufficient for their own vital needs, as is evidenced by the cessation of new growth. When the warm, growing weather of spring arrives, however, the unpruned tree has more foliage than the pruned and commences to assimilate an excess of food immediately, and thus has an advantage of many weeks over the severely

pruned tree which has first to develop new foliage at the expense of the stores of starch and other food laid up in its branches, trunk, and roots. This is theory; but theory well supported by facts. There are trees four years old which are no larger than others only two years old, where the only difference of conditions or treatment is that the former were pruned severely every winter after the manner usual with the peach, while the latter were pruned very little.

A safe rule to follow, therefore, seems to be to prune only as much as is absolutely necessary to give the tree the desired form, and never to remove a twig or leaf that does not interfere with this object.

At the end of the first growing season, no pruning is necessary except the removal of strong shoots growing on the lower half of the stem where main branches are not desirable.

At the end of the second growing season, many trees will require no pruning at all. Some, however, will have developed strong branches in unsuitable places. These should be removed. Branches which cross from one side to the other, branches which are too crowded, or which interfere with the symmetry of the tree, or may interfere with cultivation, are misplaced. If there is a single strong central branch, this should be cut off at its base to promote the desirable open vase form of the main scaffold of the tree.

With Mission and other upright growing varieties, the problem is relatively simple.

With spreading varieties, like Manzanillo, it is difficult. In this case the best method is probably to drive a strong stake near the trunk, and by means of a rope tie up the spreading branches in the position it is desired to have them in the mature tree.

This method should be continued until the trunk, main divisions and branches are well established and the tree large enough to bear a good crop without injury.

(Continued on page 231.)



WELL-PRUNED OLIVE TREE READY FOR BEARING.

It should be noted that this tree has not been developed from severe cutting back in previous years. The appearance of starting branches in that way is due to the shortening of central parts of well-grown branches by cutting to laterals after considerable growth has been made. The next break of shoots will fill out the framework as much as is desirable.

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EDITORIALS

A GREAT RAIN.

NATURE has been exceptionally crafty and cruel this season. She sang Sensation's siren-song, drew the weather-prophets out upon her barred-zone of pseudo science, and shot them all up without warning. We grieve for them; we weep copiously over them, as Nature is doing as we write on Wednesday. Fortunately, they are not dead, but soaking. Will they not dry-off wiser? We hope so, for they are now the great enemies of reason and resolution. Possibly what we say may be nonsense some day, but in our present light it seems forbidden to man to know seasonal rainfall in advance for the same reason that man is forbidden to know the span of his own life. If a man knew the date of his death he would be plunged into frantic fear, ecstatic anticipation, or insane pursuit of pleasurable sensations, as one or other of the mind and body forces contending within him should dominate. In any case he would fail of a man's part in the natural and social orders of creation. By the same sign, if men knew the insufficiency of a coming seasonal rainfall, which is the span of life of annual food production, productive effort would cease because man's bravery of effort, come what may, would be paralyzed and famine would ensue. Our philosophy may prove folly-love some day, but this rain is good, timely and ample—several inches of it from end to end of the State. Those who have not been diverted from timely work by the croaking of the prophets have placed themselves in the way of reaping rich rewards.

THE PRODUCER AND HIS PRODUCT.

ONE who has just awakened to interest in food production in this country, because his pocket is empty before he fills the needs of his family, is apt to do one of two things. He may suffer in mute discouragement or he may join a shouting-band of consumers and disturb the peace of suburban evenings with raucous cries about farmers' trusts—calling upon the State to cease promotion of producers' co-operative selling organizations, and to take acute measures to curb the greediness of the membership thereof. Both the mute-sufferer and the loud-shouter are wrong. There should be energetic effort of both of them to reach true understanding of the causes underlying undue inflation of food prices, and there should be clear and emphatic statement of the facts of such understanding so that the public may act intelligently and effectively for its own protection, and the advantage of all interests genuinely and legitimately involved. Such an attitude is easy to declare and very difficult to define. We can declare it; its definition and significance require economic research and interpretation of which we have no mastery—if indeed such mastery, based upon full possession of facts and logic in their interpretation, can be claimed by anyone at this moment. It is the duty of every one to think coolly and look confidently for the approach of such understand-

ing and mastery to emerge from the welter of agitation in which the issue is now plunged. They are sure to emerge, for the physical and moral welfare of the human race are dependent upon such emergence and upon public recognition of the truth. It is our notion that these indispensable achievements will approach along the line of the producers' relations to his product and discharge of his duties toward the equitable distribution thereof.

PRODUCERS' CONTROL FUNDAMENTAL.

WHEN the producer attains mastery, based upon full understanding, true interests will be served because it is only with the producer that maximum production with a fair profit is a fundamental, combined need and motive. If the handler's combined need and motive, greatest profit with least risk, prevails, it is a two-edged sword, drawing economic blood from both producer and consumer, and thereby robbing one of producing and the other of consuming force. If the consumers' combined need and motive (as now loudly and unreasonably urged) prevails, viz., to buy food at the lowest possible price, without regard to producers' cost of production, it clearly limits production, and thus, automatically, defeats itself. Therefore, the producer's economic requirement, which is maximum profitable production, underlies and insures his own increasing effort, the expansion of honorable commercial distribution and amply adequate and fairly-priced provision for consumers' needs. There are, perhaps, two ways in which this devoutly to be desired consummation can be attained. One is by governmental appropriation and apportioning, which is a paternal and socialistic arrangement, sometimes imperative in war, but offensively un-American in times of peace. The other is by co-operative organization, under laws enabling and regulating generously and wisely. As effective co-operation merely intensifies and multiplies the powers of individuals co-operating, and does not change their needs and motives, it is obvious that the only co-operation which will insure increasing production is a co-operation of producers, for they constitute the only class whose interests reach all the way through from the first planting of the seed to the last eating of the products and by-products of that planting. All this will be accomplished by producers' organizations, which will fix the price to the consumers. This they will do in the future much more largely than now by direct trade through improved parcels post, but they will do it first, and much more extensively, by fixing prices fairly above cost of production through quantity-distribution by their own selling agents at central points in all parts of the country.

TRUSTING PRODUCT TO SELL ITSELF.

AS WE have said on a previous occasion, it is our conviction that all schemes, based upon the idea that products will sell themselves, if ways are opened, are inadequate, and will prove ineffective. We believe ways should be opened and cleared of ruts and ridges, of course, and laws can be made to do that; but trusting to move masses of products by wheel-barrow which can get adequate movement only by 24-cylinder motor-trucks, seems to us childish, if not pitiable. By this we mean all those consumers' brilliant thoughts, which are now being forced upon public attention in connection with claims for State service in the interest of food distribution. All these are poultices for a sore thumb when the patient is really writhing with appendicitis. Operations are often required when troubles are organic and fundamental, or where obstructions are insoluble, or caused by organic displacement. This is the character of the conditions which have arisen to obstruct the full and free movement of food products from production to consumption. For this reason, and because we can only see regulation through insight and force along the line of the producer's relation to his product, we are very earnest in our advocacy of the measures now before the Legislature for the increased efficiency of the State Market Director in order that he may better proceed with his work of organizing producers to do work which, as we have argued, they

only can have adequate need-motive to do, and they only have the power to do. We are not arguing for Col. Weinstock; we are, however, trying to get behind and beneath him for a great push to his function. We admire him as a bright and energetic publicist, who has no other interest but the advancement of true and fair prosperity for all who deserve it, and whoever takes him for anything else, or actuated by anything else, makes a serious mistake. We support him because he represents what appeals to us as the only adequate and fundamental conception of the producer's relations and duties to his product, and whether he has handled his clippers for the abrasion of too many oranges, or whether he has fished for the hooking of sharks instead of salmon, is simply a matter of difference in judgment as to method. We support him because he is on the right road and on the only road which can come through, for the reasons stated. There are sidings on this road, which run in the same general direction as the main line, as sidings have to do, and such sidings are necessary and must be provided. But the present danger lies in the fact that many earnest and commendable people are running out on sidings, shooting steam and belching smoke and whistling crossings—apparently oblivious to the fact that unless they soon get back on the main line they will go into the ditch, a wreck of purposes impossible of attainment. For all these little local marketing arrangements, great though they appear and really are to those who wish freedom to buy and sell without the intrusion of local middlemen, are really only sidings of the main line which must be well surveyed and ballasted because it is the only line which can successfully cross the uneven country through which national development is impelling us.

CONTROL-SELLING NOT NEW IDEA.

WE HAVE to smile at some of the tantrums which mistaken people are performing in the public eye in the way of denouncing producers' control organizations as a new and trustful idea in California agriculture. They are, of course, rather new in successful and effective organization, but they are nearly as old as this American State in conception, earnest advocacy, and in recognition of their indispensability to the full development of California. Some day we shall take space to trace the idea from its humble birth among the pioneers to its present distinguished achievements. It was a very lamb-like idea at first, which was, perhaps, due to its first dawning on the wool-growers of the '50's, but it was pastured by the wheat-growers of the '60's; was given a little something for its stomach's sake by wine-growers in the '70's; consequently gamboled seductively before the fruit-growers of the '80's; butted into preliminary deeds in the '90's; and began to spear something notable in the first decade of the new century. It is, therefore, a fact that California producers have been trying to adjust their relations to the parting from their product for half a century, and have thus been growing toward maturity in their understanding and action all this time. During the last few years they have advanced rapidly, and have worked wonders, rescuing their enterprises from bankruptcy by the only possible way, which is to price the goods and regulate their distribution. In the fullness of time came the State Marketing law of 1915, which placed the State in sympathetic, helpful and promotive attitude toward the realization, for the whole people, of the producers' need-motive relation to food production and distribu-

California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau at San Francisco, for the week ending at 5 p. m., February 20, 1917.

STATIONS	Part Week To Date	Rainfall Data		Temperature Data	
		Seasonal To Date	Normal To Date	Max'm	Min'm
Eureka .....	.57	17.33	29.58	58	26
Red Bluff .....	.14	11.30	16.57	74	34
Sacramento	1.02	7.60	13.19	72	38
San Francisco .....	.74	11.26	15.45	73	42
San Jose .....	.40	7.10	11.08	74	34
Fresno .....	.56	5.79	6.13	68	38
Independence .....	..	..	..	..	..
San Luis Obispo	2.40	17.73	12.98	68	32
Los Angeles	1.30	11.24	10.34	70	42
San Diego .....	.80	7.80	6.63	66	44

tion. And now by proper amendments to that law to make it more practicable and forceful, there will appear State economic highways leading to fair trade in food products, as well graded, disposed and constructed as the geographic highways which are making California famous.

PRODUCERS HELPED BY ECONOMIC ENGINEERS.

IT IS important to state for the benefit of those who are themselves so new that they look upon product-control by producers as a new thing in this State, that the degree of success which has thus far been attained cannot be credited wholly to self-help by producers themselves. Many Californians, who had themselves carried through great enterprises in other lines, were quick to see, thirty or forty years ago, that the capacity of California for unique agricultural products could only be utilized by co-operative organizations of producers to regulate and promote the handling of such products in a large way, for which producers alone have the proper need-motive, as we have claimed. In the '80's this force of suggestion from analogy, drawn from wisdom born of success in other commercial and financial achievements, was freely applied to the upbuilding of the fruit industries, which have thus far been our greatest field for producers' co-operation. Readers must take this fact largely by declaration, for we have not space at this moment for demonstration. It was in the '80's that David Lubin took his first step from commerce to agriculture—in a forward march for the latter industry, in the course of which his footfalls have been heard around the world. We hope to live to sketch the course of this great California economic sage and philanthropist—but not now. Let us draw instead a single incident from the life work of another Californian—a typical illustration of what we have in mind.

At the beginning of overland fruit-shipping, and for years afterward, the freight rates were fierce. To the growers they seemed the blackest scowl on a frowning sky, and perhaps they were, in a way, but they taught a valuable lesson. The fruit was being wretchedly handled all the way from the tree to the push-cart in Eastern cities—growers and shippers at this end were broken up. The railways got their money first; apparently, it made no difference to them whether the fruit on arrival was fit for a cut-glass receiver or a swill-tub, and it made the growers very sore. The situation was mixed, but out of it came one rather clear gleam, and that was that the fruit could go through in average good condition. The first run of Eastern dealer-shippers went on the rocks. The second run learned better handling, and cleaned up millions for themselves by systematic handling—still some of them feared that too much fruit would get through. It was natural enough, for they were ruled by the dealers' need-motive; to buy low and sell high, and crush out quantity which would kill high prices. Under such conditions, of course, there could be no adequate development of California fruit industries, because the producers' need-motive could not be realized; there could not be expanding consumption. But the growers at that time only dimly saw that fact, and they kept hammering away at the freight-rate, which would have been rational if they had not ceased with that effort.

RAILROADS HELP THOSE WHO HELP THEMSELVES.

IT WAS at a time of such a welter of things that William Sproule, now president of the Southern Pacific Company, was a young man, and incumbent of some position in the freight department—just what we do not remember. It was also a time when the old "all the traffic will bear" policy was getting feeble, and a better attitude of transportation to production was dimly dawning on the horizon of railway management. There was an assembly of fruit growers in San Francisco, and the sore thumb of extortionate freight rates was held aloft. "If we could get the railways to meet us face to face, there might be something done," was a suggestion of some hopeful soul, and so a committee was sent to the Townsend street trenches with a flag of truce ask-

ing for a parley. A railway speaker was promised for the afternoon session, and many of the growers doubtless forgot their lunch, they were so busy thinking of things to say that would cut-up the corporation. In the afternoon Mr. Sproule appeared and spoke simply and gracefully about the mutual relations of transportation and production in the building-up of the industries of the State and the prosperity of individuals, and the duties of both toward each other and toward the ends in view. Then he spoke more particularly of fruit shipping and freight rates. Rates had already been considerably reduced since shipping began, and for all he knew might be farther reduced as shipments increased, but he desired growers to realize that a possible reduction in freight rates would not meet their difficulties. If it were secured they might lose it by lack of proper handling, or some agency of distribution might take it away from them. Experience has shown that the fruit is not well handled for its own good or for theirs, and he suggested, respectfully, that if growers would organize, getting together themselves and their products, and dealing more directly with transportation and distribution, they would begin to realize that the reduction in freight rates which they might secure would not be their greatest gain.

This speech of Mr. Sproule, of which we grasp but a few points from our memory, stampeded to silence the ugliness with which many growers began to hear it. One old friend said to us: "I know why the railroad sent Sproule; it was because he could scold us in words that sounded like poetry." But that was not the significance of the incident, which was in its effects, and we use it simply as an illustration of the fact that all along the course of California progress toward efficient co-operation of producers for product handling, strong promotive influence has been exerted by men who have been successful leaders in modern business organization in other lines. It is undoubtedly true that much of the success of co-operative organization in this State is due to the advice and influence of such men. Such promo-

tion has now been accepted by the State as its proper function.

A WORD FROM TODAY.

WE HAVE gone back a few decades to show that the control-organizations of producers are not new in this State, and that they are, in a sense, a product of our whole citizenship. It has advanced by evolutionary processes, and it is still on its way, with self-help and outside influence not only still strong, and it is each year nearer the mastery which every consumer needs for his own comfort and prosperity. At the notable meeting recently in Pittsburgh, called the "Fourth National Foreign Trade Convention," B. F. Harris, who is both a farmer at Champaign, Ill., and president of the First National Bank of Chicago, made an address in which he said this:

"For fifty years the farmer has been feeding the people of the United States at less than the cost of production, throwing in his, and his children's, and the nation's birthright of soil fertility. He is the solitary producer who has no voice, and though properly rebellious, has in no successfully organized or concerted manner sought voice in the pricing of his products, and those who set the prices for him know little and care less as to the actual cost of production, nor of the wastes that lie between.

"High prices do not represent the 'farmers' greed,' for he is almost an innocent bystander, buffeted by seasons and market-makers, his share of what the consumer pays sometimes looking like '30 cents,' and not infrequently he works 16 hours to provide food for the 8-hour fellows. He is not a tradesman; and co-operative plans, with government help in stabilizing market situations, are required."

As one thinks seriously of these things, can it be doubted that what we need is proper adjustment of the relations of things, especially the producer's relation to his product until it reaches the consumer. And as one does think of this, how good in their way, and yet how unpromising and inadequate, are the little local marketing provisions which some people seem to think the chief business of the State!

By
the Editor

QUERIES AND REPLIES

Inquirer Must
Give Full Name
and Address

Failing Apricot Trees.

To the Editor: I have apricot trees four and five years old which have the bark cracked a little above ground and for 18 inches up. The wood at that place is apparently dead and I have cut off some dead links. What is the cause and what can I do for this trouble? The trees have never been sprayed. Should 'cot trees be sprayed, and what kind is used?—W. A., Hanford.

It looks like a case of sunburn, for one thing. Whitewash up as far as the sun can strike the bark. You should have done it as soon as planted and have repeated enough to keep them white unless fully shaded by the top growth. Too much dead limb is a bad sign, but one often has to cut some dead limbs from trees otherwise healthy. Too many dead limbs may mean alkali or mud below or too dry soil—anything which injures the roots is apt to make dead tops. Like other trees, apricots should be sprayed if you know what you are spraying for, and the kind of spray depends upon that also. Get some neighbor who knows about fruit pests to look over your trees and tell you if he finds anything to spray for.

How Much Water and When?

To the Editor: How many times a year should Muscat vines be irrigated in a district where surface water is about 50 feet deep and only four or five inches rainfall a year? How deep should the ground be wet each time it is irrigated? How many cubic feet of sandy loam will one cubic foot of water wet?—Subscriber, Hanford.

We are very sorry such questions are incapable of definite answer. The needs of a grape vine are conditioned upon the thirst of the air in which its growth has to be made, and the amount it can get from the soil after irrigation depends upon how long the soil will hold it from going beyond the reach of the roots by flying or running away—even if you do the best you can to reduce flying away by perfect surface cultivation. The number

of cubic feet of soil a cubic foot of water will wet depends upon the character of the soil and there are enough kinds of "sandy loam" to make any theoretical calculation a misfit for most of them. Besides, for any particular situation such as you have in mind, the thing to know is not that the ground water is 50 feet down but whether there are or are not layers in this 50 feet which will hold water so the roots can reach it or whether it is open and loose all the way down so that the water will run down so fast that roots cannot catch it. If there is a hardpan layer at, say, three to five feet you can get a crop of grapes with five monthly irrigations of, say, four acre inches each time. If the thing is all open below you may need to put on four inches a week for five months or longer—until you fill up the country below and then you may be able to grow grapes without any irrigation at all. Get an idea then of what kind of subsoil you have; get a good head of water; wet down the land well now, plant the vines as soon as the soil works well; keep making prospect holes for subterranean mud and keep putting on water so long as you find no mud below and the vines look as though they were enjoying the climate above. Keep notes of your operations with dates and quantities and you can soon see what practice will give you best results. Most that we now know about irrigation has been learned by irrigating.

Testing a Suspected Fertilizer.

To the Editor: Has unburned lime rock which smells very strongly of sulphur, any value as a fertilizer?—Subscriber, Lake county.

There are two ways to find the answer to your question. One is to have an analysis made; the other is to give some plants a good dose of it and see how they act.

Liquid for Citrus Fumigation.

A safe, effective, less expensive system with a simpler machine, is being tried in Southern California with equal killing effect and no damage to trees, fruit, or tents.

[Written for Pacific Rural Press.]

As far ahead of the fumigating machine as that is ahead of the old fumigating pots and troubles, seems the new means of fumigating citrus pests which has been tried out in various parts of Southern California during the past season. It reduces expense of operation, does no damage to trees, fruit, or tents, leaves no residue to damage the soil, and in these days of scarce cyanide, it is claimed that lower grades of that chemical may be used. No heat is generated in the whole process of fumigation. The process consists in spraying into the fumigating tents liquefied hydrocyanic acid gas which contains far less water than is used by other means. The khl is pronounced equal or better than by the common fumigation.

We observed a fumigating gang using the "liquid gas" in the Reed grove near Claremont one night recently. The machine, loaded with 32 pounds of cyanide in the liquid form, weighed only 32 pounds total, for the liquid weighs considerably less than the cyanide used in the making of it. A metal tank holding two or three gallons had been fastened horizontally on legs some 10 inches above a board. A hole drilled through its upper side admitted the liquid, which is carried in what seems to be a common 10-gallon oil can. From one end a pipe leads to the bottom of a vertical graduated glass tube set on the board at the end of the tank. A stop-cock admits the liquid at will. While we were watching, the "tree stepper" was also calling the dosage, by reference to a chart, and recording it. When 8 ounces of cyanide were indicated, liquid was permitted to fill the tube to the figure 8 on the graduate. The tube was connected by pipe to a brass hand-pump like a bicycle pump, also fixed vertically to the board beside the tube. Pulling up the handle of the pump withdrew the liquid from the glass tube. Pushing down the handle forced it out through two feet of small piping on the end of which was a double-angle nozzle from an ordinary spray pump. This of course had been inserted under the tent. The spray was forced upward among the leaves and somewhat against the tent. Aside from this, other operations are about the same as usual.

The liquid is non-corrosive, does not damage tents or clothes. We dipped our fingers in it at the invitation of the fumigators. Only the smell of it is harmful—anyhow, you don't want to breathe the vapor. On this account, a small rubber hose runs from the upper end of the pump along the pipe to the nozzles to take care of any gas that might collect in the upper end of the pump.

What Has Been Done.—The work at Claremont has been under direction of F. G. Wyman of the Growers' Fumigation and Supply Co. Four hundred pounds of cyanide and enough sulphuric acid were furnished to Dingle Bros. (to whose work the present progress is mostly due), and Messrs. Dingle made it into liquid

for less than the ½ cent per tree royalty now exacted from users of fumigating machines.

Early in December, according to Mr. Wyman, 180 trees were fumigated with the liquid in a 10-acre block, the rest of which was fumigated with a machine. No difference in killing effectiveness was found by the inspectors, though at Upland a better kill was found where the liquid had been used. No damage was done to trees or fruit. On February 6, 7, and 8, seven and a half acres were fumigated with liquid in the Reed orchard, on which the results are not known at this writing.

Economy.—According to Mr. Wyman, where equal weights of sulphuric acid and cyanide are needed to make the liquid, 1.7 pounds sulphuric acid are required per pound of cyanide in ordinary fumigation. To this saving, add the cost of the horse required for the usual machine. The new machine is carried by its operator. Where the horse and machine-wheels knock off considerable fruit, that is all saved by the new method. If less pure cyanide can be used, there is a substantial saving. Mining cyanide is being used. The saving in clothes and tents is a very important item, for there is often a great deal of patchwork to do on scorched or burned tents, or gas is lost and the kill reduced.

Limitations.—The gas is liquefied by compression and refrigeration; and any time its temperature goes above 85 degrees F., it is likely to give off fumes. At 110 degrees it was said to be explosive, but the men were working around it with open flames.

It is said that the railroads do not want to handle it yet. Nevertheless, machinery for manufacturing the liquid is not so expensive but that a plant can be located anywhere within hauling distance of the orchards that are to use it. There is talk of such a plant at North Pomona. Most of the liquid is now made at Azusa.

The usual precautions to avoid damage from too heavy doses are required; and fumigation must cease when dew or rain gathers in drops on the fruit. In that case the fruit would burn, though the leaves are not affected if thus wet. It requires a little more time to do the work than with a machine of the usual type. As the system has not been tried out for very long, it is well to watch its results carefully before taking it up so extensively as one who knows its nature is tempted to do.

A mealy bug which resists the strongest fumigation that a tree can stand has been found on a very small acreage in Riverside county. A meeting of the State Horticultural Commissioner with the county commissioners of southern counties was held at Riverside February 6 to decide on methods of eradication, since control has been found impracticable in other counties where this pest is more widely found.

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Preventing Crown Gall.

[Written for Pacific Rural Press.]

It is pretty well established that crown gall does not affect uninjured roots. One way to prevent crown gall, then, is to prevent injury to roots or to apply a reasonably permanent disinfectant. This latter can be done to the cut end of roots in planting trees; and there should be no scraping of their bark by tramping dirt around the roots with the feet, either in planting or in heeling in. Dirt can be settled without danger by water.

Using Apricot Roots.—In the Banning section of Riverside county, a determined effort is being made to overcome crown gall. One of the most successful of the growers is F. M. Butler, who has observed that the apricot root is very resistant. He has 1200 almond trees on almond and peach roots, 750 peach trees on peach root, and 500 apricot trees on apricot root.

The apricot roots are almost immune, while the other roots were severely infected until he cut off the galls, as told elsewhere. So Mr. Butler says if he were setting out another orchard he would use apricot roots if he could find a way of double-working almonds on them. Reader, drop the Pacific Rural Press a postal card telling of your experience in such double working. But do not be sure of apricot immunity.

No More Plowing.—Mr. Butler has observed that a moldboard plow spreads crown gall by the wholesale. After cutting through diseased wood, it tears up healthy roots and infects

them, either with germs it carries or with those in the ground about the broken root.

Mr. Butler has had his plow catch under roots too big to break. The plow has knocked off bark on the underside. He has marked such places and watched for three years. He has found big knots characteristic of crown gall on the undersides of these roots where the bark had been knocked off and as much as four or five feet from the tree. Some knots at that distance have been found big as one's head.

To prevent this it is well to follow the example Mr. Butler has observed around Rialto and Riverside. He has seen fruit growers there work down heavy cover crops by use of disk harrows alone, and mix them with the soil. Next season he proposes to double disk his orchard about three times to get it in as good shape as the plow and harrow would. The double disk is preferred, one following the other two or three feet, because it leaves the ground level for irrigation.

Where a plow would split or tear up roots, the disk will roll over them or make a clean cut. Where the moldboard would leave a plowsole, the disk does not even disturb the roots, for it will go three or four inches deep instead of six. It will not turn up any clods, nor bury them to dry out the soil and be unavailable. The harrowing will be avoided, but all later operations will be carried on as usual.

Has the Soil Water Enough?

To the Editor: In September of last year I had some moisture tests taken in my 20-year-old prune orchard after the crop was taken off. Tests were taken out of each foot to a depth of six feet, in several places in the orchard and in soil ranging from light gravel to a rather heavy loam. The orchard was plowed deep and well cultivated during the summer and the tests averaged: for the 1st foot 7.76 per cent; for the 6th foot 14.81 per cent, and the highest for the 3rd foot, 16.41 per cent.

I would like to know if you think this sufficient percentage of moisture to place trees in good condition for another year. If not what would you consider a sufficient amount?—Subscriber, Gilroy.

[Comments by Prof. Frank Adams.]

Commenting on the enclosed letter from your subscriber at Gilroy, I would say that we have made no moisture determinations of soil in the Gilroy neighborhood, but judging from investigations in Sacramento Valley with soils of a similar nature I would express the opinion that, in view of the light rainfall for this season, the means for supplying additional water by irrigation should be provided if possible, although it is not at all likely that additional

moisture is needed at this time. Although the percentages of moisture found last September would seem fully adequate for that time, the grower should bear in mind the fact that the "wilting percentage" of rather heavy clay loam such as he describes may be as high as the maximum percentage found. He will, of course, understand that it is only the moisture above the wilting percentage that is available to the trees. From my meagre knowledge of the soils about Gilroy it would be my suggestion that this orchard be watched very carefully for evidences of deficient moisture later in the season, unless of course we have a much heavier rainfall during the rest of the season than we are accustomed to count on.

Berkeley.

[And we would enforce the suggestion of Prof. Adams by reference to the good old rule: "When you are in doubt, take the trick." That is: if you are thinking of irrigating by pumping to supplement a possibly short rainfall, do it now and think about it afterwards.—Editor.]

FRUIT FROM OLD ORANGE TREES.

Oranges from trees sixty years old are to compete at the Seventh National Orange Show in San Bernardino, February 20 to 28, with fruits from the modern-day orchards. The oranges from the first trees planted in San Bernardino valley are to be used to demonstrate that the length of life of the orange tree in California is yet unknown. The trees were secured in Los Angeles in 1857 by L. Van Luven, pioneer settler of San Bernardino valley, and planted at old San Bernardino. It is believed the trees were from the stock planted by the mission fathers at San Gabriel, probably about 1800.



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Join Together for Apple-Spraying.

[Written for Pacific Rural Press.]

Apple growers in the Yucaipa district ordinarily have only five or ten acres; yet they must spray; for the county hires a man in connection with the Yucaipa Apple Growers' Ass'n to inspect orchards and insist on spraying wherever needed. That is everywhere when codling moth time comes.

Until the present season, there has been very little fruit that codling worms could attack, and most of the spraying has been done by commercial sprayers. This season, several associations of growers are getting together to buy power spraying machines and materials co-operatively. There are already 24 power sprayers in the valley.

One such association had as its moving spirit A. B. Ward, who takes care of some orchards besides his own. Six orchard owners having about 40 acres just coming into bearing, are represented. They paid \$422 for a machine on the basis of one acre per share. It was agreed that if two or more should want the machine at once, they would cast lots for first chance. Since one man owned 10 shares he would be at a disadvantage in a chance of one lot per man; so it was thought well to give him two lots, allowing the use of the machine on five acres for each. Thus, he would probably not have the machine for all of his orchard at one time, allowing it to circulate faster.

The labor and material cost is charged to each orchard separately, because one's trees might be larger, or he might require more thorough or more frequent spraying than some others.

A secretary was elected to keep accounts for all the orchards. The cost of labor is placed at \$5 per day for a man and team and \$3 per day for each of two hose men. Prefer-

ence is given to share owners in hiring the help.

Bids on Spray Material in bulk were asked of three companies, the best offer to be accepted. The sprays now being bought are arsenate of lead powder, twice as much weight of whale oil soap to make the arsenate stick better, and atomic sulphur to mix in for fungous diseases.

CURED CROWN GALL.

[Written for Pacific Rural Press.]

Probably the greatest problem of almond growers in the Banning district of Riverside county is crown gall. The ground is said to be naturally full of the organisms that cause the disease, the wild growth being affected. Much money is being spent to cure it. The general method is to dig away the dirt, chisel off the galls, and disinfect the cut surfaces.

F. M. Butler, who has 1200 almond trees and about 750 peach trees, is one of many who have done this, and one of the most successful. Four years ago he found about 56 per cent of his trees "knotted." He dug around each tree and when crown gall was found, a hole big enough to get at all of it with a small chisel was dug, and the knots cut off back into sound wood. Many knots were found on the tap roots under the fork of the other roots; but they were mostly near the surface and on top of main roots.

After cutting heroically, a Bordeaux paste was applied to all cut surfaces so strong that it would turn the wood yellow as if it had been seared. A man could treat about 60 trees per day.

The affected trees have been inspected every year since; and Mr. Butler believes that not over four per cent of the galls ever started to grow again.



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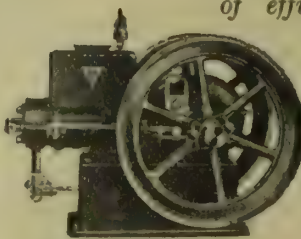
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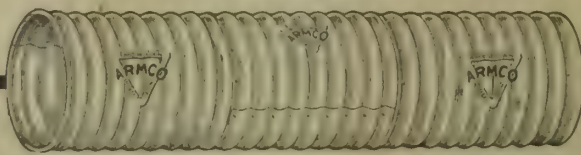
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OBSERVATIONS ON PRUNING OF THE OLIVE.

(Continued from first page.)

This condition may arrive by the end of the third growing season, or may be deferred to the fourth, fifth or later, according to the variety, soil, water, climate and system of pruning. The formative period is then practically over and pruning adapted to bearing trees should be adopted.

Pruning Bearing Trees.—At this point the theory begins to weaken. If Barry were still alive we might ask his advice.

In some countries they treat the olive as a wild tree. It receives attention only at harvest time, with the result that no trouble is experienced with over-production. In others it is cut back to the main branches once every four or five years. The yield of stove wood is excellent, but the crops irregular. In some parts of France and Italy a regular annual pruning is practiced. These parts produce the best crop.

The exact method of pruning, however, does not seem to be quite clear or uniform. In a general way, the idea is to open up the tree and preserve the vase form, so that the conditions for fruit production may be favorable over as large an area of the tree as possible. To do this, it is necessary to cut out branches and twigs wherever the tree appears too dense to allow of free penetration of the sun rays. Each branch removed should be cut off at its origin or at a point where a side branch occurs which it is desirable to leave. This applies also to small branches and twigs.

Cutting-back or shortening-in should be used with moderation. It has a tendency to produce a dense center and the growth of vigorous upright sterile shoots and gradually a high-headed tree. It should be used only where necessary to stimulate growth of a weak tree by removing fruiting wood or to prevent horizontal branches from becoming too low.

The photograph shows a tree treated according to these ideas. It is a Mission planted at Natomas in the spring of 1914 by Mr. E. K. Carnes and pruned according to his directions.

The photograph was taken in December, 1916, immediately after the tree had been pruned. It represents, therefore, the pruning of a well-grown tree at the end of the third growing season. The pruning has been limited to cutting-out or thinning of ill-placed branches and no cutting-back has been done. Such a tree is of excellent shape and may be expected to yield a good crop the coming season.

ALMONDS IN ARBUCKLE DISTRICT.

To the Editor: Is the land three miles west of Arbutle adapted to almond growing? How many trees should be planted to the acre? What are the best varieties to plant? Under favorable conditions how many pounds of nuts should each tree produce the first year of bearing? The fourth year?—W. J. G., San Francisco.

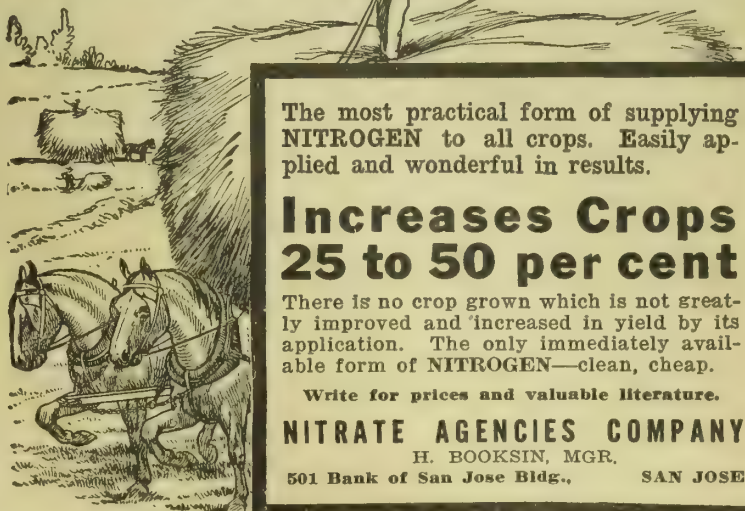
[Answered by Fred S. Schultz, Arbutle.]

Yes, the land in that district is

suitable to almond culture. I would advise planting not less than 50 or more than 60 trees to the acre. I would prefer to plant a row of Texas Prolific between two rows of Nonpareils. You should not count too much on the fourth year, although two small orchards here have made

\$100 an acre the fourth and fifth years. Five to eight pounds per tree would be good for four and five year trees. Trees in full bearing will average \$100 to \$150 per acre yearly. On account of the slope in land west of here there is practically no danger of frost.

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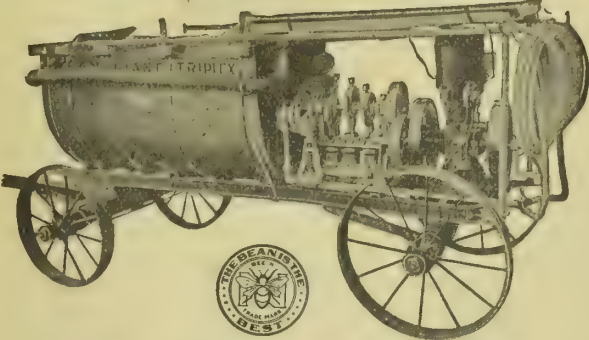
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Budding Citrus Seedlings.

[Written for Pacific Rural Press.]

When the bark slips nicely on the stocks, and when the weather is likely to be clear and warm, is the time to bud citrus seedlings, according to Randall Bros., who had last spring 11 acres of budded seedlings in the hills near Whittier. The buds ought to "take" fine when sap is flowing vigorously on warm days in February and March. H. A. Randall claimed to be able to bud an average of 1300 seedlings per day and had budded 1600 in 9 hours.

Fat buds on plump sticks are selected. Long narrow buds make it hard to close the bark evenly over them, as is very necessary. Leaf stems are left $\frac{1}{4}$ inch long when cutting bud sticks, for convenience in handling the buds.

The transverse cut on the young stock was made with the edge of the blade sloping upward, and the vertical cut made upward from that, so there would be every chance to shed rain. Buds were inserted six to eight inches above ground to help avoid gum disease, especially with lemons, for the stocks are resistant.

Having cut the bud and started it immediately, the knife point was stuck crosswise into the bark below the bud so it could be quickly shoved

to place. If any bud was dropped, it was thrown away if there were any chance of its being dirty.

A strip of waxed cloth a foot long and three-eighths inch wide was wrapped around each bud covering it unless it was so prominent the cloth might injure it. The covering prevents undesired shoots before the union is firmly made. Such shoots might rob the uniting cambiums of needed sap. Two wraps were made below the bud, letting the end of the strip project between the two. The third wrap was made above or over the bud and after another wrap or two, the job was finished by twisting the ends together. Thus the cloth also would shed water from wrap to wrap.

In about 20 days, more or less, according to weather and the consequent early starting of bud shoots, the cloth was taken off. Buds which had started to grow were in danger of having the shoots broken off.

Sprouts from the seedlings were rubbed off three or four times the first year after budding. Ground for nursery trees is changed every four years. This 11 acres was located in a grain field to avoid all possible chance of disease.

Fruit Confidence Increasing.

[Written for Pacific Rural Press.]

"The demand for deciduous nursery trees has been stronger in Northern than in Southern California," says J. S. Armstrong of Ontario. "The reason is probably the greater confidence in the future, inspired by growers' organizations. There is a much healthier feeling in all lines of fruit growing all over California than a year ago."

Walnuts and almonds and most varieties of peaches had already been pretty well cleaned out of the Armstrong Nurseries when visited Feb. 7. A good demand had come for pears, mostly from the Victorville and Antelope Valley districts. Apples and apricots had been moving only fairly well. A big call had come by wire and mail from the San Joaquin Valley for Calimyrna figs, which could not be supplied. There was a big run on Thompson grapes for the San Joaquin and inland parts

of Southern California.

Though the citrus planting season was nearly a month off, first-class trees were becoming scarce, according to Mr. Armstrong. He also noted interest in the early ripening Ascolano and Manzanillo olives on account of frost danger to later varieties in many districts. The large varieties for ripe pickles are already a reality as evidenced by the success of C. C. Graber in processing them in first-class shape.

Quite an interest is developing in avocados for commercial planting, but Mr. Armstrong would advise only the hardy varieties for valley planting where there is any danger of freezing. At least a dozen commercial varieties are showing up very well. The demand for each variety seems to be sectional, one in each district seeming to have a distinct lead in favor.

New Zealand Fruit Growers.

New Zealand has a world-reputation for making great ideas work by law. The government has enacted a law placing an annual tax of about 25 cents an acre on all fruit plantations. This money is turned over to the New Zealand Fruit Growers' Federation, Ltd., which represents all the fruit-growing associations in New Zealand.

It is estimated that the tax will produce, to commence with, some \$15,000. The principal work at the outset is to urge growers who are not already members to join an association and affiliate with the Federation. It is only by such affiliation that any fruit-grower can derive any benefit from the tax which he is compelled to pay. There are now three co-operative packing and selling companies in existence and the erec-

tion of a cold storage plant has been begun, for which the government has advanced the capital.

In order to educate the people up to the value of a fruit diet, it has been decided by the Federation to inaugurate an advertising campaign. It is also proposed to send a representative to investigate the markets of the Eastern States of America, and probably India and the Straits Settlements. The cost of this is to be borne by the tax money raised by the government.

ETTERSBURG STRAW-BERRIES.

Albert F. Etter of Ettersburg, Humboldt county, whose original descriptions of his strawberry breeding have appeared in the Pacific Rural Press for several years back,

PRUNES on Myrobolan Root ALMONDS on Bitter Almond Root CITRUS STOCK ORNAMENTAL SHADE TREES

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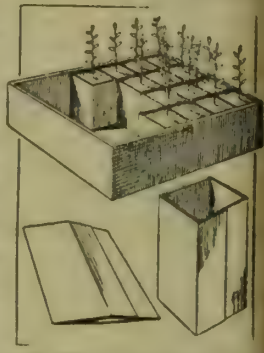
that will keep Squirrels, Rabbits and Gophers from barking your trees and give perfect protection from hot sun, sandstorms, barking in cultivation, etc. Tell us your pest and we will tell you what kind of a wrap to use. We make a number of kinds and can save every tree for you from pests.

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has issued a neat pamphlet, postal card size, describing the origin and characters of his best varieties and what growers have found interesting and valuable in them. This publication should receive careful consideration by all berry growers.

Growers of oranges must learn to remove all oil pots, cans, etc., entirely from the orchard for the summer, says G. P. Von Stein, who notes the damage done by leaking from cans set under the trees.

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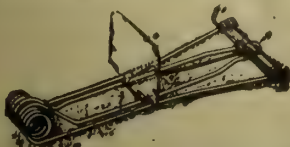
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SCHOOL PRINCIPAL MAY DRAW TWO SALARIES.

To the Editor: Please advise me if it is lawful or unlawful for one school principal to draw two salaries, one from the State as high school and the other from the county as grammar school. Both schools are separated by one block. The other principal is teaching eighth grade. This one is held as assistant. The two assistants that held the position the last four years showed that they were qualified enough to teach high school themselves, for they hold that position now.

The principal that draws two salaries has a contract with the grammar school trustees for three years at a time, and is paid about \$1200 per year. He gets about \$300 per month including the high school. This school has five trustees, not including the grammar school trustees. There are nine teachers in the grammar school, including the cooking teacher. These get only medium wages.—J. A. C., Newman.

[Answered by Edward Hyatt, Supt. Public Instruction, State of Cal. Sacramento.]

Relative to the principal of a high school acting as principal of a grammar school, permit me to state that under the law the board of school trustees of a grammar school district in which a high school is located may select the principal of the high school as the principal of the grammar school. Such board has the power of fixing the salary to be paid such principal—taking into consideration his salary as principal of the high school.

This is the common custom in many districts. Some of the cities even pay part of the salary of the teacher or principal out of high school money and part of it out of grammar school money, the amount paid from each fund depending upon the amount of work done for each school.

SAVED TWO IRRIGATIONS OF MILO.

[Written for Pacific Rural Press.]

That there would be seven weeks of water shortage after planting his milo last year was known to S. G. Haskell of Imperial Valley; and he prepared for it. The result was about 76 tons of threshed corn from 45 acres. A piece next to his and on the same kind of ground produced not over half a ton per acre, but lots of weeds.

The ground was plowed about six inches deep the last of June and flooded. The water was turned off as soon as it had gotten across the checks. A smoother was run over it for a dust mulch. It was disked with the disk lapping half each time and going three inches deep. Then it was smoothed again. Three teams were used at once and the ground was planted and harrowed both ways right after the smoothing. This put the seed in finely cultivated moist earth under a fine dust mulch. It was never cultivated again; but it grew to three feet in height before the first irrigation, and never wilted. Generally about four irrigations are given, according to Mr. Haskell, but this milo got only one more when it was headed and starting to fill. The fine seed bed not only made the good crop but saved the cost of two irrigations.

The water was applied by flooding, 150 miner's inches covering about 30 acres in a day.

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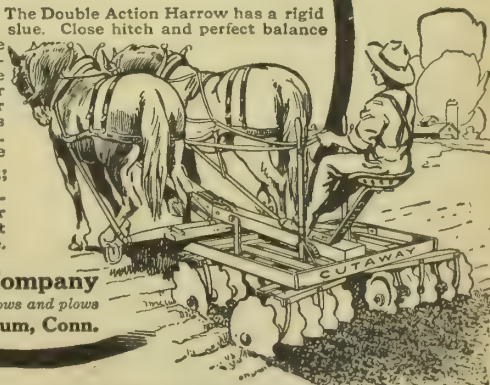
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Winter Growing Alfalfa.

Many dairymen are short of feed now, while a few have thrifty fields of winter-grown Peruvian alfalfa, which is being pastured to good advantage in Imperial Valley.

A winter-growing forage crop would just now be almost a cow-saver for the many dairymen of Imperial valley whose feed played out about January, largely because of the water shortage last year. One of the leading dairymen grew a crop for silage; but it didn't fill the silo; and late in January he was buying \$20 alfalfa from one of the very few so fortunately situated in this Valley of Alfalfa as to have some to sell this season.

Due to the scant winter rainfall here, there are seldom more than two or three weeks in a year when alfalfa fields are too soft to pasture, except after irrigations. Since the common alfalfa generally grows very little through the winter, it cannot solve the problem.

But there is an alfalfa, the Peruvian, which does grow even in the present winter, which one of the pioneers of the Valley declares has been the most continuously cold that he has experienced.

Two kinds of Peruvian alfalfa are recognized, though it often makes an expert guess a little to tell one from the other when shown a single stalk.

Many fields of the so-called smooth Peruvian have been visited by the writer the past January; and the growth has been uniformly better than any except one or two very special fields of the common Chilean.

Very little of the "hairy" Peruvian has been grown long enough to make a test. Sixty acres of this variety were planted by C. C. Bowles two years ago.

Not a very good stand was obtained, partly because it was sown for seed and intended to be thin, and partly because the land had been used for ostrich pasture and the birds had puddled the "hard" soil by constant travel, worse than cattle would have done it. Part of this, last fall, was cut for seed, winrowed at once, and stacked for threshing. Part was not mowed because rainy weather came before the press of other work permitted. Here, the field is brown with the ripened tips and seed pods near knee-high; and the young growth of the winter is almost as tall amongst it. On the part where the poorest stand was obtained, everything was mowed about New Year's, and the seed left on the ground to get a better stand. Here the new growth is about eight inches

tall as a general average this January 30.

Across the fence are a few checks of smooth Peruvian in which many bunches of hairy Peruvian stand out distinctly as seen at a distance, not only by their much greater growth, but also by the silvery sheen presented by the sunlight on the fuzzy white coats of the leaves and upper parts of stems. Examined closer, the stems are seen to be clothed almost like an overcoat with the many-leaved laterals which have grown from every joint except the lowest one.

The leaves are more slender than the smooth Peruvian, which looks like a good cross between the hairy Peruvian and the common variety. On the hairy variety, they seem to have a tendency to fold their upper surfaces together, in cold weather at least, thus exposing the hairy under surfaces to the weather. The furry coat extends downward for several joints, but the older parts of stems and the lower leaves do not seem to be hairy.

This fuzz, according to Mr. Bowles, is a great protection for the exposed stems and leaves against frost. The moisture gathers and freezes on it without injurious contact with the stems except in severe weather such as has visited Imperial Valley the past winter.

In these tall clumps of the hairy variety among the smooth, we saw some in which stalks had been frosted especially on top; and some where side stalks unprotected had been killed down. But the smooth variety alongside had been much worse frosted.

This field, Mr. Bowles said, had been pastured close by Roy Benton's cattle until November 1. We found plenty of clumps in which the stalks were 20 inches long, and one stalk which was 28 inches long. The common Chilean, from which the cattle had been removed before taking them from the Peruvian, was scarcely shoetop deep.

The practice is to pasture the Peruvian in winter, make the first cutting in March or April into hay, let it go to seed in about 90 days, cut it about July 1, let it go to seed again, cutting about Oct. 1, and pasturing again. The winter pasture, says Mr. Bowles, brings about \$2.50 per head per acre per month in winter, but only half that much in summer, adding to the desirability of a winter-growing forage. The threshed hay is said to be worth about \$12.50 per ton. Ordinary hay is selling at \$20 on the ranch.

Besides the fields of smooth Peruvian and common Chilean, Mr. Bowles planted 140 acres of hairy Peruvian about Dec. 1, 1916. This had only a few leaves when cold weather came, but stood it in fine shape, according to Mr. Bowles. The writer did not see it. All of the common alfalfa is to be plowed up, planted to corn or cotton, and sown in the fall to hairy Peruvian.

The Butte County Spring Festival is to be held May 21 to 26 at Chico.



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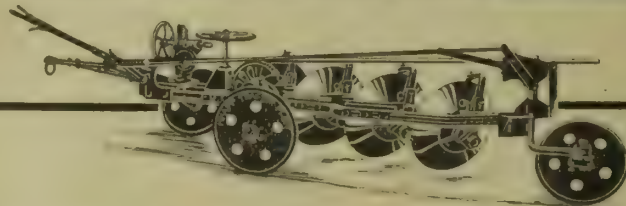
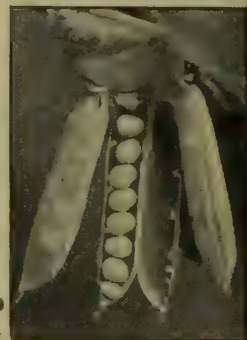
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FACTS**

Proposal to Define "Commission Merchants"

Following is the full text of a measure introduced by Senator Duncan in the State Senate on January 15, 1917, for the purpose of establishing more exactly the status and liabilities of persons, firms, etc., purporting to carry on the business of "commission merchants." It was referred to the Committee on Agriculture:

AN ACT

Defining commission merchants and consignors: providing for filing of bond and certificates showing names of persons doing business or advertising as commission merchants, and providing penalties for the violation of the requirements herein contained.

The people of the State of California do enact as follows:

Section 1. The term "commission merchant" as used herein shall be deemed to include any person, firm, corporation, partnership, association or copartnership doing, transacting, or carrying on, or advertising either by means of printing or writing through newspapers, cards, circulars, or letter head as carrying on, the business of commission merchant, as that term is generally understood, or as selling or receiving for the purpose of sale, produce, goods, or other personal property on commission, or by which he receives any part of the proceeds of the sale of the property. The term consignor includes any person, firm, partnership, corporation, or association, shipping or forwarding produce, foods, or other property to a commission merchant to be sold by the latter on commission, or under an agreement expressed or implied, by which the latter is to retain a portion of the proceeds of the property sold.

Sec. 2. No commission merchant shall receive, sell, or attempt to sell on consignment or commission, or in any manner in which he retains any portion of the money for which any personal property is sold, any produce, merchandise or other personal property unless said commission merchant shall first file with the Secretary of State a statement showing in detail whether said commission merchant is a private individual, corporation, partnership, or association, and if a corporation, the amount of capital stock, the amount actually subscribed, amount actually paid in, the names and residence of each of the stockholders, together with the amount of stock held by each, the principal place of business of said corporation, and if a partnership or association, the names and residence of each person composing the same, together with the interest or share which each person holds in said partnership or association, or if the said commission merchant be but one person, then the name and residence of such person shall be set forth in full, but in each instance the name under which such commission merchant transacts business shall be set forth in said certificate. Said certificate in each instance shall be verified by the oath of each person having an interest in the business of said commission merchant; provided, that in the case of a corporation such certificate may be verified by the oaths of the president or vice president and secretary of such corporation, but in such case, such statement must show the names and address of each holder of the capital stock in such corporation as shown by the books thereof. Said certificate shall be accompanied by a bond to be approved by the Secretary of State in the sum of five thousand dollars payable to the people of the State of California, conditioned that said commission merchant will conduct his business strictly in accordance with the terms of this act, and well and truly account for and promptly pay to any and all persons consigning produce or other personal property to such commission merchant, the proceeds of the sale of such produce or personal property less his commissions thereon. Any person suffering loss or damage through the acts or omissions of said commission merchant may recover upon said bond the amount of damage sustained by him.

Sec. 3. Any commission merchant violating any of the provisions of this act shall be deemed to be guilty of a misdemeanor and upon the conviction thereof shall be punished by a fine of not less than fifty dollars nor more than three hundred dollars, or by imprisonment in the county jail for not exceeding six months, or by both such fine and imprisonment; provided, that nothing herein shall be deemed to prevent or bar the prosecution of any commission merchant or other person for embezzlement or for any other felony or misdemeanor.

A GREAT BIRD FARM.

Under the will of the late Lord Lucas, land and premises in Norfolk, England, have been bequeathed to the Honorable Ivor Grenfell. This property, of 3000 acres, was acquired ten years ago by Lord Lucas, Viscount Grey, Honorable E. S. Montague and B. Russell, all keenly interested in bird life, in order to provide protection for rarer kinds of birds. Elaborate precautions have been taken to preserve from disturbance some young birds of a very rare species, and careful study is made of the habits of the colony of birds on the estate by the head keeper and others in the employ of these bird lovers.

THE QUAIL A SONG BIRD.

By an almost unanimous vote the Ohio House of Representatives has passed a bill to put quail on the song bird list and prevent hunters from killing them. The measure now goes to the Senate. Under existing laws quail may not be killed until 1920.

Cotton growing is to be tried in Butte county.

20-35 YUBA

BALL TREAD TRACTORS

Live and Work
when machines
less thoroughly
well made are
worn out.

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DEPARTMENT A-3
433 CALIFORNIA ST.
SAN FRANCISCO, CALIF

FARM VALUES AND RAILROADS

Transportation Problem Must be
Solved Nationally in Order to
Assure Agricultural Prosperity.

THE greatest industry of the United States is farming. Next to that comes transportation.

Efficient transportation is essential to the continued welfare and business progress of the nation. To the farmer it means wider markets and better prices for his crops.

Speaking for 90 per cent of the railroad mileage of the country we invite your co-operation in the solution of the railroad problem to that end.

Make Regulation Efficient

There is no question that public regulation of transportation has come to stay. The railroads accept it. They ask only that such regulation be made efficient. They ask that the functions properly subject to public supervision—incorporation, the issuance of securities, the making of rates—be placed under the direction of a single responsible national body such as the Interstate Commerce Commission, with regional sub-commissions, in order that regulation may be kept close to the people. They ask that such regulation be so administered as to permit the railroads to earn a living return, to attract new capital and to make the improvements and extensions necessary to enable them to serve the American people fairly and efficiently.

In the Federal Reserve and Rural Credit Banking Systems the operation of regional divisions under Federal supervision is well illustrated. The railroads seek a similar solution of their problem.

Commerce Is Nation Wide

The farmer wants free trade among the States.

Commerce in farm products is not confined to State lines. It is nation wide. Its regulation should also be national. The fundamental State right is the right of each State to be protected against discriminations by other States such as exist today. Every barrier that a State erects to the free movement of commerce across its borders limits the farmer's market, makes it easier for speculators to control products and depress prices, and tends to increase the cost of what the farmer has to buy.

The railroads cannot serve 49 masters—48 States and the Nation—and serve efficiently. The present system of multiple and conflicting regulation is wasteful and destructive.

In the interest of all, regulation should be in behalf of all the States. We invite discussion of this question and shall be glad to answer questions and to supply information on request.

This is the first of several brief talks on this subject.

RAILWAY EXECUTIVES' ADVISORY COMMITTEE

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GOPHER TRAP**
Larger than runaway;
jaws pull rodent in;
catches large or small gopher and holds it.
Farmers say it's worth dozen other makes.
Big sales. Price 50c. If not at your dealer's will send
it to you postpaid: 2 for 95c; 6 for \$2.70; 12 for \$5.10.
Money back if you are not satisfied. Free circulars.
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This Big
Land-Clearing
Book—NOW

Men of America—readers of this paper! I have been advertising my land clearing system for 15 years. Starting with a tiny little shop, Miles Bateman and I—two workmen—have built up the greatest business of its kind in the world. There are more Hercules Machines in the field now making money for their owners than all other kinds put together.

Why? Write and See

Right now we have a special new proposition to make on a wonderful new machine. It will make money for you. Write and see what it is.

We will stake our 25 year record on its being the best land clearing offer ever made.

HERCULES

Triple-Power, Portable
Stump Puller

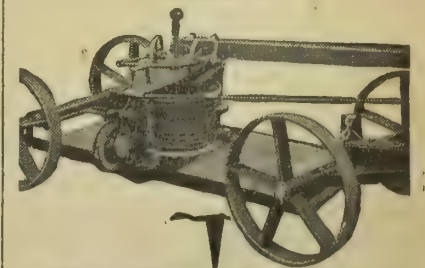
Unlimited
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Biggest stump pulled in 3 to 5 minutes at a cost of 3c to 5c each. Land cleared fast and cheap by the Hercules method. Clears an acre of land a day. Makes your stump land money land. 30 days' free trial.

Special Proposition Now

Get it. Low price to first buyers of our wonderful new machine backed by our Unlimited Guarantee. Get our new book and special low price offer now. Don't put it off. Drop a postal today.

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Hercules Hand Power—Pulls 120,000 lbs.
Ask about it.



Rush Coupon Now for Low Prices

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Gentlemen—Please send me free book about the All-Steel, Triple-Power Stump Puller. Also your 30-day free trial and low-price-to-first-buyers proposition.

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Town _____
State _____ R.F.D. _____

Questions on Compensation Insurance.

[Written for Pacific Rural Press by A. J. Pillsbury, Chairman Industrial Accident Commission.]

In my answer to W. T. J. Shawmut, published in your issue of January 13th, I made an error in stating that insurance against the risk of compensation was figured on the wage of farm labor exclusive of board. This was so originally, but the rate-making powers afterwards changed the rule and now almost uniformly add \$16.00 per month to the monthly wage for board and lodging in order to get at the real value paid for the services rendered. I regret this error, but had not been informed of the change in the rule.

Minimum Premiums Charged.—No matter how small the policy it is necessary to have the payroll verified, and there is a certain minimum cost for putting a policy through the entire process from the application for it until the policy is issued, the premium collected, the payroll audited, and the final account squared at the end of the year. This minimum, so far as the Compensation Insurance Fund is concerned, is \$6.00. Some of the other insurance carriers charge \$10.00. If the premium at \$1.50 per hundred of payroll would amount to \$6.00 or more, then this minimum is not considered at all, but if the premium on the payroll amounts to less than \$6.00 then \$6.00 will be charged for the policy. That is, no policy will be sold for less than \$6.00, but the \$6.00 will not be an additional charge if the premium for the year would amount to more than \$6.00.

It is not necessary, when a policy is taken out, for a farmer to know just how much help he is going to hire for the coming year. With his application for a policy he will file a statement of the anticipated payroll and will pay for the policy on the basis of what he anticipates that he will hire during the year, but at the end of the year, when he foots up his total wage payments and certifies the same to the insurance carrier, the account will be adjusted to this final report as audited by the payroll auditor. If he has employed less help than he estimated, the excess premium will be returned to him. If he has employed more help than he anticipated he will pay the difference between what he did pay when he got his policy and what he should pay on the total payroll.

Premiums Based on Payroll.—We are asked by another subscriber how it will be with a man who employs help occasionally; perhaps some in haying time and some in the fruit season and some in the harvest, and during the rest of the time one does his own work. This makes no difference. All he has to do is to keep a careful account of the help that he does employ during the year and account for it to the insurance carrier

at the end of the year. The only help he hires at all during the year may be within a period of two or three weeks, but, as stated in my former article, whether a farmer hires one man for twelve months or twelve men for one month makes no difference; he will pay so much on the hundred of payroll for insurance protection. So, if a farmer needs somebody for a few days he simply adds the amount paid out for this extra help to his payroll record and is covered by his insurance.

Just here I wish to call the attention of farmers to the fact that they may, if they wish, insure themselves and the members of their own families, together with other hired help, and in Bavaria at least 75 per cent of all the claims paid for injury to persons engaged in agriculture are paid to the farmers themselves or members of their families, but if the farmer intends to insure himself or a member of his family he must so notify the insurance carrier at the time that he makes his application for insurance and must state the wage value which he places upon each such person he desires to have insured. Of course this wage estimate should be in accordance with what he himself or the working members of his family would probably be able to earn if they were seeking employment in an open labor market. I believe this to be a prudent thing to do, for, taking the State at large, there are probably as many farmers as farm laborers injured if we include the working members of the farmer's family; but remember that such members of the family, and the farmer himself, can scarcely be included if an accident happens unless the insurance carrier was informed of all the facts when the insurance policy was sold, although it has sometimes been possible to prove that members of the family were working for wages and compensation has been allowed in such cases. A case testing this issue is now before the Supreme Court, and the only safe way is to state fully in the application for insurance just what members of the family it is proposed to have covered.

WILL SQUIRRELS EAT TOMATOES?

To the Editor: Will ground squirrels attack tomatoes? I wish to plant tomatoes on very good sandy loam along a creek adjoining pasture land, where ground squirrels are plentiful in spite of governmental inspection, and they come down after green feed gives out and may get at my tomatoes. Two years ago they almost ruined a good crop of potatoes in the same place.—J. C. W., Concord.

[This passes our observation. Will some reader kindly answer?—Eds.]

UPLAND RICE IN THE SOUTH.

To the Editor: Referring to an inquiry in the Rural Press of January 20, would say, in the line of information sought, that an upland variety of rice is well known in the South. I have seen it growing on high, sandy land with a clay subsoil of one and one-half to three feet deep, without irrigation. Experimenting would be necessary here, as the climate is less humid. The J. Steckler Seed Co., New Orleans, has the seed and would send catalog containing directions for planting.

San Francisco.

G. C. A.

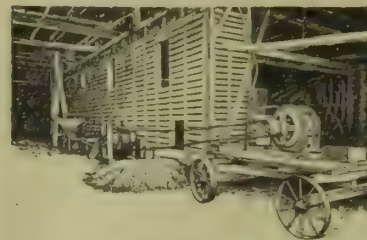


A Pennsylvania Farmer Says Concerning Electric Motors on His Farm

"A one-horse power motor is located in the spring house for separating milk, churning butter, turning a grinding stone, etc.

"In the house, my wife has a 1/6-horse power motor for running a washing machine. This motor can be attached to any lamp socket.

"In the barn a 15-horse power motor mounted on a little truck may be moved to any part of the barn or barnyard for grinding feed, baling hay and threshing grain. By extending the cable we have used this motor 400 feet from the barn."



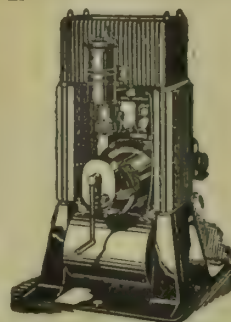
This letter suggests equally profitable installations around your house and barns. The General Electric Company manufactures all sizes of electric motors for farm use. Information will be gladly furnished by your lighting company or our nearest motor agency.

General Electric Company

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Uni-Lectric
GASOLINE-ELECTRIC UNIT
LIGHTING SYSTEM

Electricity for Farm Homes

At one-third cost of juice from Power Company (this includes interest on cost of plant). It is the simplest and most economical plant on the market.

No Batteries - No Switchboard - No Rheostat

Will operate 50 lights 7 1/2 hours for 11c. Will also operate electric fans, irons, small motors, etc. If your buildings are not wired, send us plans and we will give you full instructions so that you can wire them yourselves. Material furnished at lowest cost.

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104 Clay Street,

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SEEDS Planting Time is Here

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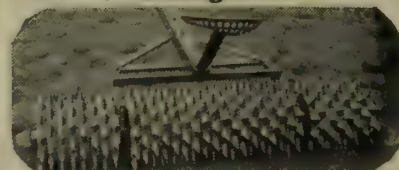
With "HINTS on GARDENING"

Morris & Snow Seed Co.

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The Cunningham Land Roller and Pulverizer



Makes a Perfect Seed Bed—Stops Evaporation—Preserves Moisture—The Best Clod Crusher ever made for Farmer, Orchardist, Vineyardist, Nurseryman and Seedsman.

Made in All Sizes
Write for Circular

Manufactured and Sold
Exclusively by

Spalding-Robbins Disc Plow Co.

625 Market St.,
SAN FRANCISCO.

Spring Harrowing is Drought Protection.

[Written for Pacific Rural Press by G. W. Hendry, Instructor in Agronomy, University Farm.]

It is possible that California may experience another dry spring. Already the seasonal rainfall for Northern California is from 4 to 11 inches below normal and the prospect for a good grain crop is becoming more dubious each day. Grain seeded in December and January is in good condition at this time and is not yet suffering, but the moisture in the ground is so limited that unless spring rains come to its assistance the crop will certainly suffer for water in May and June. February-planted grain will be even more dependent upon spring rain and will require considerably more of it.

Harrowing the Grain Field.—The conservation of the present limited supply of ground moisture is the next best thing to having spring rains. Harrowing of young grain at this season of the year will result in breaking the crust between the plants, and holding in the ground for the use of the crop soil moisture equivalent to two or more inches of rainfall. This should be done while the soil is sufficiently moist to pulverize well. If delayed until the soil becomes hard and dry to a depth of several inches, a good surface mulch can not be established, and the work would result in much damage to the crop. The success of the operation depends upon doing it when the soil is in condition to work. If rain comes after harrowing it will be necessary to repeat the work. Drilled grain stands harrowing better than broadcasted grain, but the harrowing should be done at right angles to the direction of drilling. Harrowing is more effective on level, well-prepared ground than on rough, cloddy land.

When to Harrow.—Very young grain, especially if sown broadcast, may be damaged by harrowing, also grain which has started to joint or shoot should not be harrowed. Very little damage, however, will result if the work is done while the plants are in the rosette stage.

How to Harrow.—The ordinary wooden frame spike-tooth harrow does the work well, but if the plants are very young a lighter harrow with the teeth slanted backwards may be better. The corrugated roller is recommended for very young stands and may give good results if the soil is mellow enough to pulverize easily, but would be less effective on hard dry ground. The object of the work is to mulch the surface soil, and any means of accomplishing this without damaging the plants is approved.

Practice and Poetry.—Spring harrowing of grain has been successfully practiced on the University Farm at Davis, where it is believed that the operation is a good one for dry seasons, and results in holding in the ground for the use of the crop moisture which would otherwise escape into the atmosphere and be lost. To clearly illustrate this principle we must relate the true fable of the California farmer whose land was crossed by the railway, and who during a dry spring, fearing for the safety of his grain, decided to harrow out a twenty-foot strip of his field adjacent to the right of way as

a precaution against fire. This he did in the spring while the grain was still young, traversing the ground many times with his harrow, and returned home rejoicing that he had succeeded in protecting his crop by the destruction of this twenty-foot strip of grain.

But returning to his field in June for harvest he was astonished beyond measure to find that the twenty-foot

fire line which he had expected to find fallow had produced an abundant crop of grain, yielding far in excess of the rest of the field. And as he gazed thoughtfully upon the result of his work he was heard to say:

During seasons of scant rain
We should harrow our grain.

Because of a disagreement as to dates the County Fair Ass'n of California has broken up. This will result, it is said, in the forming of a northern and a southern fair association.

IRON AGE

GARDEN TOOLS

Answer the gardener's big questions:
How can I grow plenty of fresh vegetables with my limited time?
How can I avoid backache and drudgery? Use

IRON AGE Wheel Hoes and Drills

Do the work ten times faster than the old-fashioned tools. A woman, boy or girl can push one. 38 combinations—easily adjusted. Light, strong and durable. Prices, \$3.25 to \$16.00. Will help you to cut the high cost of living.

Write us for free booklet today.

No. 1 Double or Single Wheel Hoe



Bateman Mfg. Co., Box 390, Crenshaw, N. J.
KANOUSE & FOOTE, General Agents
FIRST & JACKSON STREETS, OAKLAND, CAL.



There Are Dollars In Your Subsoil. Get Them Out!

The value of your land can be greatly increased by means of subsoiling. Beneath the surface soil of your fields, which has been thoroughly stirred by your plow and kept fertile by the rotation of crops, there lies a subsoil that you have never touched.

This subsoil is probably either one of two things—rich soil of which you should be getting the benefit, or a hardpan which is obstructing drainage, deforming the roots of plants and trees, and in other ways lessening the value of your land. In either case it should be broken up by means of

HERCULES DYNAMITE

If the underlying soil is fertile and rich so much the better. Subsoiling with Hercules Dynamite will stir it up, bring part of it to the surface where it will be at the disposal of your crops, loosen it so that the roots can penetrate it easily and get out of it all the good there is in it.

On the other hand, if the subsoil be a hard, impervious layer beneath the cultivated soil it is imperative that it be broken up in order to facilitate drainage, give roots a chance to spread naturally, and get out of it the mineral food it contains.

By means of subsoiling the yield of thousands of acres

in this country has been increased anywhere from 10% to 200%, depending on the crop and local conditions. Soil that has been utterly unproductive has been made fertile.

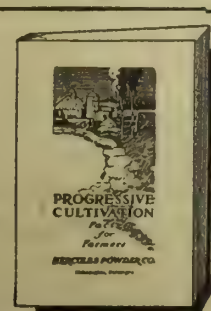
If you have not looked into this question you should. As a first step write for our book, "Progressive Cultivation." It will be sent free on request. It not only discusses in detail the matter of subsoiling with dynamite but also tree planting, irrigation, drainage work, rock and stump blasting, etc.

You will find it worth reading. Send for your copy today. Please use the coupon below.

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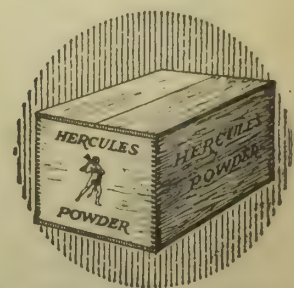
Hercules Powder Co.,
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Gentlemen:—Please send me a copy of "Progressive Cultivation".

I am interested in dynamite for.....

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General Agricultural Review.

GRAINS AND FIELD CROPS.

February alfalfa irrigation was indulged in on the Orland project this year.

An unusual acreage of potatoes is being planted in Fresno county this spring.

Heavy plantings of asparagus are being made on the river islands near Rio Vista.

W. A. Collins of Brawley expects to ship asparagus to Chicago this month.

Imperial Valley people are getting ground ready for much more cotton than last year.

One Louisiana rice milling company used 254 carloads of California rice and did not reject any.

Rice straw will be used for bedding at the Butte County Fair this year. About 40 tons will be required.

Ventura Lima bean growers have voted in favor of including small-bean growers in the State Association.

It is reported that a Stanislaus county shipper has disposed of 200,000 pounds of Mexican beans to a Wisconsin firm.

Two large vegetable and fruit packing plants are to begin operations this season at San Leandro, Alameda county.

Though rice requires more water than any other commercial crop, Imperial Valley has a 240-acre field of the Italian variety this season.

Only the high cost of seed will stand in the way of very heavy potato planting this spring. At any rate a large acreage will be planted.

Lindsey Bros. of Ripon are putting in 50 acres of American Wonder potatoes to raise for certified seed under the State Seed Potato Law.

Siam rice prices have been advanced by importers due to increased ocean freight rates. This ought to give a better tone to the California rice market.

A carload of fancy potatoes was recently shipped to Louisiana from Carmel Valley, Monterey county. Each sack was bedded in straw, so the report goes.

L. C. Johnson of Pomona expects to profit highly by the frost which killed the early cabbage crop in Florida. He has 500,000 thrifty cabbage plants growing in field.

Reports from Oxnard say that sugar beet planting is being pushed rapidly in that section and the acreage will be the largest ever planted. About 10,000 acres have been planted so far.

Only about 1,000 bales of cotton on the American side and 4,000 on the Mexican side of Imperial Valley remained to be ginned Feb. 14. The winter has been exceptionally favorable for picking and for good quality staple.

The grain acreage in Yolo and Colusa counties is easily 50 per cent greater than to the same time last year, due to the long dry period permitting field work, writes our representative in that district.

The California Lima Bean Growers' Ass'n contract for 1917 provides that the grower and not the Ass'n is to be responsible to the buyer, and that two cents per pound for all uncleaned beans and seed not delivered by members shall be paid to the Ass'n.

Grain reports from our field representatives: $\frac{3}{4}$ barley crop in ground in Stanislaus, general depression on account of dry weather, farmers well caught up with work; lots of grain sowed in Fresno county awaiting the rain which has come; large acreage of barley planted in Brawley district of Imperial county.

Two hundred and fifty acres of peas have been planted by Lindsey Bros. of Stanislaus county and con-

tracted to the Pacific Pea Packing Co. to be delivered by truck to Oakdale. Two 250-ton silos are to be constructed on the ranch for the vines. Beans will follow the peas and potatoes, all being watered by subirrigation.

The Turlock cannery has contracted for 800 tons of tomatoes and is offering to sign five- to ten-year contracts for more. They also want asparagus. It is hoped that the cannery may be operated eight or ten months per year instead of two or three as heretofore. Workers' houses are being built and grounds beautified.

T. P. Daly, manager of the Cudahy ranch at Hechicera, Mexico, who was in Los Angeles last week, says every acre of the ranch will be planted to cotton this year. "We had in 2,000 acres in cotton last year and have been clearing the land as fast as possible since the last crop was harvested so as to increase the acreage to cotton this year," he said.

DECIDUOUS FRUITS.

Sugar prunes are being planted in the Gilroy district where French prune nursery stock is reported scarce.

Pajaro Valley dried apples brought more money last year than since 1913. Prices were up to 7 $\frac{1}{4}$ cents per pound at one time.

At the annual meeting of the Sebastopol Berry Growers Inc., held last week, it was stated that the gross business of the year amounted to \$315,000 and that the profits were approximately \$5,600. The old board of directors was elected.

About 9000 tons of the 1916 dried peach crop has been disposed of by the Cal. Peach Growers, Inc., and the remaining 14,000 tons are expected to go before next crop comes in. This will be a great step; for the holdover has held prices down year after year.

The organization of the fruit growers of the central valley counties into the Valley Fruit Growers' Ass'n was perfected at a mass meeting of over 800 growers in Fresno recently. Its object is principally to have a hand in legislative matters or other problems of a general nature.

The United States leads the world in the export of fruit, according to statistics just published in U. S. Dept. Agr. Bul. 483. The fruit exports from this country were valued at \$18,505,000 in 1910 and \$34,230,000 in 1915. Fresh and dried apples comprised one-third of the value of these exports.

The first step in the advertising campaign of the Cal. Peach Growers, Inc., was taken last week by the mailing of 5,000 letters to growers suggesting that they send a five-pound carton of peeled peaches to friends outside of the State. The association agrees to take care of all such orders on receipt of \$1 or will charge the dollar to the member's account.

J. B. Inderrieden, head of one of the large importing and fruit-packing companies of Chicago, says the importing of dried fruit from abroad is going to be the smallest in the history of the trade next fall. This should be good news to California, as we produce the bulk of dried fruit used in this country and with any kind of a crop California fruit men should reap a big profit.

CITRUS, NUTS, SEMI-TROPICAL.

Contra Costa almond orchards are abloom.

A 20-acre grove near Upland sold for \$40,000 recently.

Figs and almonds are the favorites in Merced orchard planting this season.

From the Lindsay district 2407

Surface Irrigation Pipe

Made on improved lines by special machinery.

Riveted Steel Water Pipe

All descriptions. Scientifically made. Properly coated.

Galvanized Corrugated Culverts

Made of "Western" Metal—the Best.

Steel Fence With Self-Anchoring Steel Posts

TANKS

All Sizes and Kinds in Steel.

Water Well Casing

Write us before you buy.
Our Bulletin contains full information.

Western Pipe & Steel Co.

OF CALIFORNIA.

4758 N. Broadway
LOS ANGELES

444 Market St.
SAN FRANCISCO

Olive Seedlings for Budding

We offer for immediate or later delivery, 100,000 Picholine Olive Seedlings Nursery Grown from seed, one year old, and excellent stock for lining out for building. Planters will soon demand Budded Olives and not trees grown from cuttings. We are able to supply all demands for these seedlings at reasonable prices, and will be pleased to mail samples. Also have surplus in Almond, Plum, and Mission Olives.

THE MCGHEE WHOLESALE NURSERIES

Loomis, Placer Co., Cal.

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Growers of Reliable Nursery Stock.

6000 TILTON APRICOTS, Best Stock, 4 to 6 ft. Well Rooted.
Make us an Offer.

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Hart & Barber Avocado Co.

Growers of the highest grade budded trees in commercial quantities. Thirty varieties. All field-grown stock. Our years of experience will be of great value to those considering a spring planting. Come to our nurseries and see the wonderful growth of our trees.

NORTH WHITTIER HEIGHTS, on BOULEVARD bet. PUENTE and WHITTIER.
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ALFALFA LAND

FOR DAIRYING.

Also first-class Orchard Land,
10 acres and up.

Brentwood Irrigated Farms

in Contra Costa County,
63 miles from San Francisco.
Easy terms of payment.
For Prices, Etc., Address

BALFOUR, GUTHRIE & CO.

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Strawberry Plants

Improved Magoon Strain from the
Famous Santa Cruz District.

Yield over \$200 per acre more than Oregon plants the first year. Limited quantity only of surplus planting stock, \$6.50 per M; 75 cents per hundred.
C. C. KENNEDY, Capitola, Cal.

FRUIT TREESTOCKS

APPLE SEEDLINGS—
Am. Grown and Imported.
CHERRY SEEDLINGS—
Mahaleb and Mazzard.
MYROBOLAN
PEACH SEEDLINGS—
PEAR SEEDLINGS—
French (Am. Grown & Imported)
Japan and Kieffer

QUINCE STOCKS
ROSE STOCKS—Canina and Multiflora.
GRAFTS—Apple and Pear. Any Style.
GENERAL ASSORTMENT

OF NURSERY STOCK
We have some Japan and Kieffer Pear Seedlings at San Jose, Cal., which we are offering at special prices.
Send us your list for prices. We will have several more cars to California.

SHENANDOAH NURSERIES.

D. S. LAKE, Pres.
Shenandoah, Iowa.

PREPAID for \$1.00

ANYWHERE IN CALIFORNIA.
4 Quince Trees, 4 ft. All different.
10 Figs; small sizes. All different.
5 Assorted Fruit Trees, 3-4 ft.
All different.

DEPT. 3,
PIONEER NURSERY, Monrovia, Cal.

cars of oranges had been shipped up to Feb. 12.

One ship took a complete cargo of 2,500 tons of figs from Portugal to New York last season.

Florida orange shipments are about past. It is said that over 10,000 carloads of their oranges were frosted. Probably this is exaggerated.

Several hundred acres will be planted to figs this spring on the Bullard tract near Fresno. Teams and men are now leveling the land and digging and blasting holes.

The Gillette Ranch of Tulare county shipped 10½ cars of citrus fruit after the freezes this year, most of it under the Sunkist brand. Very few frozen fruits were found.

Reports from Pomona say that land transactions in that section have shown more life the past sixty days than any time since 1912. Cash sales of citrus groves are not of infrequent occurrence.

The Cal. Walnut Growers' Ass'n handled 5 per cent more of the crop in 1916 than in 1915, and sold them for \$376,295 more than ever before, in spite of 36,800,000 pounds of walnuts imported to U. S. last year.

Citrus fruit shipments from Riverside are reported to be small, only 28 cars having been sent out for the week ending January 20. Despite this fact the season's shipments are nearly 200 cars ahead of last year's shipments at the same time.

H. A. Spies, Deputy Horticultural Commissioner of the Upland district, is urging orange growers to disinfect their picking bags and other equipment as the best means of eradicating the mealy bug that has got such a foothold in that section.

At a meeting of the stockholders of the Santa Ana Valley Walnut Growers' Association last week it was decided that in the future the Association would market their culls through the California Walnut Growers' Association. They have heretofore been sold independently.

A grocer of Pasadena, after endorsing Imperial Valley dates, wrote to I. B. Suryich of the Imperial Valley Experiment Farm saying he would like to get in touch with a good grower, as he has established a good Eastern outlet for California dates, and at the right price could market almost any quantity.

The Orange County Fruit Growers' Exchange is supporting an organization for co-operative fumigation. The 2000 acres required, had been signed up according to Horticultural Commissioner Roy K. Bishop, previous to a meeting February 9, when the committee was directed to draw up the articles of association.

Citrus spraying with lime-sulphur 1 to 20 for winter use against red spider, does no injury according to Orange County Horticultural Commissioner Roy K. Bishop, if there is no new growth and if very warm weather does not follow within two or three days. When used, it is recommended that the trunks and main limbs also be sprayed to clean off moss, etc.

The citrus growers' meeting at the National Orange Show, San Bernardino, Feb. 23, will be addressed by Dr. H. J. Webber of the Citrus Experiment Station, Riverside, W. H. Fleet of the Sespe Rancho, Ventura county; J. P. Englehart, Glendora; Prof. R. S. Vaile of Riverside; F. O. Popenoe of Altadena, and Dr. Elwood Mead of the University of California Agricultural College, Berkeley.

GRAPES.

The 1916 Board of Directors of the Cal. Associated Raisin Co. was re-elected for 1917.

The American Vineyard Co. of San Francisco plans to plant as much as possible of 1150 acres in Merced county to Thompson Seedless grapes.

Japanese tenants have secured a large part of the Tokay grape vineyards in the Lodi district for the coming year. Price last season ran as high as \$150 an acre on the vine.

The Greek currant harvest of last

season was about 100,000 tons dried. The normal crop is about 150,000 tons. The quality was good, due to good harvest weather.

STATE TO BE DISTRICTED FOR FAIRS.

For the purpose of holding fairs, expositions, etc., of all the industries within each district, a bill has been introduced in the Legislature by Senator Slater to divide the State into 15 agricultural districts. District fair organizations to have the usual form are provided for. "Any sum appropriated by the State for aid to the district agricultural associations herein provided for . . . shall be used exclusively for the payment of premiums upon bona fide exhibits of agricultural, horticultural, viticultural and mechanical products, or of manufactures, or

mining or forestry products, and for the payment of premiums upon exhibits of domestic live stock, except" what is necessary up to 20 per cent of the appropriation to pay salaries and office expenses.

IS YOUR SOIL 100 PER CENT EFFICIENT?

Few Ranchers Realize Full Possibilities of Their Land.

It is an astonishing fact that the great majority of California ranchers and fruit growers are suffering a very serious loss every year, of which they have little or no knowledge. That is, their crops do not begin to measure up to the maximum possibilities of their lands. This is a condition which would not be tolerated in any other line of business, and there is no good reason why it should be endured in farming—the greatest business in the world.

If you do not get a full crop from your fruit orchard, your alfalfa land or grain field, it is probable that the principal fault is in the soil itself.

It is impossible to tell from the looks of a soil whether it is in perfect condition, and soil experts are, of course, expensive.

Every rancher will learn with interest, therefore, that a little device has been perfected which will test soil accurately, and show just what it needed to bring it up to the maximum of bearing efficiency. The initial cost of this little machine is very nominal, considering its great value to the rancher in increased crops. Once the device is obtained, the cost of each soil test is only a few cents.

These soil testers are being distributed on the Pacific Coast by Mr. Clement B. Stern, 613 Central Mortgage Bldg., San Diego, California, who will be glad to mail literature and full information regarding them to any reader of this paper who will simply drop him a line.

MANGEL BEETS

Alfalfa Grass Seeds
FRUIT TREES

WRITE FOR PRICES

California Seed Co.
151 Market St.
SAN FRANCISCO, CAL.

MORSE'S SEEDS FOR FARM AND RANCH

Plant Morse's

Alfalfa, Clover, Beans, Peas,
Grass, Tomatoes, Onion, Corn,
Mangold, and all farm, field
and vegetable seeds.

*Strong germination
and vitality*

Sold by all leading Dealers or direct from

• C. C. MORSE & CO.
SEEDSMEN

735 Front Street

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Kill Squirrels Kill Gophers

The only exterminator that is 100% efficient and guarantees results or money back is

KILMOL
SQUIRLGOPHENE

Used and endorsed by biggest and most successful ranch owners. Prepared waste balls saturated with KILMOL give best results.

New formula of U. S. Gov't Poisoned Barley is effective in dry weather.

Your dealer carries Kilmol. U. S. Gov't Poisoned Barley and Waste Balls.

WASTE BALLS \$6.00 PER THOUSAND

Cheaper than you can make them

Herbert F. Dugan
1170 Sutter St. San Francisco



PROFIT comes from fruit, not foliage. On Citrus fruits use immediately available

Nitrate of Soda

It works while the fruit buds are forming.

"Orange Culture" is a valuable book I will send to you Free if you will but ask for it. Send post card.

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Sweet Clover Seed

Get Samples and Prices

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422 Sansome St.
SAN FRANCISCO, CAL.
"Breeder's of Westobac."

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Agricultural Investigation, Drainage, Legal Engineering and Water Right Reports, Alkali and Marsh Land Reclamation, Appraisal of Irrigation Systems, Management and Development of Lands, Ranches and Irrigation Projects, Soil Surveys.

58 SUTTER ST., SAN FRANCISCO, CAL.

What Are Pedigreed Trees? We want You to Reason Before You Buy Citrus Trees.

If it did not cost so much to produce our trees, we could sell them at competitive prices with other nurseries—why, our methods of selecting our budwood alone would sell our stock. We have had over 20 years' experience in Citrus Trees, and were among the first to advocate bud selection from fruit-bearing wood. The price of the tree is the smallest item in the cost of bringing into bearing. Fertilizer, labor, investment tied up in land—these are the big factors that go to pot if, years after the trees are planted, the grove bears miscellaneous offspring.

**50,000 Valencia Navel Oranges
Eureka Lemon Trees**

First National
Bank Bldg.,

WALKER & HUBBARD NURSERY CO.

SAN FERNANDO, CAL.

Mechanical Power on the Farm.

Users of tractors, engines, pumping plants, motor trucks, automobiles, electric motors, and other mechanical farm power are invited to make this department an exchange of their experiences and troubles.

PACIFIC AUTOMOBILE SHOW.

[Written for Pacific Rural Press.]

Farmers have been the biggest buyers of automobiles during the past two years, according to Alfred Reeves, general manager of the National Automobile Chamber of Commerce, which delegated him to open the First Annual Pacific Automobile Show, which was held in San Francisco Feb. 10 to 18. In 1916, by figures of the N. A. C. C., 1,525,578 automobiles, valued at \$921,378,000, and 92,130 auto trucks, valued at \$166,650,273, were produced, the biggest year of the industry. The average retail price per automobile was about \$604, and per auto truck was about \$1812. This shows that low-priced automobiles have been most popular.

The Pacific Automobile Show, though held under the auspices of the local Motor Car Dealers' Ass'n, is expected to become the scene of the Third National Automobile Show, for such a recommendation was promised by Mr. Reeves; and the other Pacific Coast cities are aiding the move. The attendance is estimated at a total over 60,000.

Over 200 machines of 44 makes, ranging from a value of \$12,500 down to \$360, and from 12 cylinders down to four, were exhibited on the main floor of the Exposition Auditorium. Upstairs were 42 accessories exhibits. It was here that the visitor looking for new things found most to interest him.

Among the automobile exhibits, one of the noticeable features is the changing of angles and abrupt curves in hood and body lines, to long full-flowing curves giving a fine impression of great power and beauty.

Shaded lights held aloft by figures of Mercury were marked with names of cars in their vicinity, so the visitor could easily locate the one he wanted. The whole auditorium was lighted and decorated at a cost said to be \$35,000, to a state of luxurious attraction that interested many of the women more than the machines did. Not so with all, however, for it was noted that the number of women who drive for health, pleasure, or business has been increasing perhaps faster than the production of automobiles. And the attention of exhibitors was paid to women as carefully as to men. For the same reason, most of the improvements noted in cars were in the way of new comforts, conveniences, and adornment.

Among the features noted was the \$25,000 golden Studebaker chassis. An Overland, set on a revolving platform and surrounded by flowering plants, attracted attention. The Knight motors used in Willys-Overland machines, with their sleeve valves operated by a cam shaft, were shown in slow operation. A Hudson bearing the legend "World's Record Run San Francisco to New York 5 days 3 hours; New York to San Francisco 5 days 17 hours" called attention to their Super-sixes, which are about the same now as when introduced a year ago, in spite of the wide discussion of the principle on which their crankshaft is built. Six or eight Chalmers of two to seven passengers were shown in practically the same models as a year ago, except for larger brakes and little improvements here and there. Four Mitchells of powerful suggestion and enlarged radiators featured their eight-cylinder models adopted last fall. A cutaway Cadillac chassis in slow motion attracted the visitor to the large display by Don Lee. The magnetic gear shift of the Premier, operated by buttons, makes it as easy to handle as an electric machine. The 12-cylinder 1917 Haynes was the first of its kind on the Coast. A Dort chassis was illuminated with 800 lamps. The Death Valley Dodge motion picture hall was usually crowded. The new 8-cylinder Kings were shown here for the first time.

The first sale at the Show was a Saxon, within an hour after opening. The Hudson people posted a list of 16 sales made in the first seven days. Other dealers reported satisfactory business and the enrollment of many prospects.

Accessories.—Of the accessories we can only mention the most striking at this time: A self-repairing inner tube with two layers of fabric almost all around and quadrupled thickness of rubber where blowouts might occur; three or four types of pneumatic shock absorbers which seem to work best with the stiffest springs, perhaps presaging the elimination of springs, several makes of tires and bearings, a solid rubber tire to be put on over a pneumatic tire, several speedometers, light controllers, carburetion devices, tools, etc. The California Automobile Association and the State Motor Department had booths and exhibits to illustrate their methods and activities.

TRACTOR ASSOCIATION ORGANIZED.

On Saturday, Feb. 17, representatives of all the big tractor manufacturing companies on the Pacific Coast and California representatives of most of the Eastern tractor manufacturers met at the Palace Hotel in San Francisco and organized the California Tractor and Implement Association. H. A. Smith, of the Joshua Hendy Iron Works, was elected president of this organization; W. H. Gardner, of the Yuba Construction Company, vice-president; and G. M. Walker, of The Holt Mfg. Co., secretary and treasurer. The chief pur-

Layne & Bowler PUMPS

Don't wait until the dry season is here before thinking about your irrigation needs. Prepare now. Get in touch with our water experts. Without any obligation on your part they will tell you just what amount of water you need, what size pump you should have, and the cost of a new pumping plant if you need one.

Our illustrated pump catalog No. 25 gives full details. Write for it.

Layne & Bowler Corporation

900 Santa Fe Ave., Los Angeles

Let The World's Largest Water Developers Solve Your Pumping Problems

Do It Electrically



ELECTRIC APPLIANCES in the household, not only add to the convenience of all members of the family, but they are economical and time-savers.

ELECTRIC APPLIANCES include CHAFING DISHES, COFFEE PERCOLATORS, VACUUM CLEANERS, ELECTRIC IRONS, and every other appliance that is needed in the modern home, not forgetting **ELECTRIC FANS.**

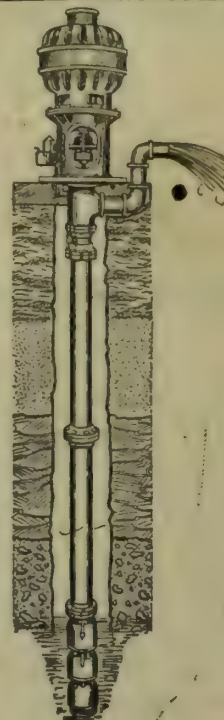
We carry these appliances in many of our branch offices, and will be glad to have you call and inspect them. Where we do not carry them we will be just as glad to give you our expert advice.

"PACIFIC SERVICE" is always "At Your Service."

Pacific Gas and Electric Company

HEAD OFFICE, 445 SUTTER ST., SAN FRANCISCO.

Branches in all principal cities and towns of North Central California.

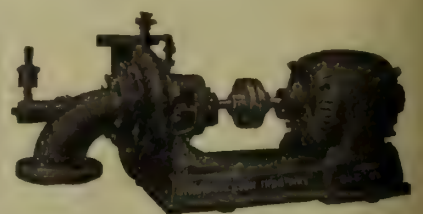


DEEP WELL TURBINE

No valves to pack or plunger rods to get out of order. For use in any well ten inches in diameter or over.

A complete line of irrigating pumps of all descriptions, horizontal and vertical for belt drive or direct connection to electric motor.

Prices as low as are consistent with good quality and workmanship.



WRITE FOR CATALOGUE NO. 47.

BYRON JACKSON IRON WORKS, Inc.

SAN FRANCISCO. LOS ANGELES STOCKTON, VISALIA

IRON AGE GARDEN TOOLS

Answer the farmer's big question: How can I have a good garden with least expense? How can the wife have plenty of fresh vegetables for the home table with least labor?

IRON AGE Combined Drill and Drill Seeder

solves the garden labor problem. Takes the place of many tools—stored in small space. Sows, covers, cultivates, weeds, ridges, etc., better than old-time tools. A woman, boy or girl can push it and do a day's handwork in 60 minutes. 38 combinations. \$23.25 to \$15.00. Write for booklet.

Bateman Mfg. Co., Box 200, Gronick, N. J.
KANOUSE & FOOTE, General Agents
FIRST & JACKSON STREETS, OAKLAND, CAL.

pose of the Association is to organize and conduct a tractor demonstration or tractor demonstrations in California similar to demonstration of this sort that have been conducted in

No Pit

is required with the

KROGH
DEEP
WELL
TURBINE
PUMPS

For bored or drilled wells from 10-inch inside diameter up; and for capacities of 250 gallons per minute up to 3000 gallons per minute. Built for pumping from any depth to and including 250 feet. They are absolutely water balanced and are self-aligning. More water can be obtained from such wells than with any other type. Built in belted or direct motor driven types. If interested, write for Bulletin.



**Krogh
Manufacturing
Company**

SAN FRANCISCO, CAL.

Branch at LOS ANGELES, CALIFORNIA

Pull Big Stumps by hand



Clear your stump land cheaply—no digging, no expense for teams and powder. One man with a K can rip out any stump that can be pulled with the best inch steel cable. Works by leverage—same principle as a jack. 100 pounds pull on the lever gives a 48-ton pull on the stump. Made of Krupp steel—guaranteed against breakage. Endorsed by U. S. Government experts.

**K HAND POWER
Stump
Puller**

Write today for special offer and free booklet on Land Clearing.

Walter J. Fitzpatrick

Box 32

182 Fifth Street
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GET MY PRICES

I can ship at once any size or style WITTE High-Grade Engine—2 to 22 H.P.—Kerosene or Gasoline—Stationary, Portable or Saw-Rig—ready to run—Guaranteed 5 Years. You don't have to wait 6 to 8 weeks for a WITTE. You save \$25 to \$100. Choice of engines—Cash or Easy Payments. My Free Book "How to Judge Engines," by return mail.—Ed. H. Witte, Pres. WITTE ENGINE WORKS, 2840 Oakland Ave., Kansas City, Mo. 2860 Empire Bldg., Pittsburgh, Pa.



Driver Agents Wanted

Ride in a Bush Car. Pay for it out of your commissions on sales, my agents are making money. Shipments are prompt. Bush Cars guaranteed or money back. Five-Pass., 30 H. P. 32x8 1/2 tires



Write at once for my 48-page catalog and all particulars. Address J. H. Bush, Pres. Dept. 11N. BUSH MOTOR COMPANY, Bush Temple, Chicago, Illinois

Southern California and throughout the Middle West. Membership in the Association is open to tractor manufacturers, manufacturers of plows, harrows, scrapers, and other implements to be used with tractors, and representatives or jobbers of the above-named classes of concerns.

The next meeting of this Association is to be held the last Saturday in March, at which time definite steps will undoubtedly be taken towards the making of arrangements for the biggest tractor demonstration ever held west of the Rockies.

EARLY DISKING BY TRACTOR PREVENTS BAKED SOIL.

[Written for Pacific Rural Press.]

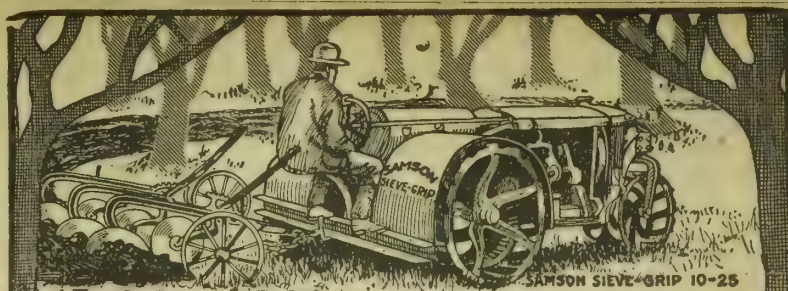
There is a citrus district in Tulare county where the ground works fine if worked in time after winter rains or irrigation; but a little delay lets it crust hard, and soon it bakes so deep that it can scarcely be worked down all summer. Last year an acre out of the 60 acres of citrus and olive orchard worked by F. B. Alexander had been used as a drive and as a feeding corral, so it was especially packed. It was plowed late. Big hard clods of the fine red clay turned up with sharp edges that became painful for the horses. Mr. Alexander tried to harrow it down but made no impression. He tried to disk it, but the disk pulled so heavy and the horses stumbled so badly among the clods that he didn't do much and the clods remained all summer.

Last fall Mr. Alexander bought a 6-12 tractor; and about Feb. 1, he plowed this piece, turning it up again in chunks (though not so hard, due to winter moisture). The tractor didn't get sore feet, but pulled a double disk over the chunks immediately, cutting them down pretty well and crushing many with the wheels. Another disking was expected to put it in good shape.

Meanwhile the rest of the orchard was being disked in mid-February to conserve moisture until it could be plowed. This seems especially necessary since the past dry winter; although Mr. Alexander has two wells from which the water would soften the land if that expense becomes necessary before he can get it all plowed. At any rate, working the top soil prevents turning under big clods which would hold air spaces in the furrows and dry out quickly. When the ground dries as deep as it is plowed, tree roots have a poor chance to make a living. The six-foot double disk of 20 disks was cutting the soil pretty fine and reasonably deep, being loaded with about 250 pounds of rock and iron. They were angled about 25 degrees from a straight line and half of them are cutaways.

"I had four head of stock weighing about 4550 pounds on the disk all last summer; but even then I couldn't angle the disks as I do now and keep going at any speed. With the machine, I can lead the disk so it goes deeper than I ever could with the teams," said Mr. Alexander.

Most of the materials recommended to prevent motor car radiators from freezing have a detrimental effect on the parts which they touch. However, denatured alcohol (tax-free ethyl alcohol) gives good results without injury. A quart to each gallon of water is sufficient.



Constant Service SAMSON SIEVE-GRIP

Pat. and Reg. U. S. and Foreign Countries

TRACTORS

will stand by you in the rush season, and all the year 'round. Their steel construction, dust-proof qualities, oversize bearings and thorough lubrication insure constant service at low cost. The world-known Sieve-Grip wheel gives complete traction—no slipping, no soil packing.

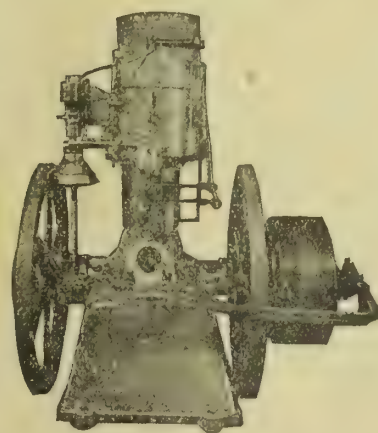
You Can Do Better Work

in the orchard and field with a Samson Sieve-Grip Tractor. Your plowing and cultivating will be easier, crops larger and expenses less. Your farming business needs a Samson Sieve-Grip. By placing your order NOW, you will get your tractor when you want it. Though the demand for Samson Sieve-Grips is tremendous, we can make deliveries on time.

Samson Sieve-Grips are built in two sizes—10-25 at \$1350 and 6-12 at \$775, f. o. b. Stockton.

SAMSON SIEVE-GRIP TRACTOR CO.
Stockton, California, U. S. A.

With Gasoline at 4c per Gallon, an ordinary gas engine could not produce power as cheaply as does the Victory Oil Motor

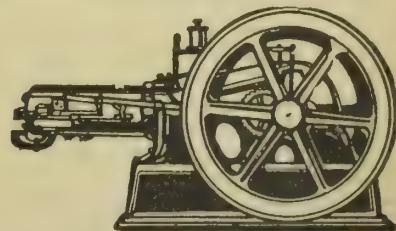


This engine is made in California to operate on California asphaltum base oils. It has no valves, cams, batteries, or small working parts. No heating of fuel, no hot balls, and no torch required for starting.

Ask for our Rigid Guarantee.

Victory Motor Co.
Niles, California

It's up to You!



What are you going to do about that engine you are thinking of buying? Are you considering price or quality most? Do you want a cheap engine or a good engine? You can't expect very much from a cheap engine, because when an engine is made of poor material and poorly designed and constructed something is bound to happen early and often. Maybe you have had experience with the cheap kind, and are looking for quality this time.

Commercial Engines will give you more for your money and more genuine satisfaction than you ever dreamed possible. It's up to you to get posted on the Real Thing in Pumping Engines.

An ironclad written guarantee protects the purchaser of every Commercial Engine. Write for handsome illustrated catalog showing details of construction.

Commercial Engine Co.

2424 Porter St.,
Los Angeles, Calif.

Branch: 1228 "H" St., Fresno, Cal.

Creamerymen Advocate Cow-Testing.

The movement for better dairy cows has never been so strong in California as at the present time, for not only are concerted drives being made on dairymen to use well-bred bulls by breeders, but there is continual agitation favoring the more general weighing and testing of milk on dairies.

In the past creamerymen as a whole have assumed a rather indifferent attitude toward cow-testing associations and some such associations have made the mistake of signing up members on the argument that such testing would give an accurate check on the creamery and that the testing fee would be more than saved on that point alone.

Really the cow-testing association's chief function is to eliminate the poor-producing cows and in this manner save more than enough feed and labor to more than pay the small annual testing charge per cow and it is on this basis that the creamerymen of the State, through the Cal. Creamery Operators' Ass'n, have passed a strong resolution endorsing the cow-testing associations of the State and agree to lend all possible support to both old and new organizations of this kind. In a letter recently received from that organization it is pointed out that in the last few years land prices have risen enormously, rents have ad-

vanced greatly, wages have climbed steadily and new sanitary laws have laid additional burdens on the dairymen.

It is claimed that during the period of advancing prices and values dairymen have made more money by trading leases and selling cattle than they have from actual dairy operations. Those opportunities, it is pointed out, are over, and the dairyman who would stay in the business and meet the increased cost of production has only the one recourse left: that of increasing the butterfat production per cow.

Among other things this calls for the use of purebred bulls, the raising of all heifers and the weeding out of all cows in the herd which fail to be heavy and persistent producers of butterfat.

To some it may seem peculiar that the creamerymen should take such a decided interest in the welfare of the dairymen, but this is logically explained by reference in the letter to the fact that unless the dairy industry continues to expand, the creamery business will also stand still. It is gratifying to learn that the interests dependent upon the dairyman are beginning to understand that what is good for the producer must ultimately be good for all connected with the industry—in short, their interests are mutual.

Profitable Goat-Raising.

[Written for Pacific Rural Press by O. L. Linn.]

Mr. Ed Morse of Stanislaus county has gone far enough in the goat business to give some valuable data on that industry which may be of interest to others.

At present Mr. Morse has a herd of only 34 goats, all of which are of the milk variety, some of them as much as five-sixths pure blood. He has no difficulty in disposing of his stock at from \$30 to \$50 per head, and when it is remembered that each female produces an average of two kids a year it can be readily seen how remunerative the business is. It is generally understood that one cow will eat as much as eight goats and from the standpoint of the off-

spring alone it is readily seen that, so far as Mr. Morse is concerned, the cow is not in it with the "Mrs. Nanny." According to Mr. Morse a good goat will give around nine pounds of milk a day, and, taking the average test of a Holstein cow, this milk would be worth (at present prices) about \$4.00 per month and here again we compute what eight goats would produce on the equal food consumption of one cow, but of course it is admitted that it is some more work to milk eight goats than one cow. Mr. Morse finds ready sale for his milk at a cheese factory, where it is converted into cheese for which use the goat is again famous.

A Better Way with Kicking Cows.

To the Editor: I noticed in a recent issue a description of a contrivance for a kicking cow. In view of the fact that most kicking cows are of nervous temperament and as apt to stand on their heads as on their feet, the device mentioned does not appeal to me because of the difficulty one would have in unfastening it, as the writer described it as being made of strap-irons and chain.

A simpler device can be made of an old halter rope in the following fashion: Take a piece of rope 30 to 40 inches long. Make a spliced loop on one end and tie a small piece of wood to the other end about three

or four inches long, tying the rope around the middle of the stick.

Put the rope around the left leg of the cow, just above the hock first, twisting the rope gently but allowing enough surplus to go around the right leg. Then put the piece of wood through the spliced loop making it act as a sort of a key. Not only can such a device be quickly and cheaply made, but it can be quickly cut from the cow in case she falls down and continues to kick. I have recently seen this in use on Mr. T. Lynch's ranch in Contra Costa county and I have used it successfully on father's ranch.—P. H. Pearson.

Corn Silage in San Fernando Valley.

Two silos of 260 tons each were filled last fall by Jas. J. Jeffries of Los Angeles county from 16 acres of Eureka Ensilage corn and 10 acres of Hickory King. This year he ex-

pects 20 acres to do it. Last year it was drilled in rows three feet apart about June 28. This year it will be checked about June 1 to give it a longer growing season and more

room for leaves. Last year not a sucker grew on the Eureka variety. Six acres of this filled a silo half full; while it took the 10 acres of Hickory King to finish that silo. Only the Eureka will be planted this year, on alfalfa land being plowed early in February.

"I never saw such stuff to grow," says he. "Sixteen feet high, thick in the row, regular canebrake, one to three ears per stalk, and the roots made a solid mat between the rows."

"Had to cut it by hand. Took two men to handle a stalk. So brittle it would break in the middle if one man handled it. Stalks were big, too, but it was so tender that the silage cutter chopped it about as easy as ordinary corn. Sweet, too! We used a big cutter and a 25-h.p. motor. I've ordered 500 pounds to plant this year. Think I'll raise two acres of it for seed."

MAN-LOVING LIONS AND BEARS.

Mountain lions will never attack people except in self-defense, according to Prof. Joseph Grinnell, director of the University of California museum of vertebrate zoology. Every rumor or account of an attack on human beings by mountain lions that the press clippings have brought to the attention of Dr. C. Hart Merriam of the United States Biological Survey for a number of years past has been carefully investigated, and never once has he been able to find an authentic instance of an attack on human beings by a mountain lion. For years Professor Grinnell and his associates have been investigating every rumor they could hear of an attack upon people by a California bear, but never once have they been able to find an authentic instance of an attack by a California bear—since the day of the grizzly—except to defend itself or its cubs against attack.

The silo prevents the waste of the stalks, leaves, and husks, which contain two-fifths of the total feeding value of the corn.

If the cut corn is not thoroughly mixed before being blown into the silo, it will settle very unevenly, spoiled silage probably resulting.

In six or eight weeks the silage will be ready for feed.

BERNSTEIN'S RANCH

Will consign two Great Boars and fifteen splendid sows to the sale to be held at

Hanford, March 7

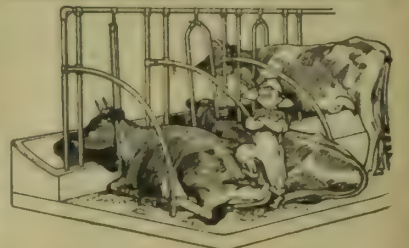
These are from the **Bigger, Easier Feeding Kind of**

Poland Chinas

The kind that will make good. Write me for catalogue.

L. C. TREWHITT, Manager. W. BERNSTEIN, Proprietor.

Hanford, Kings Co., Cal.



COW COMFORT

MORE and BETTER MILK

We carry Most Complete Stock Sanitary Barn Equipment Carried on Pacific Coast.

California Hydraulic Engineering & Supply Co.

68 Fremont St., San Francisco. AMERICAN PUMP COMPANY, 424 East Third St., Los Angeles.

FOR SALE

REGISTERED SHIRE HORSES

6 Mares, seven to ten years; weight 1800 to 2100. 2 Two-year-old Fillies; one was winner P. F. I. E. 1 Three-year-old Stallion; will make a ton horse; winner as two-year-old, P. F. I. E. 1 Two-year-old Stallion. 1 Yearling Stallion. Also 1 two-year-old Percheron Stallion.

All sound and right in every way. Mares and stallions broke to work. Priced right to move quickly to make room.

BRIDGFORD COMPANY, Knightsen, California



ORDER YOUR Shorthorns - Herefords NOW!

There is an impending bull shortage all over the country, and prospects are that it will become more acute since good feed is assured by the recent rains.

I have just returned from the Middle West with the best lot of Herefords ever brought to California, and am fully acquainted with supplies of breeding stock in that section.

Place Your Order Before the Supply is Exhausted.

As to the service you may expect I refer you to the following satisfied customers: W. Mayo Newhall, San Francisco; W. Bemmerly, Woodland; Parrott Est. Co., Chico; Frankenhelmer Bros., Stockton; A. E. Noyes and Son, Sutter City; Stanford University Ranch, Vina; Wm. Russ, Eureka; Simon-Newman Co., Newman; and J. A. Donohoe, Donohoe-Kelly Banking Co., San Francisco.

BULLS IN SINGLE OR CARLOAD LOTS.

(On a strictly commission basis.)

ADDRESS ME

R. M. DUNLAP

DESK A, ROOM 217, UNDERWOOD BLDG., SAN FRANCISCO, CAL.

BULLS - Shorthorns - HEIFERS

REGISTERED AND TUBERCULIN TESTED.

Animals of either sex ready to deliver in car lots or singly.

H. L. & E. H. MURPHY, Perkins, Cal.

Establishing a Minimum Cow Production.

[Written for Pacific Rural Press.]

Should the dairy farmer have a minimum requirement for each and every cow in his herd and sell her if she does not come up to the standard? Most dairymen who weigh or test their milk believe in such a standard, but few are so exacting in this respect as K. W. Abbott of Santa

their first calf is 6,000 pounds during a 10-month lactation period and that for heifers with their second calf is 7,000 pounds, but Mr. Abbott finds that these are below what he actually secures. But the majority of heifers who produce these totals in their respective classes have little

Standard for Mature Cows.

No. of months fresh.....	1	2	3	4	5	6	7	8	9	10
Pounds Milk.....	1150	2250	3300	4300	5250	6150	7000	7800	8500	9100

Clara county, who usually milks about 60 cows.

When he took the management of his present dairy several years ago he began to systematically weigh the milk of each cow twice a month, once about the middle of the month and again on the first of the month. By multiplying these weights by the number of milkings intervening between weighings the total production is secured for the month. As the milk is sold whole, testing for butterfat is not considered essential.

These milk weights are credited opposite each cow's name on the record book under the monthly column for which they were made, each month's weighing being added to the total of the previous month so that production to date for each month of the lactation period may be readily ascertained.

At the top of each page of the record book the minimum requirements in milk, both for the month and for the entire lactation period is given above.

The requirement for heifers with

AGE TO BREED HEIFER.

To the Editor: What is the best age to breed a Durham heifer? Some years ago I had a fine large Durham heifer, which I bred after she was a little over two years old. She made a big fine cow, but she was a failure as a milker and I sold her to the butcher. I have a Durham heifer now, which was bred at nineteen months, and one a year younger—she is a little over 14 months—which came in heat regularly since she was nine months old. Would it be advisable to breed her March or April? She is large and well developed for her age. I thought the failure of the first one to make a good milk cow was partly caused by letting her get too old.—F. W., Chico.

If she is well developed she may be bred as you suggest in March or April. This would make her fresher at 25 to 26 months which is old enough under normal conditions. Experienced breeders depend more upon the size of a heifer than upon her age, on the ground that a small, undersized heifer will make a smaller cow if bred young than if allowed to develop before breeding. It does not seem probable that the age of your other heifer, before breeding, had anything to do with her producing qualities. The only danger of allowing them to get too old is the trouble sometimes experienced in getting them with calf.—Eds.

Silage corn may be planted about half again as thick as ordinary corn. Drill it in rows, dropping it every seven or eight inches.

Economical Hog Shade Saves Fat.

[Written for Pacific Rural Press.]

One man the humane society ought to get after is the Sacramento valley farmer who turned his hogs onto grain stubble without providing any shade. Aside from this cruelty and the loss of fat which fried out of the pigs, the lack of shade prevented economical use of the feed, and that farmer thinks there is nothing in raising pork.

Expense of constructing shade was no excuse, for many farmers with less money than he have constructed shades which are effective, if not as ornamental. L. F. Killenbeck of Orland laid old boards across the corners of his panel fences but even this expense could be reduced. Elmer Lamb of Ceres set four fence

posts in the hog pen in a 10-foot square and laid 1x8 boards across 2x4s nailed high enough on the posts to let the hogs under nicely. A layer of hay or straw completed the shade. All the breezes that come along may sweep under the shelter. For winter protection, movable V-type houses were built of 1x10 boards set several inches apart and the cracks covered by 1x8's; the peak being fastened tight by nailing the upper end of the other side together. The windward end is covered with 1x8's; the other end is open except for a brace half way up. The lower ends of the boards constituting the sides, are nailed to 2x8 runners braced across the bottom.

ASK YOUR DEALER FOR

El Dorado Coconut Oil Cake

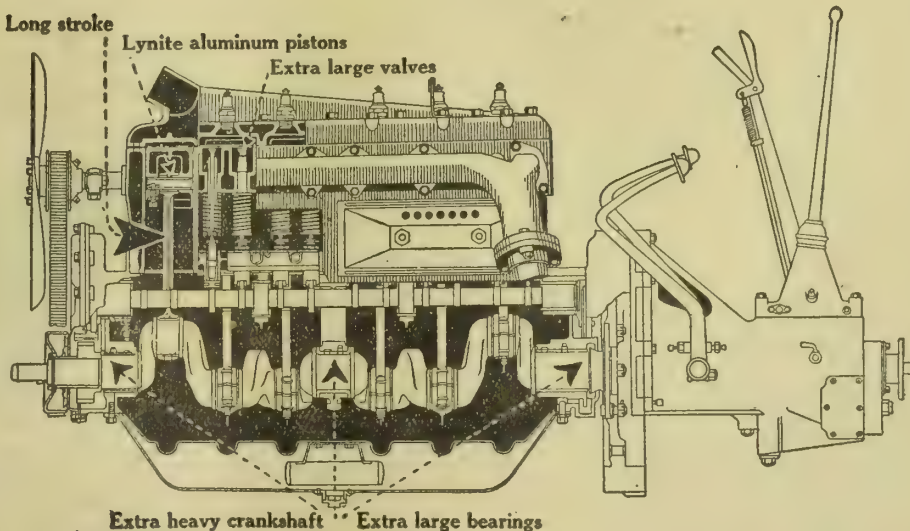
for Milk Cows and Chickens and Young Pigs and Hogs. Cheapest food in the market today. If your dealer doesn't carry it, address

EL DORADO OIL WORKS,

433 California Street,

San Francisco

5-PASSENGER 6-30 CHALMERS, \$1090 AFTER MARCH 1st, \$1250



A SOUND ENGINE IN A SOUND CAR

The engine of the Chalmers 6-30 is very rugged. Yet simple. Modern in everything, but not extreme in any. A good, safe engine. Reliable. Well lubricated. Of good bearings. Accessible. And one that "stays put." Has plenty of power. Though it is not a big engine. The power is well proportioned to the weight of the car. Thus making hills easy going. The power is smooth, too.

Specifications

Engine—6 cylinders, bore 3 1/4 ins., stroke 4 1/2 ins., piston displacement 224 cu. ins. Power—45 h.p. (on the brake test.) Starter—Westinghouse 2 unit. Carburetor—Stromberg, horizontal, hot air heated. Clutch—Dry disc, asbestos on steel. Fuel feed—Stewart-Warner vacuum system. Ignition—Remy distributor, Willard 80 ampere hour battery. Tires—32 x 4, chain tread on rear. Wheelbase—115 ins.

Present Prices

Five-Passenger Touring, \$1090 f.o.b. Detroit	Seven-passenger Sedan, \$1850 f.o.b. Detroit
Seven " " 1350 " "	Seven " Limousine, 2550 " "
Three " Roadster, 1070 " "	Seven " Town Car, 2550 " "



Setting a Standard of Weights.

Perhaps the ideal type of the various breeds of livestock will never be developed for the very good reason that views differ as to which type is more profitable. But on one point all are agreed and that is that, other things being equal, a good big animal is preferable to a good little one.

Many times breeders as well as farmers do not secure maximum or even minimum sizes in the breeds they are breeding, chiefly because they are poor feeders and do not develop their animals intelligently. That feeding and environment play an important part in the development of animals may be readily ascertained by comparing the relative size of animals grown on irrigated areas with those grown on semi-arid hill pastures, where the feed supply is low for a considerable portion of the year.

To acquaint breeders and farmers with the approximate weights animals of the various breeds should attain at given ages, Wm. Hislop, Animal Husbandman of the State Agricultural Experiment Station at Pullman, Washington, has compiled the following tables that should act as a minimum, rather than a maximum, size, providing quality can be

secured with the additional size:

Weights of Beef Breeds.

Breed of Cattle	Sex	One year	Two years	Three years	Four years and over
Shorthorn	B	925	1400	1725	2000
	C	825	1300	1625	1725
Hereford	B	900	1350	1700	2000
	C	800	1275	1625	1700
Aberdeen Angus	B	850	1225	1625	1950
	C	700	1180	1525	1625
Galloway	B	800	1175	1525	1800
	C	675	1050	1350	1500

Weights of Swine.

Breeds of Swine	Sex	Six mos.	One year	Two years and over
Poland-China	B	165	340	600
	S	155	320	500
Berkshire	B	165	330	575
	S	155	310	490
Duroc-Jersey	B	170	335	600
	S	160	315	510
Chester-White	B	150	325	525
	S	150	300	450

Weights of Sheep.

Breeds of Sheep	Sex	Six mos.	One year	Two years and over
Shropshire	R	80	160	220
	E	75	130	160
Hampshire	R	90	175	250
	E	80	140	190
Southdown	R	60	120	175
	E	55	100	135
Lincoln	R	96	180	250
	E	85	150	200
Rambouillet	R	75	130	185
	E	70	125	150

High-Priced Steers.

[Written for Pacific Rural Press.]

A bunch of 235 grade Shorthorn steers averaging about 1250 pounds was sold by T. T. Miller Jan. 25 for delivery to a Los Angeles firm at 8 3/4 cents per pound, a total well over \$20,000 f. o. b. cars at Calexico.

The high price was due to two features of the herd as gathered by our staff writer from Mr. Miller and his ranch superintendent, B. L. Roberts.

They were a uniform lot. They were of high quality.

Their uniformity was due to their purebred sires for many generations back, the range in Lower California from which they were obtained by Mr. Miller as short yearlings having been stocked with purebred Shorthorn bulls for many years, though a few Herefords had been mixed in. Thus they were a uniform lot when

obtained by Mr. Miller; and they developed uniformly.

Their quality also was largely due to the breeding. At the time of sale, Mr. Miller thought they would dress out 52 or 53 per cent; but the buyer figured on 58 per cent.

Their last sixteen days had been spent on alfalfa pasture with alfalfa hay ad libitum. Mr. Miller estimates that they ate about 20 pounds of hay per day. The pasture was 40 acres that had been "nursed along" so the alfalfa and barley were several inches high.

For two or three months previous to the alfalfa feed, they had been on milo corn stalks, the milo heads having been harvested. Previous to that, they had simply followed other steers, roughing it as best they might.

Card-Indexing Grade-Cow Life Histories.

[Written for Pacific Rural Press.]

Though Ennis and Williamson of Riverside have only two purebred females in their 140 cows, they believe it is none the less necessary to keep records of their grades in order to handle them intelligently.

Every cow has an aluminum tag in her ear, with a number to correspond with a record in the card index. In addition, the young heifers are being branded.

Each card has a tab, on which the number is marked. The tabs are located each one at the right of the one in front of it, 10 in a series, to make them easy to find.

The entire life history of each cow is entered on these cards, data being taken from the field book carried all the time by Supt. McCord.

The record includes the name of the man from whom the animal was secured, dates of freshening, sex and

sire of each calf, when bred again, to which bull, and the monthly butterfat test of a mixed sample from two consecutive milkings with the weight of milk.

All events, such as premature loss of calf, tuberculin testing, veterinary troubles, dehorning, etc., are also noted. When one card is filled, it is a simple matter to put another card without a tab directly behind, so that it takes no time at all to look up the entire history of any animal.

On the adult animal the horns may be removed by the use of the saw or clipper. In either case the cut should be close enough to the head to leave a ring of hair on the part that is removed, otherwise there is likely to be a stubby growth of horn appear in a year or two.

CARRUTHERS' FARMS FIRST ANNUAL

Shorthorn Sale

MAY 2nd, 1917

MAYFIELD, CAL.

Watch this Space for Later Announcements.

ORMONDALE SHORTHORNS



Golden Goods, Jr., Herd Sire.

Our 1916-17 offering of yearling bulls is small but select. They are all heavy boned, solid red in color and of Scotch and Scotch-topped breeding. Suited for either the range grower or breeder.

DUROCS.

Our Durocs are of the big type, with big bone, well-arched backs and carrying good hams.

We have a few head of service boars, now ready for service, solid red in color and out of prize-winning animals.

Every Animal Positively Guaranteed

Whether you buy or not, visit our ranch, 7 miles from Palo Alto on Woodside Road. We welcome inspection. Prices and pedigrees on application.

Shorthorn Cattle
Duroc-Jersey Swine

ORMONDALE CO.

R. D. No. 1
Redwood City,
California.

Hillcrest Stock Farm

Shorthorn Cattle, Shropshire and Merino Sheep



King Lancaster, sired by King Edward, grand champion bull State Fairs, 1900-10-11.

Shorthorn Bulls for Sale, sired by such noted bulls as King Lancaster, Knights Perfection, Greenwood Knight and Greenwood King. Nearly all offsprings of the famous King Edward.

These Bulls are conceded to be the best offering ever made from the Hillcrest Stock Farm.

For Particulars Apply—

T. S. GLIDE
Proprietor.

Davis, California

Paicines Ranch Co.



Offers for sale a select lot of weanling registered bulls, sired by such bulls as Fond Lavender, College Count 3rd, Bessie's Council and Whitehall of Orange. For prices and particulars apply to

DAVID J. STOLLERY

320 Sharon Bldg.,

San Francisco,

California.

HOPLAND STOCK FARM

REGISTERED SHORTHORN BULLS

A fine lot of individuals. Ready for service on the range. Registered Berkshires, Holstein Bulls from high-testing cows.

San Francisco Office,

1210 Flood Bldg.

Berkshire Congress and Sale.

A three-day session of the Western Berkshire Congress was held at Davis last week and was well attended. On Tuesday an interesting demonstration of hog carcasses was given, E. J. Lovejoy and L. E. Frost of Illinois assisting.

At the annual meeting Wednesday evening F. R. Steel of Grants Pass, Ore., was elected president, Arlington Smith of Visalia, secretary, and Chas. M. Talmadge of Newport, Wash., vice-president. The Salem, Oregon, State Fair was named as the place for the next Western Congress Show. Plans of the American Berkshire Congress for further exploiting the Berkshire breed and \$10,000 advertising campaign were endorsed, and a supporting vote was given to the National Swine Show at Omaha. Establishing a register of merit for Berkshire hogs based on production and show record was suggested, and the following committee appointed to work it out: L. E. Frost, F. R. Steel, A. B. Humphrey and J. I. Thompson.

On Wednesday afternoon a judging contest for women was held, and in the evening the annual love feast and banquet. Thursday was given over to the Congress Sale.

At the sale forty-eight head of Berkshires brought \$6280, an average of \$130.85 per head. Forty-two were bred sows and these averaged

\$140 per head. The top price was paid by Harry Moore of Moore, Pitman Co., Indianapolis, for a sow consigned by A. B. Humphrey and bred to Grand Leader 2nd. Five head consigned by H. L. and E. H. Murphy averaged \$150 each. Other consignors to the sale were: Dean Beeman, Butte City Ranch, F. L. & L. S. Hall, University of California, Whitehall Estates, Geo. M. York & Sons, James Mills Orchard Co., Oak Grove Farm, Frank A. Brush, Arlington M. Smith; W. S. Corsa, Whitehall, Ill.; Chas. M. Talmadge, Newport, Wash.; Peer & Banks, Tacoma, Wash.; D. C. Bunn, Prosser, Wash., and Winona Ranch, Grants Pass, Oregon.

Geo. P. Smith, buying for H. W. Rice, a large plantation owner and stockman of Makawao, Maui, Hawaii, bought six head for \$1135; F. B. Anderson of Sacramento, six head for \$560; Geo. Kounias of Modesto, three head for \$565; Homer Hewins of Calistoga secured for \$330, a fine sow bred to Superbus and consigned by W. S. Corsa of Illinois.

Other buyers were A. B. Humphrey, A. J. Lovejoy, C. Henry of Greeley, Neb., J. E. Hall, A. L. Stephenson, Frank Brush, Arlington Smith, A. L. Bovall, W. M. Caruthers, W. R. Wright, A. Platz, Geo. J. Carr, Mrs. Grace Ames, and H. L. & E. H. Murphy.

SEE SERUM LABELS BEFORE VACCINATION.

[Written for Pacific Rural Press.]

Loss of a large per cent of previously healthy hogs which begin to show symptoms of cholera 7 to 11 days after vaccination, is inexcusable; yet that has happened frequently in various parts of the State. Our attention was recently called to this by several growers in Imperial county. Usually accompanying such loss due to vaccination is a circumstance unnoted by most such losers. If the serum bottles have been left on the place, the labels have been scratched off! The outfit which uses serum so old that it has lost its potency or that has soured due to hauling around the country in hot weather, cannot be punished too severely. He not only engenders a false sense of security; but in the simultaneous vaccination, he actually introduces the disease into every herd such serum is used on.

Labels Tell Age.—Each bottle of serum must be stamped with a date after which it must not be used. Serum will keep good a year if kept cold. The growers who complained of losing their stock had in each case looked up the bottles after the hogs sickened. In each case the labels had been scratched off. Lack of a label is the best kind of evidence that there is something wrong. Both the date and the number of each bottle should be recorded until all chances of infection are past.

Dr. B. J. Cady of the U. S. Dept. of Agriculture gave one of the growers to understand that if the numbers on the bottles used on his herd which sickened after vaccination could be secured, the serum users could be held responsible for hogs lost, or their license to make serum would be revoked.

Pork Imports and Packing Plants.

To the Editor: Can you give me data as to the amount of pork products shipped into California each year, both fresh and as cured products? Can you also give me figures as to the approximate cost of establishing a killing and packing plant which would handle about a carload each of hogs and beef per day?—H. K. D., Kerman.

[It is generally calculated that California imports of pork and pork products is worth about \$15,000,000 annually. We cannot correlate cost of packing plants and capacity. You will find interesting data upon the cost and capitalization of packing plants large and small in "Report No. 113 on Methods and Cost of Marketing Livestock and Meats" which

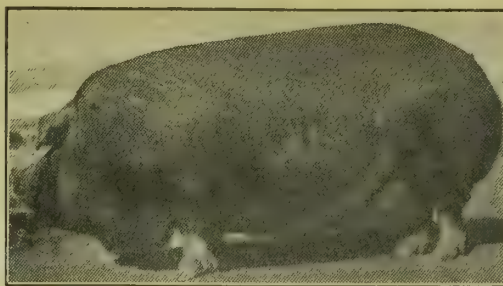
you can get by sending 25c to "Superintendent of Documents," Government Printing Office, Washington, D. C.—Eds.]

REMOVABLE HOG PENS.

[Written for Pacific Rural Press.]

If you should have to move your hog pens on account of disease or mud, etc., would it be a big job? Not for W. W. Cochran of Imperial county. His pens are made of panels about 4x16 feet, each one made of four 1x6's. They are supported every eight feet by posts made of old railroad ties which normally cost 20 cents each, but were bought cheaper

BASSETT'S POLAND CHINAS



GRAND CHAMPION SOW,
P. P. I. E. 1915; Sacramento, 1916.

For many years at widely separated show rings, under many different judges of varying type ideals, my Poland Chinas have been consistent prize-winners. My herd is large and I cull closely. The animals sent out as breeders are the very tops of a large number. I KNOW that my kind of Poland China is a profitable farmer's hog, for I send carloads of them to the packer every year—uniform in size, high in quality, quickly and economically matured and finished.

Young stock, \$30 Up.
M. BASSETT,
Box 1, Hanford, Cal.

CHEAPEST FEED NOW OBTAINABLE.

FEEDROLLED RICE

Rolled rice is being successfully fed this winter by leading California livestock men and poultrymen.

Digestible Value:
64.6% Carbo-hydrates
1.7% Fat
4.7% Protein

For prices and samples, Write or Wire
DODGE LAND COMPANY
Chico, California.

KINGS COUNTY JACK RANCH

BREEDERS AND DEALERS

AMERICAN JACKS AND JENNETS.

LARGEST HERD IN THE COUNTRY.

80 Head Jennets

40 Head Jacks

CAN SUPPLY YOUR WANTS AT ALL TIMES.

Write, or Come and See Them.

John Burrell, Proprietor

R. B., Box 73.

Hanford, Cal.

Sales Barn in Hanford near S. P. Depot.

CATTLE FEED FOR SALE

I have both wild feed and hay to be sold together, and fed out by owner. Write me at once for prices, etc.

JAS. McCORD,

Hanford, Cal.

Digester Tankage

Send for Sensible folder on feeding hogs

Western Meat Company

Animal Food Dept. 704 Townsend St., San Francisco

in two carloads. Along the tops of these ties is nailed two-inch second-hand lumber. The panels are fastened to the posts by wires which can be easily cut in case the pens must be removed.

For farrowing pens 1x3 stuff is used for the panels, which are wired to 4x4 posts. The roof for hot weather is made by laying a few inches of water-grass on top of woven wire which rests on 1½-inch stuff. The watergrass is to be mostly removed next winter to let maximum sunshine in. Perhaps some sort of shelter will be provided, for Imperial Valley does sometimes get as much as five inches of rain per year.

A record of the weight of the milk at each milking should be kept and the per cent of butter fat should be ascertained twice a month with a Babcock tester.

Inbreeding is the quickest way of fixing desirable characteristics, but it also fixes any undesirable characteristics that may exist and may destroy constitution and vigor.

MR. BUYER
DON'T MISS THE

RIPON COMMUNITY SALE

Saturday, March 3

Milk Cows Beef Stock, Calves, Heifers, Driving and Saddle Horses, Work Horses and Mules, Horse and Mule Colts, Pony and Cart, 1 Auto Truck, Registered Boars Brood Sows, Pigs and Shoats, Turkeys, Gyp Corn, Honey, Buggies, Farm Machinery, 1 Mower, 1 John Deer 3-Horse Plow, 1 Incubator, Etc., too numerous to mention.

Here is your chance to meet a gathering of farmers with their stuff for sale.

N. M. CAREY, Auctioneer.

Hog Cholera Serum

I represent one of the greatest Government Inspected Hog Cholera Serum Plants in the whole country.

NO BETTER SERUM MADE.
An ounce of prevention is worth a pound of cure. Find out about this serum today. Price Right.

For particulars address.

CARRUTHERS FARMS,
MATFIELD, CALIF.

AUCTIONEER

(Phone Farmers 394.)

Will conduct sales anywhere in California
Purebred livestock sales given special attention

For dates and terms address
T. J. GILKERSON, Lemoore, Cal.

Live Stock and Dairy Notes.

(Livestock breeders all over the State are invited to send on postal cards, notes regarding their sales, State and County Fair intentions, new stock, etc.)

DAIRYING.

There are about 1,000 cows in the Yolo-Solano-Colusa Cow Testing Ass'n, which has 33 members.

The reorganized California Holstein Breeders' Association will hold its first meeting at Napa May 5.

The American Guernsey Cattle Club will hold its annual meeting May 16, 1917, in New York City.

An Eastern Guernsey junior three-year-old has just completed a record of 14,219.8 pounds milk and 708.69 pounds fat.

Collins Bros. of San Leandro, who are supplying San Francisco hospitals with milk from 175 cows, have about 20 registered Guernseys.

Sixty grade cows auctioned at an average of \$97.65 on the Tony Amantis ranch of Ceres recently. One grade Holstein brought \$255.

The Porterville Co-operative Creamery has been leased for five years to the Exeter Creamery Co.; but the same brands will be used as before for the local output.

M. Hugener of Byron reports the purchase of the young Holstein bull Canary Segis Butter Boy, sired by Segis Pontiac De Kol Burke, grand champion Cal. State Fair, 1916.

J. S. Watson of Dixon reports that his herd of about 100 grade cows averaged 6,407.5 pounds of milk for the year, about one-fifth more than before he weeded out his boarders by testing.

The three creameries of Tulare recently paid out over \$100,000 for January butterfat. Prices ranged from 42 to 45½ cents for fat in cream, and up to 52 cents for fat in whole milk.

The Modesto casein factory is establishing stations at Crow's Landing, Gustine, and Los Banos to ship curds to the central factory. Skim milk has been contracted at 20 cents per cwt. on the farm.

The Bridgford Co. of Knightsen have just finished testing eleven cows 3½ to 7 years old which made 22.59 to 31.7 pounds butter and 449.6 to 640.5 pounds milk in seven days. Eight of them made over 25 pounds each.

The Western Dairy Products Show, to be held in Portland, Ore., Mar. 1 and 2, will include a program of exceptional interest led by U. S. Dept. Agr. investigators and dairy instructors of the Western colleges, and including discussions of the papers read.

The Gotshall Cattle Co. of Ripon are making extensive improvements on their ranch. They have 48 registered Holstein cattle, including 17 A. R. O. cows, a daughter of King of the Pontiacs, senior herd sire King Pontiac Ormsby Segis, and a junior sire who is a grandson of Colantha Johanna Lad.

The Holstein cattle sale of the California Pedigree and Sales Co. of Sacramento, which was to be held May 25 and 26 at the State Fair Grounds, has been postponed to the following week and the location changed to Davis. Thus it will come during Farmers' Week at University Farm and will not conflict with the Butte County Spring Festival.

A two-year Guernsey heifer owned in New York produced 12,378.8 pounds milk containing 711.43 pounds fat in one year of her first lactation period. She gained 200 pounds' weight during 14 months of lactation, producing each month more than her own weight of 5.75 per cent milk. She has been carrying a calf several months.

Australian butter will be the only real competitor of California butter in China after the war, according to a consular report. European and Siberian butter as well as the negligible home product, have proved very inferior. European tinned

cheeses, however, have been selling higher than the American product, due to our lack of cold storage facilities.

A. E. Slater of Pacheco, Contra Costa county, reports importation of a registered Holstein bull developed by Cornell University, New York.

Miss Valley Mead De Kol Walker, owned by the Santa Anita Rancho, freshened at 2½ years, and in a test begun 243 days from freshening produced in seven days 407.1 pounds milk containing 16.942 pounds fat. Her sire is Prince Gelsche Walker and her dam De Kol of Valley Mead.

The Alpine Evaporated Cream Co. has announced that a bonus will be paid Jan. 1, 1918, to all dairymen who bring their milk regularly to the factory throughout 1917. The first bonus was announced recently as eight cents per cwt. for the 4 per cent milk brought to the factory during January. They recently shipped 2125 cases of condensed milk to the Philippines.

Recent Jersey cattle sales of N. H. Locke Co., Lockeford, Cal., are: To A. J. and Nellie A. Morey, Orland, 5 heifers, carrying the blood of King's Valet, Grace's Fox, and Gertie's Son, and a young son of King's Valet and San Joaquin's Lottie, a cow of great capacity and large production, a foundation herd; to R. R. Smith, Orland, 6 young cows of good production, carrying the lines of the N. H. Locke Co. producing sires; to E. C. Rand of Brae Bourne Ranch, Santa Rosa, King's Gordon Fox of L, a great-grandson of King's Valet, Empress Lass and Champion Flying Fox.

HOGS.

Harry Murphy of Perkins has gone to Oklahoma to purchase a few carloads of Shorthorn heifers and bulls.

The River Bend Farm of St. Helena has just received two Duroc gilts from Ohio. They are bred to Tippy Col.

The River Bend Farm of St. Helena reports its four Defender-Orions Pal boars to be developing into championship form for the next State Fair. They average close to 200 pounds at five months.

The Imperial County Farm Bureau is working on a plan to grade hogs before shipment and ship in carlots of uniform size and quality to Los Angeles in order to make it pay better to raise good hogs.

County Counsel Murphy of Los Angeles is drawing up for the Board of Supervisors an ordinance that will require all garbage served on the big hog ranches in the county be sterilized by cooking at not less than 240 degrees F.

BEEF, SHEEP, MISCELLANEOUS.

Recent rains have simplified beef and sheep raising problems. Feed shortage was getting serious.

R. M. Dunlap of San Francisco writes from Omaha that he is to be home with some fine beef stock this week.

It is reported that Wm. H. Moffat of Nevada is contracting for unborn lambs to be delivered next fall at \$8 a head.

The Tulare County Pure Stock Breeders' Ass'n is already actively laying plans to help the fall livestock show to be held in Visalia just after the Kings County Fair.

The Golconda Cattle Co., which has 50,000 acres and about 25,000 sheep besides horses and cattle in Elko and Humboldt counties, Nevada, is arranging to dispose of this property.

New and simplified Government regulations concerning disinfection of imported hides to avoid bringing in anthrax, rinderpest, and foot-and-mouth disease, went into effect Jan. 1.

David J. Stollery, Sec'y of the

newly formed Cal. Shorthorn Breeders' Ass'n, informs us that the directors have signed articles of incorporation with a capital stock of \$5,000. There will be 5000 shares of stock issued with a par value of \$1 per share.

The community auction sale held by the Wasco Farm Bureau Center drew about 500 people and resulted in the sale of \$4758 worth. H. G. Hull sold 185 hogs averaging about 190 pounds, at \$9.40 f. o. b. Wasco, to a Los Angeles packer. Other similar auctions are to follow.

About 7000 cattle and sheep were reported lost on the National Forest Ranges of California in 1916. Of these, 1246 died of disease, 1552 from poison plants, 2249 from predatory animals, 1845 from accidents, etc. A total of 417,045 sheep and goats and 194,892 cattle and horses were grazed.

A Suisun subscriber believes that Senate bill 159 is written and pushed by a few wealthy cattlemen and is likely to seriously injure smaller beef raisers throughout the State if it becomes law. Every cattleman should get a copy at his library and study it; then inform his representative and senator as to his views.

The California Fair and Racing Ass'n is to meet at 1 p. m. Feb. 24 at Hotel Manx, San Francisco, to perfect organization and arrange a circuit for 1917 with uniform rules of operation. All interested in the annual fairs and race meetings in California are invited to attend. This seems to us good and commendable so long as they play fair and keep out gambling.

Ord L. Leachman, livestock marketing agent of the Glenn County Farm Bureau, has been in San Francisco the past week looking into the meat packing situation with a view of becoming thoroughly acquainted with that side of the livestock marketing problem. He represents over 200 farmers in Glenn county, receiving as payment for his work a 5 per cent commission on everything sold in less than carload lots and 4 per cent on carlots or more.

Another step in the way of co-operative marketing is being taken by the farmers about Ripon in the preparation for the big community auction sale that they have announced for March 3. A man is in the field listing things for sale and already over \$4000 worth of stock or farm articles of various sorts have been listed. A small commission of 1½ per cent will be charged to cover the expenses. Each person listing anything for sale has the privilege of one bid and all he is out if his goods are not sold is the trouble to which he has been placed in getting them to the sale and home again.

HORSES AND MULES.

A farm team auctioned at \$305 and a two-year colt for \$112.50 at a recent sale near Ceres.

George Gage of Sutter county is reported to be using music to charm the savage mules when breaking them to work. Must be rough riding for the music box.

Classified Advertisements

MISCELLANEOUS.

GROCERIES WHOLESALE—Our prices are the lowest and our quality the highest. Dollars saved on every order. Freight paid within 100 miles. Send for catalog. Greene and Company, Mail Order Grocers, 1264 Divisadero street, San Francisco.

EVERY SIZE WROUGHT IRON WATER Pipe and screw casing water pipe, guaranteed as good as new. Prices right. Send for catalogue. We beat no one; everybody gets a Square Deal. Weisbaum Pipe Works 160 Eleventh St., San Francisco.

SECOND HAND WATER PIPE and Screw Casing. New threads and couplings dipped in hot asphaltum. All guaranteed. Send us your inquiry. Shecter Pipe Works, 306-8 Howard St., San Francisco.

AT LAST THE PERFECT SILO—THE Star Round. No hoops. No bolts. No experiments. Any one can erect. Close price. Address D. O. Lively, 215 Hobart Bldg., San Francisco.

PATENTS THAT PROTECT are procured through Pacific Coast Patent Agency. Savings and Loan Building, Stockton, California. Established fifty years.

ASK FOR SNOW'S GRAFTING WAX—In use all over the State. If your grocer does not keep it, send to D. A. Snow, R. D., Box 548, San Jose, Cal.

TO REDUCE THE HIGH COST OF LIVING, send for our Wholesaler to Consumer Catalog. Smiths' Cash Store, 106 Clay St., San Francisco.

FOR RENT—By day or contract, one 75 H. P. Best Tractor engine, with moldboard or disc plow equipment. Box 192, San Leandro.

SEEDS, PLANTS AND TREES.

FREE 1917 PLANTING GUIDE and Pure Seed Book! 96 pages handsomely illustrated in many colors. Describes latest, best varieties vegetables, flowers, field crops, fruits, shrubbery, etc. A dictionary on gardening! Flower lover's delight! Field crop guide! An orchardist's manual! Berry-grower's book! A postal gets it. Don't buy seeds until you read it. Galloway Bros. & Co., Pure Seed Specialists, Waterloo, Iowa.

ALFALFA SEED—Common variety and Smooth Peruvian, good quality, excellent color, high germination test, grown in Arizona under ideal conditions. Do not buy until you have compared my samples and prices with seed others offer. E. F. Sanguinetti, Yuma, Arizona.

CITRUS TREES—all leading varieties. Large line Lisbon and Villa Franca Lemon, and Washington Navel Orange Trees. First-class stock and clean. Special prices to dealers or to growers in carload lots. Randall Brothers' Nurseries, Whittier, Cal.

STRICTLY FANCY SEEDS—Alfalfa, Scarified Sweet Clover, Red Clover, Timothy, Rye Grass, etc. Free Bulletin—"Sweet Clover in the Northwest." Write for samples and prices. Ralph Waldo Elden, Central Point, Oregon.

A SELECT STOCK OF Delicious Rome Beauty and Jonathan Apples, Royal Apricot, Tuscan, J. H. Hale and New King Peach, Russian Mulberry, Mission Olives, Cleaning-up prices. Threewit and Blom, Hemet, Cal.

WALNUT GRAFTING WOOD—Genuine Franquette. Same strain as Vrooman orchard was planted from. Willson's Wonder, grown by originator, F. C. Willson, Encinal Nurseries, Sunnyvale, Santa Clara Co., Cal.

ALFALFA SEED—New crop of choice home-grown seed; re-cleaned and guaranteed. Send for sample and price delivered to your nearest railway station. A. F. Scheidecker, Zamora, Yolo Co., Cal.

SEED CORN—White Dent. Largest growing variety. Heavy yielding. Fully acclimated. Selected ears or shelled to order. \$4.50 per cental C. W. Jenkins Live Oak

OLIVE TREES—Mission, Manzanillo, Ascolano. Propagated by me from trees of known bearing qualities. Guaranteed. L. T. Schwabacher, Hemet, Cal.

FRANQUETTE WALNUT TREES—Grafted on Black Roots. Vigorous stock at lowest prices. Ogden Bolton, Jr., Route 6, Santa Rosa, Cal.

FOR SALE—Gold Dollar and New Oregon Strawberry plants, \$3 per M. D. R. Bannister, P. O. Box 185, Oakdale, Cal.

FOR SALE—Black Walnut Seedlings, 4-6 ft., 15c. Mazzard Cherry Seedlings, 4-6 ft., 5c. C. R. McBride, Vacaville, Cal.

QUALITY TREES—Seedlings, 5c. Prunes, 10c. Walnuts, 30c. Cash Nurseries & Seed Store, Sebastopol, Cal.

RHUBARB ROOTS—Wagner's Giant Crimson, \$2 per hundred; 5c each. Currier Bulb Co., Seabright, Cal.

FOR SALE—Walnut Trees. Magnolia Nurseries, Whittier, Cal.

WANTED.

WANTED—Young men and women to attend the Western Normal Courses—Normal and Academic. The Normal Course gives an adequate preparation for teaching, at a great saving in time and money. Academic course gives practical finish to education. Write for Bulletin "A," Western Normal, 524 E. Market St., Stockton, Cal.

COUNTRY LANDS.

SMALL RANCHERS AND INVESTORS can buy from 1 to 5 acres cranberry peat land on easy terms at \$200 per acre. Similar lands produce 150 bushels to the acre, and cranberries sell from \$9 to \$12 per bbl. The coast consumes 20 times the present production. Do you know of any other crop that compares favorably with cranberry growing? Home markets, \$2.00 per bbl, higher price than Eastern grower gets owing to freight west. Two planted acres gives independence. Cranberry grower myself. Henry S. Gane, R. F. D., No. 3, Santa Barbara, Cal.

HIGH CLASS ALFALFA RANCH—135 acres, producing between 800 and 1000 tons per year. In irrigation district, close to Manteca. Adjoining two main-line railroads, siding on ranch. Fronting on highway. All new buildings. Entire ranch fenced. Fairbanks Scales, telephone, etc. Guarantee a rental of at least \$20 per acre. Price \$35,000. Terms. Will sell half. Address owner, A. S. Bomberger, Rural Route 1, Lathrop, Cal.

HUMBOLDT STOCK RANCHES—\$10.00: Safe Sheep Range of 5000 acres on State Highway. Neighborhood controlling coyotes; three pack bounds. \$10.00: 5700 acres Cattle Ranch near Railroad. Joins Forest Reserve. 500 acres tillable. Good soil. \$4,000.00: Half cash. Worth it. Will Perry Ranch, about 480 acres, with tools, Alderpoint. See owner. Bad health. C. E. Robertson, 105 Montgomery Street, S. F.

FOR SALE—948-acre stock ranch in Napa county. Price, \$17,000 net. All modern improvements. Living creek. 125 acres hay, grain and alfalfa land. Free range adjoining. 175 head of cattle can be purchased if desired. Liberal terms. Owner, Box 363, Napa, Cal.

FOR SALE—BARGAIN—Coachella Valley land. Level, silt, no alkali. Easy water, best quality. Station three and half miles. Dates, earliest fruits and vegetables. Auto road. Owner, 1142 West 11th St., Riverside, Cal.

WANTED TO RENT—Alfalfa ranch. Dairyman with small herd registered Holsteins wants to rent 40 acres of good alfalfa. Don't answer unless you have a good stand and good water. References furnished. Address, Box 470, Pacific Rural Press.

FOR SALE CHEAP—320 acres good level land in Klamath County, Oregon. For information, address owner, W. H. Johnson, 22 Main Ave., Watsonville, Cal.

FREE NEW BLUE BOOKLET—State, Government and Indian Lands. Bargains overlooked. Joseph Clark, Sacramento.

The Percheron Society of America offers prizes to be awarded to registered Percheron mares and stallions at the State Fairs of California, Oregon, and Washington, and many others.

American mules are reported to instill confidence in European soldiers by their nonchalance under fire and their endurance of hardships. In the Somme battle it is said that in proportion to the number used, one mule outlasted six horses.

The admission to registry in the Percheron Society of America of Percherons heretofore recorded in the Forney or French Draft Associations, tracing to imported stock, or to animals of record in the Percheron Society, has aroused great interest, and a great many breeders made every effort to avail themselves of the opportunity to record their animals before the time limit expired Feb. 12. The delays incident to obtaining necessary evidence have been such that the Board of Directors granted an extension of the time limit for the admission of such animals until May 1, 1917. The officials of the Forney Association have lent all possible aid to breeders desiring to transfer their Percherons to the Percheron Society of America, and J. F. and J. A. Forney themselves (J. A. Forney being the Secretary of the so-called Forney Association) completed applications Feb. 8 for the registration of 117 Percherons heretofore recorded in the so-called Forney Association, which they desired to have transferred to the Percheron Society of America.

IMPERIAL DUROC-JERSEY SALE.

Nineteen registered Durops of fancy championship breeding are to be auctioned at the Houck ranch near Grape, Imperial county, Feb. 26, at 10 a. m. Free conveyances will meet trains and free lunch will be served. The stock is largely of King the Col., Pathfinder, and Crim-son blood with some of Taxpayer and Commander breeding. Other hogs, cattle, horses, and machinery will also be sold to the highest bidders.

LIVESTOCK DIRECTORY.

Rates in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

SWINE.

Poland Chinas.

SMITH'S POLAND-CHINAS—Sows and gilts bred to Joker, First Prize Boar at the Wisconsin State Fair, 1915. These sows and gilts, sired by Iowa Wonder, who is a son of A Wonder, the most celebrated Poland-China boar, living or dead. Litters from this mating are the best I have ever seen anywhere. Prices low quality considered. Will sell one or a carload. As a special inducement each purchaser will be given a year's subscription to the American Swineherd, the best swine paper published, and a copy of the Handbook on the Sow; also a copy of the Pig Feeders' Manual. Geo. A. Smith, Corcoran, Cal.

SEND FOR FREE CATALOG—Finest ever issued. Telle of the famous Whitten Ranch money-making strain of Big Type Poland-Chinas. Make greatest weight in shortest time at lowest cost topping market at 225 lbs. in 6 months. 600 head both sexes, all ages, reasonable prices. Satisfaction guaranteed. Ranch in Tulare County, but address owner, R. H. Whitten, 610-A Security Building, Los Angeles.

GRAND CHAMPION SUPERBA POLANDS—A few choice spring Superba boars ready for service. Sows bred to Superba for fall litters. Prices reasonably low. Rough's Greenfields, Arlington Station, Riverside, Cal.

BOARS of serviceable age all sold. We have a few choice gilts bred to John Henry; an exceedingly choice boar. Also have a fine lot of Fall pigs, either sex. Bar N Ranch, E. A. Noves & Son, Props., Sutter, Calif.

POLAND-CHINAS—Bred gilts, \$15; young boars, \$10 and \$15; bred sows, \$25. Weanlings, either sex, \$6. Registered and crated, purchaser to return crates. E. A. Hall, Watsonville, Cal.

REGISTERED POLAND CHINAS—Young boars ready for service. Weanling pigs, both sexes. Prices attractive for quick sales. J. H. Cook, Paradise, Cal.

LAKEVIEW STOCK FARM POLAND CHINAS are money-makers. Satisfaction or money refunded. Geo. V. Beckman & Sons, Lodi, Cal.

POLAND CHINAS—Big type. Shoats, either sex, or in unrelated pairs. O. L. Linn, Linnview, Route A, Modesto, Cal.

REGISTERED POLAND CHINA SWINE—Prize-winners. Finest stock in the State. \$20 up. M. Bassett, Hanford, Cal.

POLAND-CHINAS—Stock for sale at all times. We please you or refund your money. W. A. Young, Lodi, Cal.

POLAND-CHINAS—Prize-winners. Money-makers. W. Bernstein, Hanford, Cal.

REAOAKS RANCH herd of registered Poland Chinas. W. J. Hanna, Gilroy.

REGISTERED POLAND-CHINA HOGS—J. A. Clark, R. 4, Lodi, Cal.

POLAND-CHINAS—Big type combined with quality. Choice bred sows, gilts, boars. W. D. Trewitt, Box 82A, Hanford, Cal.

BIG-TYPE POLAND CHINAS—Stock from the best herds of the Middle West. N. Hauck, Alton, Humboldt Co., Cal.

REGISTERED POLAND-CHINAS and Duroc Jerseys. Cholera immune for life. T. H. Beckman, Lodi, Cal.

REGISTERED POLAND-CHINAS—Prolific, pabulous, profitable porkers. Choice boars now ready for service, \$25 each. Weanlings, \$15. Dr. J. A. Crawshaw, Hanford, Cal.

POLAND-CHINAS—Large type. The Browning Stock Farm. W. H. Browning, Woodland, Cal.

DEACON RANCH POLAND CHINAS—Prize winners. Young stock reasonable. Box 27A, Davis, Cal.

KNOB HILL STOCK FARM—Registered Poland-China Swine. A. M. Henry, Farmington, Cal.

AMAWAGE FARMS—Poland-China hogs and Holstein cattle. G. H. Loughery, Visalia, Cal.

Berkshires.

GRAPEWILD FARM BERKSHIRES—World's Fair Grand Champion Grand Leader 2nd heads our herd, not only himself a champion, but the sire of Champions. At the 1916 California State Fair his daughters won first in all of the senior sow classes, including the Grand Champion Sow. At the 1916 Oregon State Fair a Grand Leader sow was Junior Champion. We are offering a number of choice boars of exceptional breeding and are also booking orders for Fall pigs. A. B. Humphrey, Escalon, San Joaquin Co., Cal.

REGISTERED BERKSHIRES—Progeny of Improver B. Young stock now ready for sale. Start your herd with breed and strain of established reputation for California conditions. Geo. G. Meckfessel, Berlin, Cal.

BERKSHIRES—I have one of the best herds on the Pacific Coast, including Grand Champion Sow, Reserve Grand Champion Boar under one year, Third Aged Boar, etc. Frank A. Brush, Santa Rosa, Cal.

CHOLERA IMMUNE BERKSHIRES—Fine sows bred to excellent boars for Spring farrow, \$50 to \$60 each. Splendid August and September boars and gilts, \$20 and \$25 each. W. H. Waugh, Riverside, Cal.

IMMUNIZED NORMANDY BERKSHIRES—Good type. Breeding stock, any age, for sale at all times. Cast iron guarantee. Arlington Smith, Visalia, Cal.

BERKSHIRES—Bred sows and weanling pigs. Write for prices and pedigrees before buying. Butte City Ranch, Box P, Butte City, Glenn Co., Cal.

REGISTERED BERKSHIRES—Special offering. Three service boars at prices to move them quick. Write us. Imperial Stock Farm, Morgan Hill, Cal.

FOR SALE—CHEAP—Registered Berkshire Boar, three years old, in fine condition. Address T. G. Hester, Morgan Hill, Cal.

ROSE CREST BERKSHIRES—Rivals Champion Best blood. Open and bred gilts. Service boars. F. L. Hall, Perris, Cal.

CARRUTHERS FARMS BERKSHIRES—Cholera immune. Second annual sale August 2, 1917. Mayfield, Cal.

30 REGISTERED BERKSHIRES—Boars and gilts for sale. J. H. Benedict, Lemoore, Kings county.

HOPLAND STOCK FARM—Registered Berkshires. Prices on application. Hopland, Cal.

REGISTERED BERKSHIRES—Geo. M. York, Modesto, Cal.

Duroc-Jerseys.

FIRST PRIZE HERD—Headed by Uceda Wonder, 2nd prize boar at Nebraska and a winner at Omaha, 1916. Grandson of Crimson Wonder Again and H. A.'s Queen. Entire offering of Spring pigs will be from 1st or 2nd prize-winners. Inquiry solicited. Haden Smith, Box 84D, Woodland.

REGISTERED DUROC-JERSEYS—Service boars from prize-winning stock are money-makers. They grow faster. New England California Corporation, Ripon, Cal.

CROLEY'S BALANCED HOG FEED—The cheapest feed to fatten hogs. Write Geo. H. Croley Co., Inc., Live Stock Supplies, 631-637 Brannan St., San Francisco.

DUROC JERSEYS—Herd boars. E. N.'s Colonel and Tulare Boy. Sweepstakes winner at Fresno, 1915. Choice breeding stock. J. P. Walker, Visalia.

FOR SALE—2-year-old registered Duroc Boar, B. S.'s Crimson Wonder. A proven breeder. Satisfaction guaranteed. Brother & Ward, Chowchilla, Cal.

RANCHO RUBIUS DUROCS—All sold except a few July and September gilts. Extra good. Write for prices. Elmer Lamb, Ceres, Cal.

REGISTERED DUROCS of guaranteed breeding. All ages. Weaned pigs, \$10. H. E. Boudier & Son, Napa.

HEAVY BONED DUROCS—A few service boars for sale. Ormondale Co., Route 1, Redwood City, Cal.

REGISTERED DUROCS—Crimson Wonder stock. Young stock, both sexes. L. D. Collins, Denair, Cal.

REGISTERED DUROC-JERSEY SWINE—Both sexes. Big-boned type. B. F. J. Kendall, Hardwick.

WINTON DUROC-JERSEY FARM, Winton, Cal.—High-class pure-bred hogs both sexes any age.

BIG TYPE DUROCS—Quick maturing. Easy keeping. Frederick M. Johnson, Napa, Cal.

DON HERMANOS REGISTERED DUROCS—Duroc & Pickersill strain. Cal.

DUROC-JERSEY REGISTERED HOGS—River Bend Farm, St. Helena, Cal.

CURTIS DUROCS of either sex at all times. E. C. Curtis, Napa, Cal.

DUROCS—Big type, both sexes for sale. Ed. E. Johnson, Turlock, Cal.

REGISTERED DUROC-JERSEYS—S. S. Southworth, Napa.

Yorkshires.

LARGE YORKSHIRES—The ideal hog for the progressive farmer. Young stock for sale. A. L. Tubbs Co., Calistoga, Cal.

LARGE YORKSHIRES—Choice spring boars, gilts, and weaned pigs from Champion sow P. I. E., or from breeding of champion boar and sow, Sacramento, 1916. If you see them grow you will like them. Rivera Farms, Paradise Road, Modesto, Cal.

Chester Whites.

BILLIKEN HERD OF CHESTERS—The big prize-winners at the 1916 California State Fair. A real utility breed that makes money for its owners. A few young service boars left; twenty young, open gilts that will be bred as may be desired by buyer. Write for the booklet Chester Whites. C. B. Cunningham, Mills, Cal.

REGISTERED IMPROVED CHESTER Whites—Two service boars, one brood sow. Write for price. G. H. DuBois, San Martin, Cal.

REGISTERED IMPROVED CHESTER Whites—Grizzly Bear Ranch, East Auburn, Cal.

Essex.

LITTLE BLACK ESSEX—Service boars and weanlings. Only herd in the State. Limited supply. Yolo Essex Herd, L. W. Millsap, Yolo, Cal.

Hampshires.

BELLA VISTA HAMPSHIRE SWINE—from prize-winning stock. J. W. Henderson, First National Berkeley

DAIRY CATTLE.

Holsteins.

FOR SALE—From 1 to 100 extra fine, straight, well-marked, light colored, highly bred, registered Holstein heifers from 6 to 18 months old. They are rich in the blood of King of the Pontiacs, Pontiac Korndyke, Hengerveld De Kol, Rag Apple Korndyke 8th, King Segis and other most celebrated sires of the breed. Prices very reasonable. Write Geo. A. Smith, Corcoran, California.

25 HIGH-GRADE HOLSTEIN HEIFERS, sired by Creamcup Sir Walhalla Pontiac 96169, coming with second calf by a high-class bull. All tuberculin tested. Also 35 yearling heifers, sired by same bull. Terms and prices, apply to W. H. Nichols, 2552 Haste St., Berkeley, Cal.

REGISTERED HOLSTEINS—Herd sire King Korndyke Hengerveld Ormsby 7th, 86623. His full sister as Junior 3-year-old made 32.04 lbs. butter in 7 days. The record of his dam and his sire's dam averaged 30.98. George Kounias, Modesto, Cal.

FOR SALE—Sir Dutchland Princess May, Princess Alcarra and Zingana from Stanford's. Also L. J. Mechthelds and daughter from Morris'. Five Holstein heifers bred to this sire. Quitting dairy business. C. K. Morse, Live Oak, Cal.

REGISTERED HOLSTEINS—Grandsons of King Segis and of world's record cow Creamcup Vale. Will build up the production and value of your herd. Write or call and see them. F. H. Stenzel, San Lorenzo, Cal.

WANTED—One registered Holstein bull and six registered Holstein cows or heifers with calf. Light colored preferred. State price and pedigree. Must be good and price right. Address H. H. Dunning, Marysville, Cal.

TULARE GUERNSEY AND HOLSTEIN Farm is offering young bulls of both breeds. Excellent breeding. Prices reasonable. W. J. Higdon, Tulare, Cal.

THE MCCLLOUD RIVER LUMBER CO., McCloud, Cal.—High-class thoroughbred Holstein bulls for sale. Write for prices and pedigrees.

BARGAIN—Registered Holstein Bull, 2 years, out of 33-lb. stock. A beauty. Must sell. Terms or note. Box 480, Pacific Rural Press.

J. H. HARLAN, WOODLAND, CAL.—Breeder of Registered Holsteins. Sold out at present. Watch for announcement on King Valdessa.

FOR SALE—Two registered Holstein cows with A. R. O. records. Write for particulars. J. W. Benoit, Route C, Modesto, Cal.

THE HENDERSON CO.—Breeders and importers. Registered Holsteins. Sacramento Bank Bldg., Sacramento.

BREEDERS OF REGISTERED HOLSTEIN cattle and Berkshire pigs. Whittier State School, Whittier, Cal.

REGISTERED HOLSTEINS—A. W. Morris & Sons, Corp., Importers and Breeders. Woodland, Cal.

CREAMCUP HERD—Registered Holsteins Pontiac calf calves. M. Holdridge, Modesto, Cal.

SUNNYSIDE HERD—Registered Holstein cattle. R. F. Guerin, R. 3, Box 58, Visalia.

REGISTERED HOLSTEIN CATTLE—E. E. Freeman, Route B, Modesto, Cal.

REGISTERED HOLSTEIN BULLS for sale. Sunnybrook Ranch, Willits, Cal.

REGISTERED HOUSTON BULLS for sale. C. L. Morse, Route B, Modesto, Cal.

BREEDERS OF REGISTERED HOLSTEIN Cattle—McAlister & Sons, Chino, Cal.

REGISTERED HOLSTEIN BULLS, \$50 to \$150. Glorietta Stock Farm, Woodland, Cal.

REGISTERED HOLSTEIN BULLS from A. R. O. dams. B. F. Anderson, Modesto, Cal.

GOTSHALL AND MAGRUDER—Breeders of Registered Holstein-Friesians. Ripon, Cal.

CHOICE HOLSTEIN bulls for sale. No females. Millbrae Dairy, Millbrae, Cal.

REGISTERED HOLSTEIN-FRIESIAN CATTLE—J. M. Campbell, Escalon, Cal.

BREEDER OF HOLSTEIN-FRIESIAN CATTLE—Dr. Ben Stetson, Napa, Cal.

A. R. O. HERD OF HOLSTEINS—Alex. Whaley, Tulare, Calif.

Jerseys.

JERSEY BULLS AND BULL CALVES—Sons and grandsons of 2 and 3-lb. cows. None better. Cheap for quality. N. H. Locke, Lockeford, Cal.

VENADERA HERD OF JERSEYS offers calves from Register of Merit Cows with official yearly records. Write for list of bulls. Guy H. Miller, Route 1, Modesto, Cal.

BREEDER OF REGISTERED JERSEY Cattle—Duroc Swine. Young stock for sale. W. J. Hackett, Ceres, Cal.

JERSEY BULLS AND HEIFERS from Register of Merit Cows for sale. C. G. McFarland, R. 2, Tulare.

YOUNG REGISTERED JERSEY BULL Calves at reasonable prices. O. J. Ames, Oakdale.

JERSEY BULLS—Sons of Gertie's Lad and Gertie's Son's Victor. A. A. Jenkins, Tulare, Cal.

REGISTERED JERSEYS—Young bulls and bull calves. T. B. Purvine, Petaluma, Cal.

JERSEY BULLS from Register of Merit cows. C. D. Hayworth, Modesto, Cal.

Guernseys.

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High Production and Fat Prize from Grades

[Written for Pacific Rural Press.]

By securing an average of 1436.5 pounds milk containing 56.605 pounds of butterfat during the month of January for five grade cows, K. W. Abbott of Milpitas, Santa Clara county, was able not only to win the monthly prize of \$25, given by Pacific Rural Press to competitors in the California State Dairy Cow Competition, but was also to exceed the average fat and milk production of the November and December prize-winners. The best herd competing for this prize in November averaged 1276.8 pounds milk and 46.587 pounds fat, and the December winners averaged 1085.4 pounds milk, containing 49.31 pounds fat.

While little is known about the breeding of the January winners, they are all distinctly Holstein in appearance so far as color is concerned, although some of them are small of frame, of extreme dairy type and high testing, thus indicating Jersey crosses some time in the past.

Preparation.—No preparation previous to the beginning of the testing was done by Mr. Abbott, other than that ordinarily done with the entire herd of some 60 cows which are milked on the ranch. Always it is the practice to start to dry the cows up at ten months after freshening, having them completely dry for a month or six weeks before freshening, during which time they are run on salt-grass pasture and fed the refuse hay from the milking cows' feed-racks. About a week before freshening time the cows were taken up and put in the regular strings at the milking barn, where they were fed the same mixture as given the fresh cows, but in smaller quantities. This is gradually increased after freshening till they are on full feed.

In selecting the contest cows, general conformation was the chief reliance in several cases owing to the fact that nothing of their past history was known. With others, however, the regular twice-a-month weighing of the milk which is practiced with all of the cows was used to good advantage, as it gave a fairly good idea of the heavy-producing cows. For the purpose of picking contest cows, however, it was not as reliable as it might have been, as no milk testing is ever done, the milk being sold as whole milk and only the average test of the entire herd being considered necessary.

Feeds.—The feeding of this heifer differs from that of most other herds in the State because of the amount of pea-vine silage which is used in the ration. This is a by-product of the pea canneries that is siloed in the ordinary manner, and compares favorably with corn silage. By furnishing succulence it is a good substitute for pasture, as is the case with other siloed crops. The amount of this consumed by the winning cows is difficult to estimate, as they were fed silage in the corrals with the other cows. The practice is to have two feeding corrals, a load of silage being hauled into each field, where it is dumped into troughs. The cows have access to the silage in one corral in the daytime and the

other one at night, eating as much as they care for.

Alfalfa hay is used as a roughage, only five pounds per day per cow having been fed to the contest cows. This was baled hay, purchased from the grower and of just ordinary quality.

The concentrated feeding stuffs used for the entire herd are in the following proportions: Dried beet pulp, 100 pounds; Suremilk, 100 pounds, and 110 pounds bran. The beet pulp is mixed with sufficient water to thoroughly moisten it and then well mixed with the bran and Suremilk. A scoopful of this mixture was fed twice a day to each test cow.

The Cows.—Melba, the highest testing cow of the five, was purchased Dec. 4, 1916, with some others from a herd that looked to be poorly bred and cared for. She dropped her calf on the railroad car, milking about two months before she was put on test. She is an old cow, small in frame, possessing good dairy type, but not expected to do much when testing was started. She was bred January 10, and is safe in calf. While Holstein in color, she apparently has considerable Jersey blood in her, judging by size of frame and test of milk. Her production for the month was 1457 pounds milk containing 62.360 pounds fat with a test of 4.28 per cent.

Pet, the second of the five, is about six or seven years old, having been selected several years ago with 13 others as the best prospects in a herd of 300 head of grades. Her milk has been regularly weighed since she was added to the Abbott herd and she was considered a likely prospect on that account. She was dry 63 days, freshening December 24. During the month she produced 1605.8 pounds milk containing 59.415 pounds fat having an average test of 3.70 per cent. She is doubtless of Holstein breeding, being moderately large and well marked.

Rilla, third in the list, is all black in color, about six or seven years old. While not bred by Mr. Abbott, she has been in his herd four years, being among the best 10 or 12 cows in the herd during 1916, with a nine months' production of 10,450 pounds milk. During the first three months of her present lactation period she has produced 5,073 pounds milk as compared to 4,393 pounds during the first three months during 1916. She was dry 58 days before freshening October 13. During January she produced 1661.6 pounds milk containing 56.328 pounds fat with an average test of 3.39 per cent.

Rosie, fourth from the top, is thought to be purebred, although her previous owner lost track of his breeding records and sold her as a grade. She is about seven years old, of moderate size, narrow but deep barrel and otherwise of good dairy type. In previous years she has never been a heavy milker but has been a persistent one always. She was dry 72 days, freshening October 11, producing during January 1181.1 pounds milk, containing 52.677 pounds fat with an average test of 4.46 per cent.

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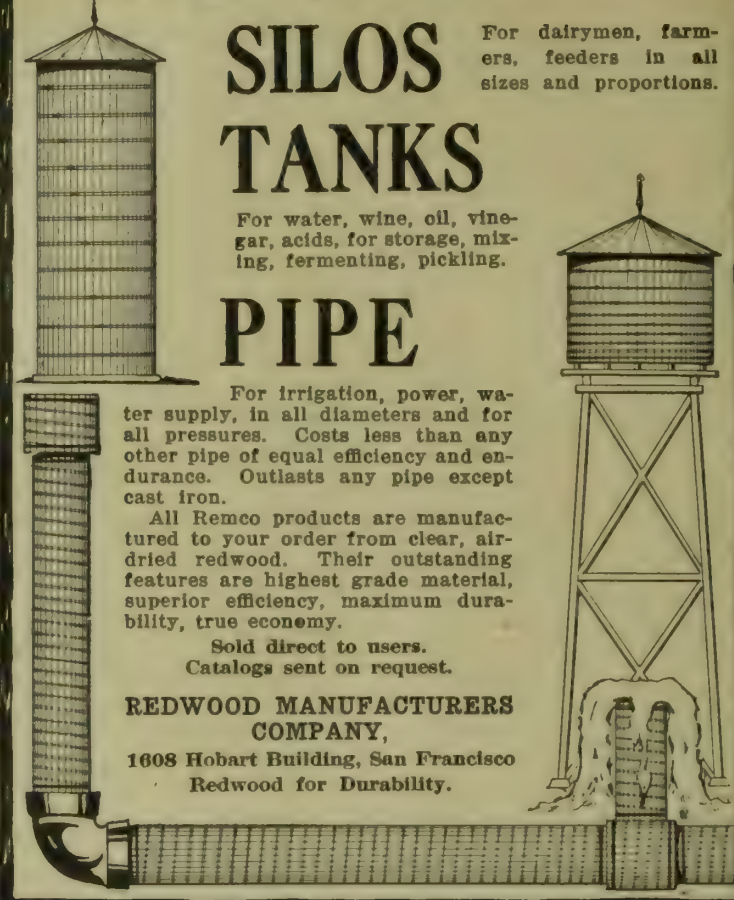
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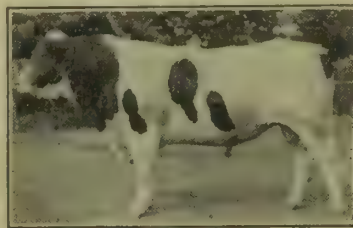
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No. 2—Born Sept. 2, 1915. His dam is a 21-25 4-yr old, sired by a son of Beryl Wayne Korndyke, who has two 30 lb. daughters. His full sister has a record of 18.56 lbs. butter in 7 days at age of 2 years 3 months and will be kept on test for the year.

No. 2—Born Sept. 2, 1915. His dam is a heavy producer and will be put on test next time she freshens. His full sister has a record of 19.36 in 7 days at 2 years 6 months and will also be kept on test for the year. The bulls are nicely marked, have perfect top lines, are good individuals and both sired by Prince Alcartra Korndyke, who now has 6 A. R. O daughters and more coming.

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Emeline was purchased in dam, born on the ranch June 22, 1912, and raised by Mr. Abbott. She was sired by a purebred bull and out of a grade cow. She is good sized and of satisfying dairy conformation, freshening with her second calf November 7, 1916, after being dry 52 days. Her January production was 1444.6 pounds milk, containing 52.150 pounds fat with an average test of 3.61 per cent.

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The French View of American Horses.

What is said to be the first time in history for a French breeder to address a gathering of American breeders was at the meeting of the Kansas State Horse Breeders' Ass'n Feb. 9, when Louis Aveline, a breeder of Percherons before the war, in France, and since then in charge of horse buying for the Allies, in this country, addressed the gathering.

In commenting on the buying operations of his country in America Mr. Aveline said:

"In the beginning the needs of the war had compelled us to buy cavalry horses. We found them in Montana, Wyoming and Texas; a few in the East; that is, Virginia, Kentucky and Tennessee. Unfortunately, the western horses were a little wild and small. Later, our needs were especially for artillery and transport horses. Particularly in Iowa, Kansas, Nebraska and in the Western States, Oregon and Washington, we found very good artillery horses. [We presume California and Nevada horses were included in this reference.—Eds.]

"I must also say that the horses we like best for artillery service are those having Percheron blood. I do not say so because I am from Le Perche, but it is also the opinion of all the English, Italian and Belgian commissions. Nearly all these commissions can tell you by the qualities and defects of each horse presented of what descent it is, whether Percheron of Le Perche or of Clyde or Belgian. The English have even demanded in their contracts a certain proportion of horses with Percheron blood.

"The allies have bought nearly 1,000,000 horses in the United States, mostly artillery. The artillery horses that we buy are from 1100 to 1200 pounds in weight, many of them are of Percheron descent, while among the heavy artillery, or transport horses, which must weigh more than 1300 pounds, are found horses from all breeds. But, even in this class, we prefer descendants from Percherons, because with their bulk and heavy bones they always have energy and action which are not found in the descendants from the other breeds. They can trot, and even gallop. All grey horses (which proves that they are related to Percherons) are acceptable to my fellow-officers in active service. It is true, I am sure, that it is in this color that we find the greater proportion of our best horses. Unfortunately, we cannot accept them all, because the grey horse is too visible on the battlefield. But do not reject them for that reason. The war will not last forever, and

when the grey colts, which are born now, will reach the age when they can be sold, then the demand will not be for war horses, and at this time they will take grey horses indifferently."

Feeding.—Of the feeding and care of colts in France he stated that after weaning time, the colt is given about six pounds of oats every day in two times. The ration is increased to about fifteen pounds while he grows older. We always give crushed oats, as it is better digested by the colt. During winter, grass being scarce, we give plenty of hay to the colts under the sheds. The fillies are always kept by the farmer to take the place of the mares. He weans them himself, leaves them in the pastures until they are two years old, and then he begins to put them to work. When they are three years old, they can take the place of older mares, because when the mares, at a certain age, are not in foal or do not produce any more, or are not of an exceptional line of breeding, they are sold as draft horses, either at home or abroad. That is why the farmer in our country never has very old mares on hand. His stock is constantly renewed. We claim that an animal of young or middle age produces better than an old one.

That we have let our taste for size run away with our better judgment is the belief of Mr. Aveline, as quoted below:

"In the choice of stallions, we put less importance than the Americans on the weight. When you speak of a good horse here, they always ask: 'How much does he weigh?' You will never hear that in France. If we have heavy Percherons, we produce them by selection, no more no less than to meet the demand of the American market, because we find that the bigger the horse, the more apt to be lymphatic and slow it is.

"In regard to the selection of a stallion, I cannot insist too much on his line of breeding. The best horse does not always produce the best colts. But the best family of horses almost always gives the best results.

"As to your work horses, I have found them very good. I was even surprised to find such good horses, and I must confess that I bought lately on the St. Louis market some remarkable geldings and mares, the mares as good as those of our own production. I do not speak of geldings because we do not castrate our colts."

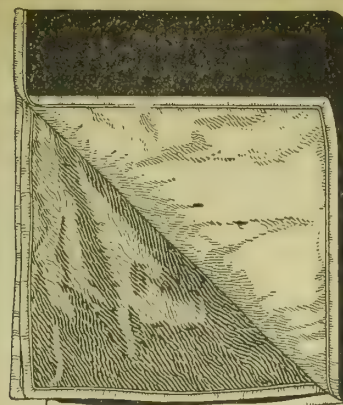
The stalls of the horse stable should not be planked clear to the top. Use planking only for a barrier, allowing free circulation of air.

ARE UMBRELLA TREE SEEDS DANGEROUS?

To the Editor: Are the seeds or balls of the umbrella tree poisonous to hogs or stock?—F. W. C., Coalinga.

[Answered by Dr. H. M. Hall, Berkeley.]

Reports as to the poisonous properties of the fruits of the umbrella tree are contradictory and I have no first-hand knowledge to offer. Bailey's Cyclopaedia of Horticulture states that birds and cattle feed upon them. Another report says that in Arizona hogs have been poisoned by eating the seeds and similar reports come in from time to time in California. It is possible that only certain kinds of animals are poisoned or that it requires a large amount of seed. At any rate, it is advisable to feed them cautiously, if at all, and to carefully watch animals that have access to the trees when the seeds are falling.



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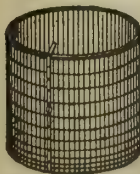
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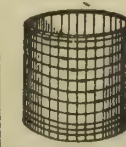
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Raising Poultry for Profit

QUESTIONS AND ANSWERS.

[Written for Pacific Rural Press by Susan Swainsgood, Pomona.]

Chickens and Turkeys Ailing.—I have a flock of 100 R. I. Reds—pullets and cockerels. Suddenly the entire flock took cold, running at nostrils, eyes, etc. Some had pneumonia, rattling and kicking constantly. Those running at nostrils I treated successfully. On some of the pneumonia ones I used Bipene in nostrils and throats and blue-stone in the water and coal oil in the feed, which was bran or soaked barley. Some fat pullets that showed no signs of being sick died sitting or lying down. Some got lame in one leg and could not walk a step—never got better. I also lost several turkeys that showed little signs of illness. Some hens die while on the nest laying. Have not lost any for a week. I feed barley, bran and pumpkins and green barley for greens, and they have range.—Mrs. S. B. E.

You surely have your hands full, but the trouble has been that you did not catch the first ones that took cold and segregate them. If you had removed them and treated them with a little physic, then fed them well and cleaned up yards, houses, etc., you would have got them over it. Range stock are much more difficult to handle than yarded stock—it is harder to control them. Again, your feed is not good enough for sick fowls. All people who lose fowls by roup, colds or kindred diseases do so from two causes—contagion and lack of nourishment. A sick chicken is like a sick animal or a person, if you please—they need something to build up the tissue torn down by disease. Warm milk and bread, parched grain and all the meat they will eat is none too much for them. In cases of pneumonia, medicine of any kind is little use, the fowl needs warmth and something to keep the fever down.

Some people think they have pneumonia when it is just canker of the throat. In real pneumonia the temperature rises and the bird is very hot—not in just one place, but all over, and if the bird is kept warm and the fever kept down she will get better. A little aconite in the drinking water is a help, but don't force bluestone down a fowl that has pneumonia—it is sure death. Build up your flock by feeding more grain and less pumpkins, and give them a little tincture of iron in the drinking water every day. You will have to keep all other water away or they won't drink it. Put about ten drops to a quart of water and keep it up for a week or two. See that your buildings are free from drafts. Air through a crack in the walls sometimes strikes just one fowl, starts a little running at the nostrils, and that raises a disturbance in the whole flock.

Bubbling at Nostrils.—My chickens are bubbling at the nostrils and eyes, have thick mucus in roof of mouth, but no canker in the throat. Some of them go light. First symptoms are gaping.—Mrs. S. J. F.

Wherever there is gaping it is a sign of canker in the windpipe, though you may not see it. The most humane treatment is to pour a little peroxide of hydrogen down the throat, then hold the hen's head

down until the froth escapes. For the bubbling at nostrils, swollen eyes, etc., take a can of coal oil, then, holding the chicken firmly in one hand, take the head in the right, dip and hold it in the coal oil until it fights for breath, then give it breathing space, and dip again. Wipe off the superfluous oil, give the fowl a Bromo-quinine pill, such as you take yourself, and put it in a coop by itself and feed well. When chickens are treated early it is easy to cure them, but if left to run on several days or weeks it is a difficult job.

Give the whole flock a dose of coal oil in the drinking water. The oil floats on top, and when the chicken goes to drink the oil goes up the nostrils and heals and cleanses them. This is an old-fashioned way of giving coal oil, but I have not found anything modern that beats it. As stated before, the coops, yards, and even drinking and feeding vessels must be scalded, or otherwise cleaned and disinfected before you can get rid of this trouble, because it is likely to break out at any time if the germs are left there. To get rid of it means much more than handing out a bit of physic to a hen or two; it means work. Spade up the ground and clean up everything the chickens touch.

Feeding Young Turkeys.—I have two lots of turkeys, one lot three weeks old, the other five days. Will you please tell me how to feed them after this? Have had good success feeding so far from your directions, and as I do not know anything about young turkeys or chickens must depend on you. Which is best for chickens, clabbered milk or skimmed sweet milk? We put Lee's egg maker in the mash—is that supposed to take the place of beef scrap? We are also putting beet pulp in the mash. Do you know if that is all right?—Mrs. F. C.

The best way to feed young turkeys is to forget to feed them at all half the time. Just let them rustle, and when you do feed do not make any radical change from what you have been feeding. If you have success with the bread, feed them a less quantity and give a little more raw cornmeal mixed with curd and a little cracked wheat mixed in. The idea is to soften the cracked wheat so that it won't swell in the turkeys' craw—but don't overfeed. It is overfeeding that kills young turkeys, and a lack of exercise. Make them get out and rustle. I prefer sweet skimmed milk for chickens—it is clean and does not bake on their heads and combs like sour milk. Beet pulp is all right as a filler—this means if you have no green feed the pulp can be made a substitute. Nothing takes the place of animal food. Fish meal will take the place of beef scrap, but not egg powder.

I trust the good readers of the Pacific Rural Press will not expect me to answer questions by mail. There is not another agricultural paper in the State that gives so much for so little, so please try to send in your inquiries in a way that will benefit others besides the correspondent.

One turkey gobbler is usually mated with 15 turkey hens.

Poultry Breeders' Directory.

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EXTRA QUALITY White Leghorn chicks, 12c until March 1st, then 10c. Carefully line bred from MacFarlane, Young, Martin, and Cyphers strains of foundation stock. Eggs, \$1.50 per 15, \$2.50 per 30, \$5.00 per 100, \$50.00 per 1000. Acres of free range connected with our breeding pens, 20,000 feet under roof. Only Jubilee incubators used; disinfected every hatch. Don't save 2c per chick in buying, and lose a dollar per pullet in raising; get the Best and Succeed. Newton Poultry Farm, Dept. 1, Los Gatos, Cal. Catalogue free.

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WHITE PLYMOUTH ROCKS—Baby Chicks, hatching eggs, from heavy-laying strain of Hogenized layers. The following winners at the California State Poultry Show, Dec. 6-8, 1916, show the quality of my flock: 1st for best egg-type pen; 1st for best exhibition pen, special for best egg-type individual; 2nd and 3rd exhibition pullets and 3rd exhibition cockerel. Mrs. J. B. Tupper, Route A, Ceres, Cal.

BARRED PLYMOUTH ROCKS—COCKERELS—Cockerels—Cockerels—Yes, we have them; also Hens and Pullets—all bred from our Champion Winners at California's leading shows. Also hatching eggs. If it's Barred Rocks you want, get in touch with me right away. Have bred them exclusively for nineteen years. Send for Catalog, Chas. H. Voden, Box 398, Los Gatos, Calif.

"FINEST HATCHERY IN THE WORLD"—Baby Chicks, White Leghorns, and Rhode Island Reds, settings, 100's, 1000's, hatched right in our \$60,000.00 brick and concrete hatchery from our quality heavy layers. Reasonable prices. Stock, Hatching Eggs. Pebbleside Poultry Farm and Hatchery, Sunnyvale, California.

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WHITE PLYMOUTH ROCK, White Leghorn Incubators, Chicks, Breeding stock. Eggs high class. Scientifically bred. Awarded all first prizes, California State Fair 1916. Make your arrangements for 1917 delivery of chicks. Mahajo Farm, P. O. Box 597, Sacramento, Cal.

HATCHING EGGS—We will sell a limited number of eggs at \$2.00 per setting of 15, from our pen of Hogenized S. C. White Leghorn hens, 4 and 5-finger measurement, mated with magnificent cockerels, 235-egg type. Atterbury Poultry Farms, Rt. 1, Box 183, Turlock, Cal.

BABY CHICKS—From large, healthy, vigorous, heavy laying thoroughbred Single-Comb White Leghorns. \$10 per 100; \$2 per 100 when order is booked, and balance 5 days before delivery. I pay the express to your nearest express office. H. A. Schlotthauer, Exeter, Cal.

WHITE LEGHORN AND BROWN LEGHORN day-old chicks from healthy, vigorous breeders. "Chicks well hatched and half-raised." Will be pleased to send you our circular. San Jose Hatchery, 373 Meridian Road, San Jose, Cal.

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FOR SALE—White African Guinea Fowl eggs, \$2.50 per 15. Also Houdans: Hens, \$2.25; Eggs, \$2.00 per 15. Mrs. B. Hocking, Guasti, Cal.

BUFF ORPINGTONS—Barred Rocks, Ringlet strain. Eggs \$2. \$3. Runner Duck eggs. \$1.50. Glendale, Fleming Ave., San Jose, Cal.

HATCHED CHICKS from Barred Rocks, R. I. Reds, White Leghorns. Good stock. Send for circular. G. L. Hawley, Madera, Cal.

LARGEST EGG—WHITEST FLESH—Black Minorcas, \$1.50 per setting 15 eggs. Edward A. Hall, R. F. D. 1, Watsonville, Cal.

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PROPER GRADING AND PACKING OF EGGS.

The following rules have been adopted to govern the official grading of the product of members of the Poultry Producers of Central California, Incorporated:

Cleanliness.—Avoid washing eggs as much as possible. Keep nests, houses and yards scrupulously clean. Use litter freely. Change nesting material often.

Quality.—In grading and packing, the most important thing to be considered is quality. Eggs should be gathered once a day at least. On hot days they should be gathered twice. Unless you breed for hatching, do not keep any male birds with the hens, as fertilized eggs, unless properly cared for, deteriorate so rapidly as to injure the grade in quality.

Washed Eggs.—All eggs shall be sound, sweet and full, whether washed or unwashed. Washed eggs must be packed separately and marked "Washed Eggs."

Color and Size.—The color shall be entirely white, and reasonably clean. The size, reasonably uniform.

Weight.—Extra eggs must weigh not less than 22 ounces and average 24 ounces per dozen. Select pullet eggs must weigh 20 ounces per dozen and contain none under 19 ounces per dozen. Pee Wee eggs are all eggs weighing less than 19 ounces per dozen. Any eggs that do not comply with above grades must be sold for what they will bring. Therefore it is highly important for every member to keep up the grade and take good care of his eggs. All eggs must be delivered twice per week, and on the days designated for shipment.

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every day. The egg that just tips the scale when grading will, if kept several days, contract so much that the standard weight established by the Corporation will be seriously diminished. Past experience has taught us that these rules must be complied with to assure any measure of success by the Corporation.

Your eggs will be received and inspected by your own men, so you may rest assured that there will be no substitution or juggling in any manner.

INCUBATION OF DUCK EGGS.

To the Editor: I have a Cyphers incubator that I have had for several years, but have only used it twice and it is in good condition. I put duck eggs in it last year and they did not come out well at all. Now, I don't know much about hatching duck eggs in an incubator. Will you give me some information on the subject? How much moisture, air, etc., while hatching in the incubator?—F. P. C., Sunnyvale.

[Answered by Mrs. Susan Swaysgood, Pomona.]

In hatching duck eggs it is very necessary that your incubator be well cleaned out before the eggs are put in. Wash or spray with creolin and wafer one teaspoonful to a quart, then close up doors and heat up.

Start the eggs at 102, for one week, then run up to 102½ for two weeks, and run at 103 the fourth week. The eggs must be aired much longer than hen eggs, but you will have to use your own judgment as I do not know how warm your incubator room is. Air and roll them twice a day, and after the second week sprinkle with warm water every other day until the last three days, then sprinkle every day and let the water be quite warm.

Sometimes ducklings have to be helped out of shell, so at hatching time you need to watch them and help all out that appear to be stuck.

CHANGING MALE BIRDS.

To the Editor: How many days after I change my roosters can I use eggs for setting, and how many Rhode Island Red roosters do I need for 75 hens?—D. S., Marysville.

[Answered by Geo. H. Croley.]

It requires more or less time after changing roosters to be sure that the eggs are fertilized by the new male bird. When the hens are laying few eggs it usually requires a longer period of time, but during the heavy laying in the spring it is usually considered safe to save the eggs after a period of two weeks. To obtain strong fertile eggs we would recommend seven or eight roosters to 75 hens.

INDIAN GAME ROOSTER WANTED.

To the Editor: Will you kindly inform me where I can get a thoroughbred Indian Game rooster?—E. M., Edgemont.

We believe you will receive satisfactory information if you correspond with B. P. Lausten, Palo Alto, Cal. These are no longer called "Indian Game," but are now known as "Dark Cornish" fowls.

Black Minorca chicks cannot withstand dampness as well as most other breeds. Keep them out of the rain.

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Mrs. Best's Letter.

Furniture Fashion Show.

My Dear Friends: This last week was held the furniture fashion show and all the shops had elaborately decorated windows and invited inspection with no obligation to buy. Several displays of correctly furnished rooms were shown, while another shop devoted most of its space to antiques. Beautiful old tapestries and copies of famous art pieces were shown too.

Emphasis is being laid on decorating the home as a frame for its inhabitants. It is true that many homes are a reflection of the taste of many people, with the result that they do not convey the individuality of one dominating force.

It is not a matter of money but of taste that makes a home. According to a lecture that one shop invited its patrons to, the proportion of a room, its height, width and length must be considered in furnishing it and decorating it correctly. Most of our homes have too many things in them and the first step toward decorating is to see what we could remove so that the objects left would be appropriate and appreciated.

In the rooms portrayed, there was always a definite color scheme worked out. One dining room had a green rug on the floor, the center being plain green with a border twelve inches wide of two darker shades of green. The table was round oblong and not pedestal. The chairs were dark, like the table, but the backs were lightened by stained cane inserts. The walls were the same green as the center of the rug and the woodwork was dark. On a narrow sewing table stood a pair of china lamps with soft green ruffled shades (quite a novelty here). There was a dark sideboard also, quiet in design, and the draperies at the door were of a soft mixture in dark green. The room was set off by a bowl of marigolds on the table. If you have a dark room add a note of color with the now fashionable marigold. It is remarkable how they seem to light up a room.

Did you know that the sunset colors are the ones we choose for our living rooms because they come with the parting day and remind us of rest and home and quiet? A living room wants to be comfortable and warm and cheery without being "cluttery." Putting the davenport before the fire, backed by the library table, on which is a lamp, is a very popular way now of arranging a living room. It economizes space and directs the center of the family life around the hearthstone.

Lamps are still very popular, the silk shade leading in favor. The pedestals universally seem to be bright—at least bright in comparison to the shades. For the shades, you see mixtures. Persian designs or silk in a plain color ornamented with Chinese motifs.

Window-boxes are shown in wicker or to match other furniture and filled with flowering bulbs instead of the conventional fern. That is an idea that many of us could adopt to freshen our rooms this spring.

The mirror is ever popular. Now it is used over a narrow table in the hall and may very modishly reflect a single candlestick or a bowl with

sprays of fruit blossoms or other spring flowers. Any mirror with a simple old-fashioned frame is in the height of style now.

Rosabella Best.

WEATHER-VANE.

Weather-vane, weather-vane, shining and bright,
Standing so proudly aloft on your height,
With your wide arms opened out to the air,
This is the message we sing to you there:—

Turn to the North, turn to the South,
Turn to the East or West;
The wind that blows is the wind of God,
He knoweth which wind is best.

Weather-vane, weather-vane, gay in the sun,
Fair is the morn and your work is begun;
But you must stand there in blue skies or gray,
Faithful to duty, foretelling the day.

Weather-vane, weather-vane, pointing so true,
Bearing so bravely your quill in the blue;
Snows they will fall, and rains they will beat,
But after the storm sunshine's ever more sweet.

Weather-vane, weather-vane, we shall grow old,
Years will rob you of your glittering gold;
But aging together we'll vow to the end
No stress of life's weather our metal shall bend.

Turn to the North, turn to the South,
Turn to the East or West;
The wind that blows is the wind of God,
He knoweth which wind is best.

—Kate Douglas Wiggin.

THE LITTLE DETAILS.

Every woman likes to appear well when she goes out to meet her friends, and attention to small details may be the making or marring of a costume. To see ourselves as others see us is the only sure test, and to do that, there must either be a full-length mirror in the bedroom or hall. If that is not possible, a small rectangular mirror can be propped against the mop board to show one distinctly the hang of the skirt and the condition of the shoes. The well-dressed woman must be as suitably garbed for shoes as she is for hat.

ORNAMENTAL FROSTING.

Whites of 4 medium-sized eggs. Break into tin pan and beat very stiff with heavy wire spoon; 2 cups cane sugar, 1 cup water hot or cold. As soon as it boils up well pour into beaten whites by spoonfuls at first, continuing to cook syrup. Add 1 teaspoon vanilla (scant), and 1 teaspoon lemon juice (full). Place pan over kettle of hot water and continue to cook, beating steadily until it grains on bottom and begins to leave side of pan in beating.

Do all beating in the same direction, turning the pan. Do not stir, but beat. If desired to have the frosting of different colors, divide it and color each part to suit the taste. Harmless pastes can be bought for

that purpose in all colors. When ready to frost the cake, make a pastry tube of a roll of heavy white paper in cornucopia shape and cut the lower edge. Into this put the colored icing (have a separate tube for each color) and after the cake has one coating of the plain frosting, apply the colors by squeezing them through the tube. With a little practice, very pretty effects may be obtained and for special occasions, an air of festivity surrounds even an ordinary cake that is attractively frosted.

ELECTRIC COOKER.

Editor Home Circle: Will you please tell me something about the electric fireless cooker, as I do not see it advertised? —Mrs. D. L. T., Hemet.

The electric cooker is similar in its style to the other cookers, but it has an electric connection that makes it unnecessary to heat the articles to be cooked on the stove. You place the food in the receptacles and then turn on the electric current and the cooking begins. When the food gets to a certain temperature, the current is automatically shut off. One of the very desirable features of this cooker is that you can purchase an electric clock that will start your dinner cooking, even though you may not be at home. This clock must be connected with the cooker and set for the time you wish cooking to commence and promptly on time, the cooking will begin. This enables one to start a dinner at just the time necessary and take up the food piping hot. Electric cookers are priced at \$28 up to \$65. Nathan-Dohrmann Co., and electric supply houses of San Francisco sell them.

SPICED DRIED PEACHES.

[Contributed by Mrs. M. H. W. Fowler]
At the ratio of 3 pounds dried fruit, peel as directed in these columns some weeks ago, and cook only until tender and set aside. Take 1 quart vinegar, 4 lbs. of sugar, bring to boil. Spice to taste and add fruit and let boil up well and it is done. For all kinds of spiced fruits, the proportions are 1 quart vinegar, 3 or 4 lbs. sugar (depending on sugar contents of fruit), 8 lbs. of fruit and spices.

CARROTS AND CANNED PEAS.

Canned peas are much improved if they are well rinsed before serving, and combining them with carrots gives them almost the freshness of green peas. Cut the carrots into small dice and cook in salted water until tender. Drain well and make a good white sauce of butter, flour and milk, to which add the carrots and the well-rinsed can of peas. Season well and you will have not only a generous dish but one the family will enjoy.

Good scales should be part of the equipment of every kitchen.

If there is only one clock in the house, it should be on the kitchen shelf.

Good Health.

[By H. E. Pastor, M. D.]

Rubber Toys and Nursing Nipples.

Rubber toys are very popular nowadays. They will stand all sorts of rough handling without breaking, and cannot hurt children should they fall on them or hit each other with them. Many of these toys, nevertheless, possess drawbacks. The rubber used in their manufacture is a substance of uncertain chemical composition, the simplest type of vulcanized rubber being obtained by heating a mixture of pure gum (caoutchouc) and sulphur. But various metallic oxides of lead and of zinc and of iron, and also sulphide of antimony, are apt to be introduced into the composition to impart desirable characteristics. Some of these ingredients are more or less poisonous, and it behooves those in charge of children to have a care that the rubber nipples and teething rings used be of the best quality only; also, that rubber toys, usually made of inferior grades of rubber, or of so-called "recovered" rubber or "shoddy," are not allowed to be sucked or chewed by children, which they are prone to do after tiring of playing with them as toys. A case of the kind came under the observation of this writer about a year ago. A little girl about 5 years old was observed by her mother to become suddenly deathly sick. When this writer's attention was called to the case the child still had one leg of a little rubber dog in its mouth, which was, of course, ordered taken away. A mild case of gastro-enteritis followed. The trouble may have arisen from the sulphur swallowed, or some compound not easily identified.

The ideal nursing nipple should be free from antimony, lead, or arsenic in any form, should be stiff enough not to collapse easily, should be simply curved in its outlines, have a perfectly smooth interior surface, and capable of being turned inside out for cleansing purposes. A good grade of black rubber is most likely to be free from the toxic substances above mentioned.

The Dose of Castor Oil.

There are some people, especially young people, who can't take a dose of castor oil as easily as an ice cream soda, and who make so many faces at the unoffending oil that it takes a day or two to get the wrinkles out. Now, the castor oil can't help its bad taste any more than a homely girl can help her lack of good looks, or some boys their stock of innate cussedness. They all just grew that way, perhaps. However that may be, you can cover up the bad taste of the castor oil by putting the dose in hot milk flavored with salt and a sprinkle of black pepper. Another good way is to add lemon juice. The milk scheme disguises the taste better, though the lemon juice is more serviceable in helping the stomach tolerate the oil.

Cooling Water on the Farm.

It often happens in the country that cold water is needed in the sick-room for bathing or drinking purposes when ice is not obtainable. A tolerably simple means of reducing the water's temperature is to place it in a common pitcher, wrapping

around this pitcher a towel which has been previously saturated in a solution of nitrate of ammonia (two ounces to the pint of water). This has considerable refrigerating power, and in from thirty minutes to an hour the water in the pitcher will be found to have undergone a decided reduction in temperature.

Notes.

A saturated solution of Epsom salts (sulphate of magnesia) applied to linen fabric stained by iodine, is said to entirely eradicate the stain.

Fresh butter milk has been highly recommended as an application for erysipelas in any stage of the disease. It removes the pain and prevents the spread of the infection.

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Write for what you want. We send, in many cases, for your inspection, actual photographs of furniture upon our floors, which we believe will best meet your preferences. We quote you prices of the very best values in our stock. We enable you to secure the very newest products of the very best factories, and at lowest possible cost.

We send drapery samples, wall paper samples, etc. Tell us as nearly as you can what you wish and we will make special effort to meet your demands.

We pay the freight 100 miles and part of the freight for greater distances. Careful packing, prompt shipments.

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Long's Best Coffee Delivered to Your Door by Parcel Post.

Roasted the moment before it is sent to you. 3 lbs. for \$1.00.

LONG, the Coffee Man

LONG'S MARKET
11th and Washington Sts.
Oakland, Calif.

Floral Department.

[By Geo. N. Tyler.]

Spring Garden Work.

I have been planting, this week, violets as described in my last article. I have also been transplanting or rather boxing off asters that were sown three weeks ago. I use a light soil, and put in one inch of rotted manure in the bottom of the flat. I firm this down and fill the flat up even with the top with soil. This is then pressed down and leaves from one-quarter to one-half inch space for watering. I use a dibble, and prick out the small seedlings and plant two inches apart both ways. I make a hole with the dibble or pointed stick, put in the seedling, and work the soil around the roots with the point of the dibble. Never mind the top; when you water it will level the soil, and you should water as soon as you fill a box. Keep shaded for a few days and then give full sun.

Carnations that were put in sand about thirty days ago are now rooted and ready for two-inch pots. Do not let them stay long in the sand after rooting, for they grow spindling.

Pelargoniums that were potted into four-inch pots a month ago are now beginning to make a good growth. Give them lots of air and sun, and a little later a light shading is very beneficial. You can now give them more water, but be sure and not wet the foliage.

Plant gladioli now; sandy soil is best, thoroughly enriched with rotted cow manure. Plant them five or six inches deep and they will not require staking. There have been some wonderful varieties introduced in the last few years, but of the standbys: America is the best light pink; Blanche, white; Brechyleuse, scarlet; also Mrs. Francis King and princess are fine. These are all florist's varieties grown for cut flowers.

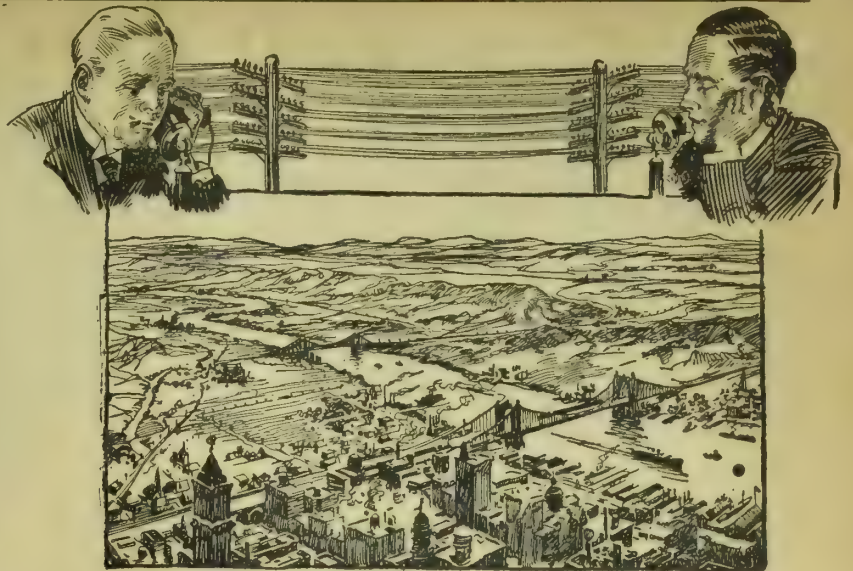
I have had a query this week about sow bugs, or wood lice, as they are called, and what to do to get rid of them. The remedy is this: Take some brown sugar and mix with it enough fresh Paris green to thoroughly color it, and sprinkle thinly on the boards on each side of the benches in the evening; if for outside, you can put some on cardboard or on the edge of the walk, and in the morning you will find the wood lice all ready to sweep up from the walks. Repeat this at the end of two or three weeks and you will have no more trouble with them for some time to come.

Do not plant all your gladioli now, but make a planting every two weeks and you will have a succession of bloom all through the summer and fall. Friesias are now blooming freely and require a great deal of water at the root. Do not let them go to seed, but cut off the flowers after they wilt and your bulbs will be much stronger next year.

HELPS IN THE KITCHEN.

A knife rack is a great convenience in a kitchen and should be used instead of piling knives into a drawer with spoons. One can be made by cutting grooves in soft pine wood and hanging against the wall.

A garbage pail can be purchased that has a lid that is raised by pressing a foot lever.



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BROOKDALE NURSERY, Geo. N. Tyler, Los Gatos, Cal.



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PAPER Blake, McFall & Co., Portland, Oregon

SAN FRANCISCO.

San Francisco, Feb. 21, 1917.

WHEAT.

The only happening in wheat was the arrival of 32,000 cents of Australian wheat; but, as this went directly into the hands of the millers at a price above quotations for local grain, it had no effect on the market. The storm has made futures a little easier; but with practically no transactions, quotations are unchanged.

Sonora wheat\$2.75@2.80
Northern club2.70@2.75
Calif. club, ctl.2.65@2.70
Northern BluestemNone offered
Northern RedNone offered

BARLEY.

While the storm may be expected to weaken future barley, it has had the opposite effect on spot stocks, as there is developing an increased demand for good seed. Quotations remain unchanged.

Seed, ctl.\$ 2.50
Shipping, ctl.2.35@2.40
BrewingNominal
Choice feed, ctl.2.25@2.30

OATS.

There has been a little heavier marketing of white oats, and the price has eased off. About all the good quality red or black oats is being held for seed. No first quality red oats are offering. This, if offered, would probably bring a figure equal to the Texas red.

Red feed\$1.85@2.00
White2.00@2.05
Red seed (Texas)3.00@3.10

CORN.

Notwithstanding the arrival once more of normal shipments from the East, the market continues steady without change in prices. California sacked is still very firm.

[First-hand prices on strictly first-class grain, San Francisco.]
Eastern Yellow, ctl., bulk \$2.15@2.22½
California, sacked2.25@2.30
Milo Maize2.00@2.20
Egyptian2.25@2.50

BEANS.

The shipping demand for beans continues; and this, with the local demand, has led to still further advances. Limas are very scarce and bring as high as \$10.50 for the best. Considerable lots of damaged stock are available in large and small whites; and the range shown in the quotations is due to this fact. Pinks, large whites and blackeyes have moved up several times during the week; and lines which have not advanced this week are likely to do so at any time.

[Re-cleaned, f. o. b. San Francisco.]

Bayos, per ctl.\$ 7.75@ 8.00
Blackeyes6.00@ 6.25
Cranberry beans9.00@ 9.25
Horse beans4.25@ 4.50
Small Whites (south)9.50@11.50
Large Whites11.00@12.00
Pinks8.10@ 8.25
Limas (south, re-cleaned)10.00@10.50
Red Kidney11.50@12.00
Mexican Reds7.50@ 8.00
Tepary beans8.00@ 8.50
Garbanzas4½c

HAY.

Everything in the hay line has gone up this week, practically all of the advances having been made before the rains set in. The general idea is that the present rains and the assurance of more abundant feed and a good crop later on, will lead to the releasing of a considerable quantity of hay which farmers have so far held for emergencies. Shipping facilities have been improved; and, so far as can be learned, cars are now being promptly provided. Nevertheless shipments fell off during the week to a little over 1600 tons. This should be largely increased during the next few weeks as pasturage improves with the rains. The advances for the week range from \$1 to \$2, the latter being the advance made by alfalfa. Even straw participated in the upward move.

[Price per ton, carload lots, San Francisco.]

Wheat, No. 1\$20.00@21.50
No. 218.00@20.00
Tame oats18.00@22.00
Wild oats17.00@23.00
Barley17.00@20.00
Alfalfa16.00@20.00
Stock hay16.00@17.00
Straw, per bale90@ 1.10

FEEDSTUFFS.

The rains have checked any further advances in feeds, though the situation is still very firm in some lines. Alfalfa meal, which advanced a dollar last week, is still firmer; and will probably hold so notwithstanding the storm as the shipping demand is good. Rolled oats have been marked down one dollar, and other lines may follow as a result of the rain.

[Per ton, San Francisco.]

Beet Pulp, per ton\$30.00@31.00
Alfalfa meal, per ton23.00@24.00
Bran, per ton30.00@31.00
Oil Cake40.00@41.50
Cocoanut cake or meal31.00@32.00
Cracked corn47.00@48.00
Middlings37.00@40.00
Rolled Barley45.00@46.00
Tankage47.00@48.00
Rolled oats44.00@45.00
Rice middlings31.00@33.00

POTATOES, ONIONS, ETC.

Potatoes are still firm with advances quoted this week and a possibility of further advances in the near future. The shipping demand continues. It is claimed that delta growers are holding for \$5, but so far no sales have been made at that figure. Notwithstanding the reported easing off in the Eastern demand and the arrival of another shipment of Japanese onions, the market for these has registered a further advance with \$11 quoted as the ex-

THE MARKET REPORTS

Figures Given Are Independent and Reliable.
Prices Quoted as Paid to Producers.

treme price. The rains are expected to bring in a good deal of damaged stock in the way of miscellaneous vegetables. Good lettuce and celery are scarce. There has been a slight advance in the top price for rhubarb. Tomatoes are still coming in in rather poor quality.

Lettuce, crate\$1.25@1.75
Celery, Delta, crate1.50@3.50
do, Southern, crate2.50@4.00
Tomatoes, crate75@1.25
Rhubarb, box1.50@1.75
Potatoes, ctl., Delta3.75@4.00
SalinasCleaned up
Oregon3.50@3.75
Onions10.00@11.00
Garlic, lb.3@5c

POULTRY.

The poultry market has been going up this week, nearly all lines having registered advances. Small broilers and large fancy hens are particularly scarce. The former are bringing as high as 35 cents per pound and the latter as high as 25 cents. Dressed turkeys are up to 30 cents for the best. Squabs are now quoted at from 40 to 43 cents per pound. During the better part of the past week the market has been bare of Eastern stock; and, with the higher prices now prevailing in the East, it looks as though not much Eastern could be counted on here for some time.

Turkeys, live, lb.23@25c
do, dressed, large, lb.27@30c
Broilers, 18 lbs to doz and less.33@35c
do, over 18 lbs. to doz30@33c
Fryers25@26c
Hens, extra, per lb., colored26c
Small leghorn25c
Smooth Young Roosters, per lb. (3 lbs. and over)27@28c

Geese, per lb.19@21c
Squabs, per lb.40@43c
Ducks24c
Old22c
Belgian Hares13@15c

BUTTER.

Receipts of butter have been of good volume, and the tendency toward lower prices has continued, though with some fluctuations during the week. The shipping movement is not so marked as it was some time ago, the movement to the East having been altogether checked. A certain movement to the north is continued, and the export business continues about up to the usual volume. A fairly steady market is looked for with gradually dropping prices.

BUTTER.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extra	35½	35½	37	36	36½	36½
Prime	35	35	36½	35	35	36
Firsts	34	34	36	34	34½	35

EGGS.

The egg market, though still fairly well maintained, is expected to weaken from now on. The tendency to lower prices in the Eastern markets has checked the movement from here to Eastern points with no prospect of an immediate resumption except at lower prices. There is still some speculative movement, however, but not of sufficient volume to have much effect. In the meantime, receipts are increasing daily and a dropping market is to be expected.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extra	34	34½	33	32½	32	31½
Extra Pul.	30	30½	29½	29	28½	30

CHEESE.

The feature of the cheese market is the continued Eastern movement. Ex-

Produce Market High; Plantings Increased.

The sky-high prices of vegetables for immediate consumption and for canning are leading to the planting of great new areas. Some of the biggest hop companies are replacing hops with vegetables on account of the probability of national prohibition. Destruction of most of the Florida vegetable crop by frost about the last of January has little effect on the local market but is stimulating Eastern shipments. Very few Florida vegetables normally reach San Francisco in ton lots except tomatoes. Onions have made the most sensational advances, with potatoes not far behind. One dealer says there are not over 100 cars of onions on the Pacific Coast. That is enough for two weeks, but there are two months yet to provide for, after which Early Reds will be coming. Some onion sets have already been planted in the Delta. A thousand 100-pound crates of poor quality were recently received from Japan, which sold at slightly above the \$12.50 price now asked by the wholesale trade. A shipment of 15,000 or 20,000 crates is to arrive from Australia within a month and these are of equal quality to any we have. As they can be laid down in San Francisco at 4 to 4½ cents per pound, onions are not likely to advance any more this season, especially since high prices have curtailed consumption. George Shima, the Delta potato king, held his potatoes through the sensational advance and is now selling at \$4.50 or better per cwt. But most of the growers sold early, allowing dealers to reap the profits of the rise. Since the high prices are country wide, shipments have been going east and southeast from the coast and inter-mountain regions. A Colorado grower sold four carloads of potatoes in mid-February to Kansas City at \$4.10. None can be brought in to reduce prices; and it is expected that they will easily go to 5 or 6 cents before new potatoes come from the South after the middle of April. There is a heavy demand for seed potatoes in spite of high prices, and the acreage planned is probably above normal. The supply of good seed is very limited, and large quantities of "marbles" are being planted. Beans also are almost out of sight and this is stimulating planting of all kinds both along the rivers and in southern coast counties. Seed beans have been selling at 8 cents for pinks and 11 cents for small whites. Small fortunes were made by individual growers with beans the past season. Cabbage is already going north as far as British Columbia in quantities. What comes to San Francisco is worth 2½ to 3 cents per pound, higher than for years. We have noted several new extensive cabbage plantings in Southern California, one grower having 500,000 plants out. Wisconsin cabbage has already all been contracted. Contracts for tomatoes have been sought at \$10 per ton f. o. b. San Francisco for canning and \$9 per ton at Sacramento including use of crates. Imperial and Coachella Valleys had plants in the field some weeks ago, and San Joaquin growers were transplanting to cold frames. Large new acreages have been contracted and some new canneries are to be erected, notably in Alameda and Sacramento counties. Last year some canneries started contracting tomatoes at \$7 and finished at \$12. All of the prospective pack for 1917 has already been sold by the canners; and the same is nearly true of asparagus, of which a great acreage is being planted in the Delta this year in addition to the 32,000 acres already there. The asparagus is contracted mostly for eastern shipment at 10 to 14 cents per pound up to a certain date, when the rest is to go to the canneries, whose capacity has been and is to be greatly increased. Spinach has been contracted at \$25 per ton in the Sacramento district. Imperial Valley lettuce has been shipped a month in carlots at the highest prices in history up to \$2.75 per crate. This goes east. Small quantities of local cabbage, cauliflower, lettuce, celery, etc., have been coming into Los Angeles and San Francisco markets at high prices, and the rain will help supply plenty of all vegetables with the warm weather coming.

Vegetable growers made more money last year than ever before, because many of them warehoused their own stock and took advantage of the rise in prices; and now they hesitate about contracting ahead even for the canneries. Good prices are expected in most lines, because of the present shortage, the early sales of the canned pack, and the increased capacity of canneries.

ports also keeping up well. Notwithstanding further advances this week, it is understood that further Eastern orders have been placed. The local demand is firm.

Y. A.'s22c
Fancy Calif. Flats, per lb.21c
Monterey Cheese16@20c

DECIDUOUS FRUITS.

A dull week is reported in the fruit market, with only a small local movement and no shipping demand. Bellflowers are now practically out of the market. Newtowns are slightly lower. There is no change in Winter Nellis.

Apples:
Bellflower, box\$.60@ .75
Newtown1.10@1.15
Pears, Winter Nellis2.50@3.00

DRIED FRUITS.

The dried fruit market has been dull this week, this being especially true of spot stocks which are scarce in most lines. A lot of interest is being taken in 1917 crops; but, as a matter of fact the actual transactions appear to be small and of a purely speculative character. The uncertainty of the international situation and the railroad embargo, have had a bad effect on future buying. Very small sales of 1917 prunes at a 4½-cent basis have been made and there have also been some sales of future peaches at 6 cents. The situation continues favorable for high prices for the coming crop of raisins.

[Net to growers, bulk basis, f. o. b. shipping point.]

Apples, new crop5½@6 c
Apricots, per lb.15 @16½c
Figs, black, 19166 @6½c
do, 19175½@6½c
do, white, 19176 @6½c
Calimyrna, 19179 @10 c
Prunes, 4-size basis, 1917... 5 @5½c
Prunes, 19165½@7½c
Pears6 @7½c
Peaches, 19176 c

HOPS.

Local hop houses report one of the quietest seasons on record, February transactions so far being far below those of the same month last year. Quotations remain unchanged, though it is admitted that any large transactions might bring about a change.

Sacramento8@8½c
Sonoma8¼@9¼c
Mendocino9@9½c

LOS ANGELES.

Los Angeles, Feb. 20, 1917.

BUTTER.

Receipts of week ending Feb. 20, 1917—325,668.

Receipts of week ending Feb. 20, 1916—345,559.

The market the past week was without feature. Receipts were better than for some time but as there was a good consumptive demand and the Eastern markets held steady and no cold storage stocks, there was no disposition to break prices. It was a 37c market throughout the week up to Tuesday and but little trading on call. Chicago was unchanged throughout the week and so was New York. Tuesday brought no change. Receipts were light, but as it was raining and the outlook is for better production, there was no disposition to sell the market off.

We quote extra creamery37c
Prime first36c
First35c

	Wed.	Thu.	Fri.	Sat.	Mon.	Tu.
1917—	Wed.	Thu.	Fri.	Sat.	Mon.	Tu.
Extra	37	37	37	37	37	37
1916—	32	32	32	32	32	32

Extra ...32 32 32 32 32 32

EGGS.

Receipts (railroads) for week ending Feb. 20, 1917—3018 cases.

Receipts (railroads) for week ending Feb. 20, 1916—2827 cases.

A steady and very good market was had the past week. Receipts continue to improve, but under the influence of a good consumptive demand prices ruled steady throughout the week. The Eastern markets also held up very well, which had a sympathetic influence. This with the want of cold storage stocks enabled receivers to maintain a steady market in the face of better receipts. While prices are lower than last week, yet they are 10½c higher than this time last year. Tuesday saw a general decline. Good receipts and San Francisco being off ½c and the home demand not so strong as the previous days of the week caused buyers on call to hold back and buy sparingly. But few sales were made and they showed a decline of 1½@2c.

We quote fresh ranch case count. 28c

	Wed.	Thu.	Fri.	Sat.	Mon.	Tu.
Extra	31	31	31	31	31	29½
Ranch	28	28	28	28	28	27
Pullets	27½	27½	27½	27½	27½	26½
1916—	24	21	20	19	19	19

POULTRY.

With no Eastern poultry in and the local receipts only moderate, prices the past week ruled higher for most everything. At the same time sales were slow, consumers hesitating about paying the high prices asked. Broilers and fryers are 1c higher, light hens are up 2c and ducks advanced 3c. Turkeys too are bringing ½c more money than last week.

We quote from growers:
Broilers, 1½ to 2 lbs.25@28c
Fryers, 2½ to 3 lbs.23@24c
Hens over 4 lbs.25@26c
Hens, under 4 lbs.24@25c
Ducks22@23c
Geese18@19c
Roosters, 3 lbs. up (soft bones)22c
Turkeys, heavy, 12 lbs. and up.29@30c

Citrus Tendency Higher; Picking Stopped.

Exchange quotations on citrus fruits for San Francisco were withdrawn Feb. 20 until further notice on account of the rains which stopped picking. The tendency of the market at that time was higher, having been boosted 35 cents a box within 10 days on account of Florida damage; and it is likely the new prices will be advanced when picking begins. The market is considerably higher than a year ago.

The Los Angeles folks who complained that they could not get good oranges were simply unwilling to go after them and pay the price. That market has been so long flooded with culls that "Sunkist" quality seemed too expensive, though that brand has always been available. Since the dealers got together and showed the Exchange that they were willing to pay for quality, the Exchange has put in a man to work that market as they do other cities.

Turkeys, light24@25c
Squabs, live, per doz.\$1.50@3.00
Dressed3.75@4.85

BEANS.

A firm and fairly active market was had the past week for all offerings, while whites, pinks and blackeyes at full last week's prices, limas were sharply higher and in good demand at the advance. Local dealers and shippers both in the market.

We quote from growers:
Limas\$10.25@10.50
Large white11.00@11.50
Small white11.00@11.50
Pinks7.50@8.00
Blackeyes5.25@5.75
Tepary5.75@6.25

HAY.

Not so much in the past week and the falling weather had its influence on shipments, and light stocks caused a stronger tone to the market. While the movement was a little better, both of alfalfa and grain hay, prices showed no quotable advance, though were called firm. Receipts 122 cars.

We quote f. o. b. Los Angeles:
Barley hay, ton\$18.00@20.00
Oat hay, ton19.00@21.00
Alfalfa, northern, ton17.00@18.00
Alfalfa, local, ton19.00@21.00
Straw, ton9.00@10.00

HONEY.

There is no change to note in this market from a week ago, yet enough

moving to keep prices steady and firm at quotations.
Water white, pound8½c
White sage, lb.8 c
Light amber sage, lb.7½c
Light amber alfalfa, lb.7½c
Fancy white comb, lb.10 c
Light amber comb9 c
Beeswax30 c

CABBAGE AND CAULIFLOWER.
Offerings of cabbage the past week were light and demand good. The falling off in the receipts caused buyers to bid up a little stronger, sales generally being made at an advance of \$5.00 per ton. Prevailing prices \$4.00@4.50 per cwt. Cauliflower as well as cabbage sold a little higher during the week. But little coming in. The season fast drawing to a close. Selling at \$1.30@1.40 per standard crate.

WALNUTS.
The main crop has not only been marketed for some weeks but most of the culls are now in. Speaking of culls, the Southern California Walnut Growers' Association, which has heretofore confined itself to graded walnuts, is handling culls this season. They take them and crack them and put the meat in boxes and after being graded it is sold. They have in this way been netting the growers 2c per pound more than they have been getting from outside buyers heretofore. Independent buyers have been buying culls at 3@4c per pound.

Special Citrus Market Report.

Los Angeles, Feb. 20, 1917.

Shipments of citrus fruits from Southern California from November 1 to February 15: Oranges 7,044 cars and lemons 1,533 cars. Same time last year, oranges 6,387 cars and lemons 1,637 cars.

Shipments from Central California from November 1 to February 14: Oranges 4,013 cars and lemons 150 cars. Same time last year: Oranges 4,172 cars and lemons 129 cars. The markets East continue to hold up fairly well. Shipments not heavy and the trade taking care of the arrivals without trouble. Larger sizes were a little draggy and weak, but popular sizes of all well known brands held up very well. Lemons firm and meeting good demand. Locally the market has assumed a better tone. Local packers are inclined to buy a little more freely and paid a little more money for all choice fruit. Oranges coming in a little sweeter which is causing freer consumption. Local packers are bidding

for the best highly colored oranges 1@1½c per pound in the grove picked. Grapefruit steady and rather firm at 2@2½c per pound in the grove picked. Tangerines still slow sale at 1@2c per pound in the grove picked. Lemons steady at 1@1½c per pound in the grove picked for the best. Poor have to go for less and very dull.

AUCTION SALES.

New York, Feb. 16.—Sixteen cars navel and three cars lemons sold. Market lower on navels, especially the larger sizes. Lemons very strong. Weather cloudy. California navels averaged \$2.10@3.30; lemons \$3.25@3.50.

Boston, Feb. 16.—Six cars sold. Market doing better on oranges and lemons. California navels averaged \$1.80@3.30; lemons \$3.25.

Philadelphia, Feb. 16.—Three cars sold. Market strong and higher on oranges. California navels averaged \$2.10@2.65.

Special Livestock Market Report.

San Francisco, Feb. 21, 1917.

The livestock market is very quiet, though all classes of hogs are marked up and mature sheep also.

CATTLE are scarce in the West, though much stuff in poor shape would have had to be dumped somewhere to the demoralization of the markets, had not the rain promised feed. Now, growers generally will hold until stock is in better shape to market and it will be better for all concerned; though shipments may be a month later than they would if the winter had been normal. The present condition may not raise prices immediately, because consumption has fallen off.

Steers, No. 19½@9½c
No. 28½@8½c
Cows and Heifers7½@8c
No. 27@7½c
Bulls and Stags5½@6½c
CALVES, light9@9½c
Medium8½@9c
Heavy7@8c

HOGS of heavy weight are scarce as usual or more so, lightweights having predominated on account of high feed prices. We have reports of hogs sold in Imperial Valley at 9 and 10 cents for 150-pound stock; in Fresno county at 8 cents; in Stanislaus at 8½.

(Rough, docked 20 pounds, piggy sows, 40 pounds, stags 80 pounds.)
100 to 150 lbs.10@10½c
150 to 300 lbs.11½@11½c
300 to 375 lbs.11@11½c

SHEEP are practically unobtainable. A few ewes have been brought from Idaho, but there has been a decrease of consumption, especially of lambs, probably due to high prices; and lamb meat is not selling very freely.

Prime Wethers10½@11c
Ewes8½@9½c
Lambs12½@13½c

WOOL is interesting. Sheepmen of upper Sacramento Valley are selling

next spring's year-clip on back at 38 to 39 cents, nearly 100 per cent increase since last spring. Kern county wools mostly sold around 23 to 25 cents for spring clip. Mendocino wools are not moving yet.

Sacramento Valley, spring clip. .38@39c
Mendocino, year's32@33c
Southern, spring clip26@28c
Southern, 7 months13@16c
Imperial Valley, 7 mos.14@15c
Nevada, year's31@32c

HIDES are quiet; nobody interested; waiting for a break in the market; tanners and packers holding firm.

Steers21@23c
Cows21½@23c
Light hides, 25 to 48 lbs.20@23c
Kip20@22c
Calf and veal29@30c
Dry Hides32½@33½c
Dry Kip35@36c
Dry Veal and Calf38@40c
Pelts, long wool\$3.00@3.25
Short wool1.25@1.50
Horse hides, wet, large, ea.5.00@5.50
dry, large3.00@3.50

Los Angeles.

CATTLE: A firm and fairly good market was had the past week for all good killing cattle. The Eastern markets continue to hold up and a very good demand was had for beef, which encouraged buyers. Hence the advance of last week was fully sustained. Killers were all in the market and wanted supplies. California and Arizona continue to furnish most of the supply.

Per cwt. f. o. b. Los Angeles:
Beef steers, 1000 to 1100 lbs. \$9.00@9.50
Prime cows and heifers7.50@8.00
Good cows and heifers7.00@7.50

HOGS: There was a further and sharp advance in this market the past week. Receipts not so heavy, while the demand held up very well under the influence of a good demand for

fresh pork. The Eastern markets also continue high, which had its influence. California and Arizona furnished most of the supply and some very good hogs. But few Idaho hogs in, most of them continue to be drawn East by the high prices there.

Per cwt. f. o. b. Los Angeles:
Heavy, averaging 250@300 lbs.\$9.75@10.25
Mixed, 200@250 lbs.10.25@11.25
Light, 175@200 lbs.10.25@11.25
Rough docked 20 pounds, piggy sows 40 pounds and stags 40 per cent.

SHEEP: A good and strong market was had the past week. Not many coming in. Killers were all in the market and wanted both sheep and lambs and last week's advance was fully sustained. Owners in the country still inclined to hold most of their sheep and lambs until after the lambing and shearing seasons are over. Utah and Idaho continue to furnish most of the supply.

Per cwt. f. o. b. Los Angeles:
Prime wethers\$9.00@10.00
Prime ewes9.50@10.00
Yearlings9.50@10.00
Lambs13.00@14.00

CALVES: More coming in and market hardly so active. Still the demand the past week was fair and old prices were sustained. Selling at \$8.75@9.75.

North Portland, Or., Feb. 19, 1917.

CATTLE: There was but a moderate run of cattle received for today's market, about 600 head, the quality of which was the best received here for many months. There was an excellent demand. Prices in all good beefs was advanced 15 to 35 cents higher. One load of prime medium-weight steers brought \$9.60 while the bulk of the beef steers sold from \$9.25 to 9.50, the supply was quickly disposed of. All good heavy cows were readily disposed of at \$8.00 with the fair to good kinds at \$7.50 to 7.55; common valley cows sold down to \$5.00. The heavy demand for bulls at this market continues and prime heavy bolognas advanced another 25 to 50 cents, one prime heavy bull bringing \$7.00 with a number of others at \$6.50 to 6.75. Fairly good bulls sold at \$6.00 to 6.25 with a few extremely light ones down to \$5.00. There were a number of loads of good feeding steers here which received a very good call to fill the short feed lots; several loads of 900 to 975 pound steers brought \$8.25.

HOGS: The hog market was rather irregular today, prices on all good hogs ranging from 10 to 25c higher than Saturday. The early sales were the highest of the day, four loads bringing \$12.60; the later trading was on a considerably lower basis, the bulk of good heavy hogs bringing from \$12.05 to 12.35. Pigs were in light supply and realized only steady prices, the bulk of good pigs bringing \$11.00 to 11.25.

SHEEP: Sheep market was firm with a fairly good demand, offerings were moderate, several loads of prime east of the mountain lambs sold from \$11.00 to 12.50. There were no shorn lambs in the trade but were quoted at \$10.50 to 10.75, one load of shorn yearlings sold at \$9.75 with a load of good ewes at \$9.25.

Publisher's Department.

We are still receiving orders for "California Vegetables," which we are unable to fill. Maybe your book seller has a copy. Do not send us your orders as we can not help you till the fourth edition is published next September.

Our field force are again at work and the subscription list is growing at a gratifying rate. During the past seven weeks we have added 1360 new paid subscribers to our list—we expect to increase this number as the weeks pass, on account of prospects from the good rains.

The Killefer Mfg. Co., Los Angeles, have just received from Algona Bay, South Africa, an order for immediate shipment for one Laverne Rotary Cultivator, one Killefer Orchard Disc and one Clean Cut Weeder and Mulcher. The Port Elizabeth Agricultural Show is to be held on March 20th and they ask that these tools be shipped so they will reach there in time to exhibit.

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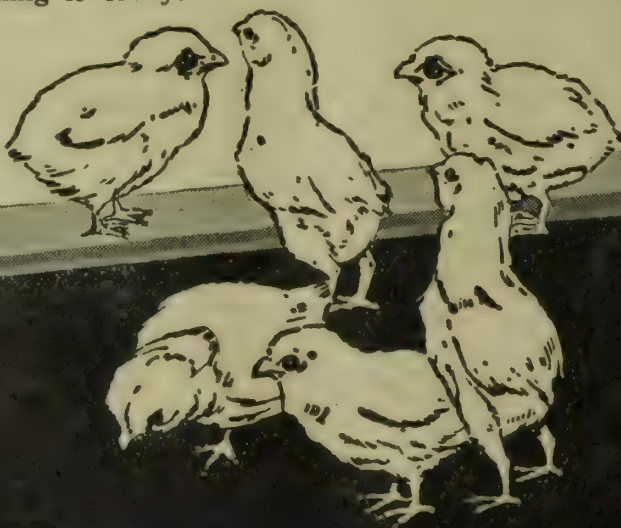
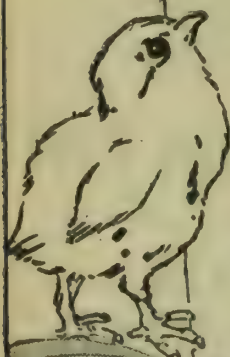
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THE PACIFIC RURAL PRESS

SAN FRANCISCO

MARCH 3, 1917.

LOS ANGELES

Range Requirements for a Comfortable Living.

[Written for Pacific Rural Press.]

MOUNTAIN and hill range conditions vary to such an extent in California that it is almost impossible to formulate any specific rules that will apply to all conditions; but it is the consensus of opinion among cattle raisers that some hill or mountain area is essential in the economical production of beef, some growers even claiming that some range is absolutely necessary in their districts.

On this subject H. H. Gable, owner of the Diamond G Ranch in Yolo county, states that in his opinion some range is desirable for economical production, as valley land might easily be too valuable for beef growing purposes. Further, if valley land is used, it would be necessary to keep the cattle up and feed them in the winter to prevent the tramping of land. That would add considerable to the cost of production.

F. G. Stevenot of Carson Hill, Calaveras county, does not think mountain range is absolutely necessary, but thinks it is well for stock to have green pasture of some kind in the summer time if they have calves at foot. Chas. Pomtag, of San Benito county, thinks cattle can be run without ranges, but Geo. Watterson of Inyo county states that they are necessary in his part of the country.

Cattle per 100 Acres.—Probably nothing is more difficult to define than the average number of cattle that may be carried on each 100 acres of mountain range. On this point Mr. Stevenot states that it all depends upon the character of the land and the section of the State and that even that can be sub-divided down to local conditions. Over most of the range of the State that is worth calling "cattle range," it runs from eight to thirty acres for each animal.

Mr. Pomtag, Mr. Watterson, and Mr. Gable also state that it is purely dependent upon the local conditions, but Mr. Gable says that it is the experience of most cattlemen that on ordinary range, for cattle to do well the year round, there should be figured not more than one head to every 15 acres. This is on the assumption that one head of stock may be either a yearling, two-year-old, or breeding animal.

Cows to Yield \$4,000 per Year.—There are two ways of figuring the smallest practicable herd that may be expected to yield a gross income of \$4,000 a year, according to Mr. Gable.

If it is desirable to keep the herd so as to turn off the produce at two years old, it will be necessary to keep at least 100 breeding cows. If a sufficient number of bulls are kept, say one to every 25 cows, there should be a 90 per cent calf crop. These carried to a selling age, say two years old, will mean a herd of 370 head of all ages. Assuming that the two-year-olds weigh at selling time 1,000 pounds and sell for an average

of five cents a pound or \$50 a head, and allowing for a certain per cent of loss, this number will yield a trifle over \$4,000 per annum.

If it is desired to sell the entire calf crop at weaning age, it will be necessary to keep a herd of about 225 breeding cows. With the same percentage of calf crop as above, the annual turnoff would be about 200

head, which will sell for about \$20 a head. As calves up to weaning time are practically no expense, their number, 90 head, should be deducted from the number in the herd in the first instance, leaving a herd of about 280 head as compared with a herd of 225 in the second instance. Of course these estimates will vary, according to condition of range, market, etc., but Mr. Gable believes them conservative.

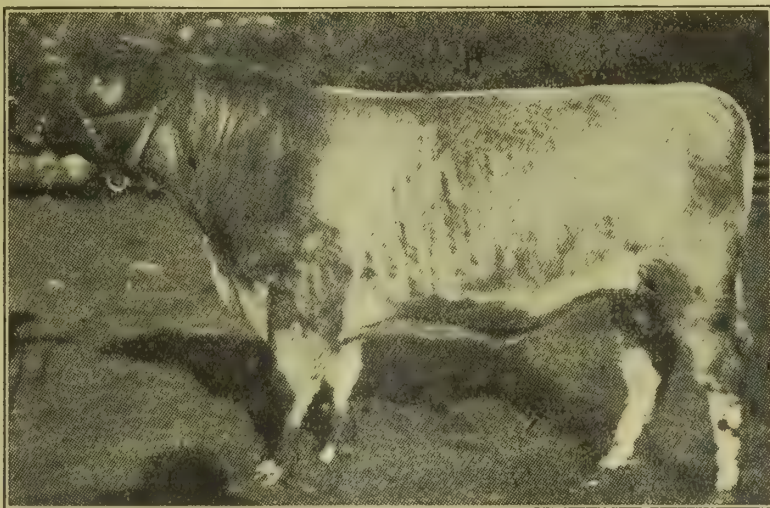
Like Mr. Gable, Mr. Stevenot believes that 225 cows are required to secure the \$4,000 annual income, if the turn-off is sold as calves and provided they are grown under favorable conditions. He says that on paper they will do better, but that under actual conditions it will take fully that many. If steers are to be turned off as

three-year-olds it will require a mixed herd of about 450 head. He says he knows of a few who do better than this but the average do not, in fact some fall below. He bases his opinion on calves selling at \$20 and steers at three years old averaging \$70. Very few strictly two-year-old steers are sold in his district. The matter of possible income, thinks Mr. Watterson, depends so much upon kind of stock, method of handling, and age marketed that it is difficult to advise in a general way. Where both two-year-old and three-year-old steers are sold, Mr. Pomtag places the requisite number at 250 to 350 head.

The Herd Bull.—In the above calculations it is supposed that good bulls are to be used for there is no factor that will influence profitable beef production more than the herd sire or sires. This is true equally on both hill and valley lands, for it is a well demonstrated fact that the well-bred grade steer will gain weight more rapidly on a given amount of feed than his inferior bred mate, and this holds true whether he be roaming over poor or abundant feed areas.

How the breeding may effect the gross income of a herd is seen in the operations of a large and successful range operator in northeastern California, who sells his calves at weaning time as alluded to above by Mr. Gable. These calves are sired by purebred bulls and out of highly graded cows, and when sold to a Nevada feeder they

bring right around \$30 a head. Nor are they high-priced at that, for the writer recently saw a bunch of these that averaged better than 1000 pounds as short yearlings. It is needless to say that they topped the market because of their uniformly prime condition.



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EDITORIALS

WHAT SHALL WE DO NOW?

PLENTY of water has fallen everywhere. A week's storm has brought the whole State to normal rainfall or beyond it—except in a few places where the normal exceeds any use that can be made of it. The Weather Bureau table in another column shows how well we are fixed for water for all present purposes. It is possible that we had a tight squeak from a dry year. Perhaps we did escape only by a scratch from the perdition of a stormless winter, and yet it is hard to realize, as we look upon his bright disk this Tuesday morning, that old Helios has been lying-in with the prophets. If he had, his broad, gleaming face ought to be as black as a stove-griddle—considering the storm we have just passed through. But did the prophets merely slip a cog by accident and let this storm through, and was their general direction toward a year of moderate rainfall right? Whether you think that way or not, it is just to act as though you did. In the past we have had to March through dust and through mud, and it will be wise to act as though it might be dry. There is plenty of water in the soil now, and everyone should try to hold on to it. Just as soon as the ground gets fit, start the plows on all land which was allowed to lie hard during the long dry spell. Do not let the orchard and vineyard lie as late as you might if we had had a heavy winter. If you do you may be rustling with the clods most vexatiously and inefficiently later in the spring—having lost most of the water which the upper soil now holds. If you are holding some good land for summer crops, as seems most wise in view of the prospective demand for them, break it up now and harrow to half-fineness, so that you will be sure not to be working and planting in dry soil and much doubt after frost danger is over. Of course March sometimes drops a lot of water, and hillslopes should be treated with wise regard to this, as they always should, but most lands will be able to store away what water they get in March, considering how dry they may be below. The thing to do, therefore, is to hold on to what water you now have and to get in as much more as you can, so that summer growth of fruits and of field crops may come through large and abundant. Don't watch the clouds; don't listen to the prophets; hold fast the sure thing now given you and keep your eyes and hands on the earth!

THE FUSS ABOUT FOODS.

THERE is a terrible fuss being made about the price of foods, and much good will doubtless come of it, because, with public attention concentrated on food problems and much investigation into the handling of it, we shall surely know more than we now do about the production, transportation, and commercial distribution of it, and no doubt righteousness will be advanced by knowledge. We must say, however, that, speaking broadly, there is no such mystery and iniquity about the situation as sensational orators and essayists claim to see in it. As we tried to ex-

plain last week, food distribution is wrongly founded and controlled, and there is only one way out of the dilemma, and that is, by thorough reorganization and readjustment of relations between producers and consumers, which will be a very slow process. Meantime thought among those most interested and investigation by those best qualified will surely work toward readjustment of relations just mentioned, and toward distribution of benefits to those having real claim to them. It is the duty of the producer to maintain sympathetic and appreciative attitude toward the efforts of consumers for fairer treatment and to participate in a movement which is clearly for the advantage of the whole people.

Without commenting upon the country-wide situation in foods, because we really know nothing of the fires which may be really burning beneath the smoke of sensations which is blackening the whole national sky, we must nevertheless hold that our local situation seems to us neither complex nor mysterious. On the contrary, it strikes us as quite simple and natural, as likely to endure but a short time, and therefore State condemnation and distribution of foods, as now proposed to the Legislature, seems likely to be killed during incubation, even if there is among the law-makers any disposition to hatch it out—which must be very doubtful.

WHY PRICES ARE HIGH IN CALIFORNIA.

IT IS not unusual for prices of potatoes and onions to be high in California at this time of the year, and the causes which make them high this year are the same which usually advance them, operating now with unusual severity and stress. These two common and heavy vegetables, for which we have almost unlimited suitable land, have always been subject to wide fluctuations. At times potatoes have more than paid in one crop for the land on which it has been grown; at other times they have hardly paid for the sacks in which they are marketed. At times frugal families have boiled rice because potatoes were too high and restaurants have laid a charge on them, while at other times the restaurateur would throw in with a meat dish a boiled spud as long as a French loaf or a shovelful of fried—whichever you might choose. Onions have acted in the same way, but not to the same extent. This fluctuation in supply, which has caused extremes in value, has been in part natural action and reaction in cropping based upon experience in selling, but always in front of a background of distant shipments, invited or refused.

Whenever production east of the Rocky Mountains has partially failed from some cause, and values there have advanced sufficiently to counterbalance overland freight-cost, or whenever (in former years) the railways would help growers to get something out of a big crop by making a special rate to the Middle West, potatoes and onions have moved out of the State freely and local prices have increased. Whenever no such relief could be realized, prices have made profit in these crops a close question, and growers have had to be circumspect in planting. Last year and this an eastward attraction for our potato surplus arose stronger than usual, through the cutting off of imports from Europe, upon which the eastern side of the country has been long dependent in case of need, and a failure of the Eastern crop of 1916, amounting to about one-third of a normal product, or nearly one hundred million bushels, quite clearly explains why potatoes are high in this State. The relation of California to the Eastern shortage in esculent foods was indicated in a dispatch from Chicago last week as follows:

"The farmers in Michigan, Wisconsin and Minnesota are not holding back potatoes for higher prices. Their supplies are practically exhausted. In former years, when the domestic crop was exhausted, the country bought potatoes from the British Isles. The war prevents that now. The frost in the south has delayed the crops of potatoes, cabbage and onions. We will get no relief until we begin getting in large supplies from California in three or four weeks."

This prophecy of relief from California is based upon two anticipations—the movement from California as the car-famine is remedied, and the conception of California as an early-crop State. Of

the supplies of old crop now stored in this State there are estimated to be about 200 carloads in San Francisco, mostly sold and subject to shipping orders, and about 400 cars in the Stockton region—out of which has to come the large local seed requirements. It is also said that 2000 cars are still to come from Oregon, Washington, and Idaho. On the whole, it seems to us that we shall live through this great stress on potatoes nearly as comfortably as we have survived less stress in the past; and in view of supplies to come, old stock from the north and new crop from our own lands, we would be inclined not to hold potatoes at present prices, for they may be more reasonably expected to recede than to advance.

The wide recognition which California winter-shipped products are now commanding will be of considerable value in the future. The Southern States, even to Florida, have been severely blizzarded this winter, and the dependability of the district is somewhat shaken. We, too, have lost much tender truck in certain localities, but semi-hardy stuff, like lettuce, onions, potatoes, etc., is coming from the fields now, in considerable quantities, both for local use and Eastward shipment. The East is warranted in looking to California for winter service, and such favor must be largely the measure of our future safety in extension and diversification.

CALIFORNIA PREPARING FOR SERVICE.

FOR months past California growers have been stimulated by good prices and outlook for their special products to prepare for largely increased production. It is to be expected that the acreage of potatoes, onions, beans, and tomatoes will be much greater than usual, and with water now assured, if conserved by proper cultivation, to roll up notable field crops. It surely is the outlook that all such things will bring good prices for there will be no carry-over, and the distractions of the world will continue to demand, at least to the end of everything that can be grown in 1917. But care should be had not to gamble too widely in the year's crop. It is not at all to be expected that prices which are at present verging on famine figures will be continued. It will be enough to realize really profitable values, for anything more than that is very liable to die on the way. Buyers are not out freely offering to contract, and contractors are apt to overdo themselves, for reasons of which some may be apparent and some obscure. It is a good thing for the grower to have a good contract, whether it be with a growers' selling organization, or otherwise. In the latter case it is vastly more important that his contract should be good than that it should name the extreme price. It is better to lose fractions in price than to lose whole numbers because a contractor is wretched or irresponsible. Wild buying and all kinds of ventures are to be expected under the sensational conditions which seem to be now prevalent, and if prices should recede there will be all kinds of holes in contracts disclosed. Look to the responsibility of the contracting buyer and attach due weight to your assurance of that.

BABES IN THE WOODS.

IT IS natural of course that people should be excited by the prices which they now have to pay for onions, potatoes, beans, and other vegetables, and it is perfectly right for them to beat against the bars which have arisen between them and their customary food supplies, but they should try to do it without adding bruised knuckles to gnawing

California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau at San Francisco for the week ending at 5 p. m., February 27, 1917:

STATIONS	Rainfall Data		Temperature Data	
	Past Week	Seasonal To Date	Normal To Date	Max'm Min'm
Eureka	4.10	21.43	31.31	56 32
Red Bluff	3.58	14.88	17.51	60 36
Sacramento	3.38	11.48	13.86	60 38
San Francisco	2.69	13.97	16.21	60 44
San Jose	3.24	11.34	11.56	60 48
Fresno	.42	6.22	6.43	64 42
Independence	..	..	..	..
San Luis Obispo	4.24	21.97	13.93	60 46
Los Angeles	1.80	14.34	10.86	64 44
San Diego	.66	8.46	7.06	64 44

machs. This can be done by ascertaining the truth about the causes and conditions which have made high prices possible, and then meeting them by wise productive effort, as has been suggested above. A word, however, should be said about certain frantic cries which are being made for relief efforts which, because of their nature and requirements, can relieve little or nothing, and, even projected as enterprises for profit, can profit nothing. They sound very plausible in the public ear because the public notion of producing food is that it consists of spring-scattering of seed and autumn-gathering of crop, and, therefore, anyone can do it, to the end that he can save money, by making it unnecessary for him to buy, or make money by selling the vast weights of produce he will get in the fall for the prices which he had to pay for the seed in the spring. For the sake of our own conscience we must say that those who are deceived by such visions are not wise. The great ventures which are pictured—by which ones shall farm vacant lots with the municipal payroll for the public benefit—are economic nightmares. The little enterprises—by which owners of vacant lots shall hire labor at city rates to do things which neither employers nor laborers know how to do—are economic day-dreams. The

only undertakings which have any chance of coming through as calculated are those in which men and women, who know how to do it, are able to translate their leisure time into work, paying little or nothing for wages except for team or tractor work in the preliminary plowing. They may, of course, multiply their own powers by using mule or gasoline motors in cultivation if they will themselves dodge the heels of the mule or guide the gasoline, but if they undertake to hire mule or gasoline artists at city prices for the service, their investments will nearly always exceed their receipts from the products. We speak of this because we have so many appeals, by wire and wireless, for pointers from those who wonder if they are not losing the chances of their lives by neglecting backyard investments or enterprises for food production. We do not hear much from those who know the requirements. They either get in or keep out, because they do know the requirements and how to meet them, by doing or not doing, as the case may be. It does not matter much how high prices may be, those who try to break into commercial production without more practical knowledge than their speculative vision prescribes, are almost sure to encounter a submarine.

take care of itself on capri trees unless you get too hard freezing on such low ground. A few caprifigs for shade around your buildings would probably wasp the whole neighborhood.

Callusing Fig Cuttings.

To the Editor: I have fig cuttings and am told to put them in the ground head down until they callus over before planting out in a nursery row. Is this the correct procedure?—J. D. N., Modesto.

It is a very old and successful practice with hard wood cuttings—not only with fig but vine, rose, etc. The formation of callus is nature's way of healing injuries to woody and bony tissue. In the case of woody tissue new cell growth proceeds from the alburnum or growing layer and the growth of new roots proceeds from the same layer—therefore to get a callus is the foundation of rooting the cutting. The activity of the alburnum which results in a callus is due to a requisite amount of heat. By inverting the cutting you bring its lower end nearer to the surface, where there is more heat and (in the rainy season) less danger of too much water; the calluses come more quickly and the cutting is surer to live and grow. Cuttings are tied in bundles for callusing because they are more easily dug out and more likely to keep their tender calluses safe from injury. They should of course be set singly right side up in nursery rows as soon as the callus is formed. It should be added, however, that this rational and successful method is not usually necessary. In free loamy soil, in which water does not stand, most cuttings callus and root well enough if placed at once right side up in nursery rows.

Fig and Grape Partnership.

To the Editor: I have Bartlett pears with alfalfa in between and after battling with the blight unsuccessfully, I plan to take them out next fall and plant figs and grapes. Near me a fig orchard is on the same kind of sandy ground and last year had much cracked fruit. The water comes up to about two feet in summer, but goes down to five or six feet when irrigation stops and stays down all winter. Can I grow figs and grapes for an indefinite period, or must the grapes give way for the figs in 10 years? Would the water being so close cause the figs to crack?—N. D. J., Modesto.

You will have to do your own guessing about what causes figs to crack. Neither cause nor cure have yet been demonstrated. Figs and grapes can be grown together indefinitely. We know that from European experience. But we also know that under California commercial conditions and methods of soil and fruit handling it is better not to clutter up your property with such a combination for very long, and perhaps better still not to do it at all. After a few years of hard work in getting sunshine for the grapes and root room for the figs, you will be trying to sell out a "finely assorted fruit plantation" to a tenderfoot. We would rather let alfalfa drink up the excess of summer water in the fig orchard and give the grapes sky-room by themselves.

Handling Fig Cuttings.

To the Editor: I have pruned Calimyrna fig trees and desire to propagate trees from these prunings or cuttings. I presume the ground is too cold for them now. If so, how can I preserve them and until about when? For the time being I have piled them and covered with damp straw.—H. J. H., Terra Bella.

Damp straw is dangerous. It is likely to heat by fermentation and scald the cuttings or to mold and cause decay. Bury the cuttings in bundles in sandy loam in a place where the water will not collect or put them into boxes of clean sand and keep moist but not wet. It is not, however, necessary to do so as late as this, for if you have well-drained loam you can set them in nursery rows immediately.

Pruning the Feijoa.

To the Editor: What is the proper heading and pruning of the feijoa?—P. W., Corning.

It only needs pruning enough to form a well shaped bush. It takes most readily to a roundish form and should be checked from too much rambling—though, as the fruit comes on the new wood, enough of the newer growth must be carefully provided for. In a garden the plant can be trained to a fence, trellis, etc., but usually shapes itself pretty well with the slight assistance indicated.

By
the Editor

QUERIES AND REPLIES

Inquirer Must
Give Full Name
and Address

Growing Broom Corn.

To the Editor: You recently mentioned a Utah concern contracting for broom corn at \$00.00 a ton. What is the name of the concern? I have a piece of delta land, peat and siltment, and I would like to get in touch with these people in Utah. I have also been approached by some San Francisco parties. I understand a moist soil is required. What is a good average yield on river bottoms? When should it be planted? How far apart should it be rowed and should it be planted in hills or a continuous row? I have been advised there is good feed value in the seed.—A. W., Holt.

We have not the address you want. Probably it can sell just as well in California towns. Utah has fewer sweepers than California and probably has contracted for all required. The price quoted for broom corn applies only to the properly cut, cured and baled brush in shape for the broom maker. The crop is often profitable, but one has to know how to handle it. It is planted at the same time and in the same ways as Indian corn. It is a sorghum and seeds at the top. While still green the tops have to be broken over so the brush can be cut, if it is a tall kind of corn. If a dwarf kind, the brush can be more cheaply gathered by pulling, for it is within reach and it works that way. The brush is taken to a machine for scraping off the seed and it is then cured. Simple cutting and drying will not do. There is quite a trick about making a good crop of broom corn and quite a lot of hand work when you know how to do it. This must be learned before risking the crop. The seed is edible for stock, but not as good as other sorghums and is especially poor when the brush is the product because it must be taken while still green and before the seed fills well. The yield of broom corn in California ranges from 600 to 750 lbs. of merchantable brush per acre—in extreme cases nearly 1000 lbs. If you get a broom corn bee in your bonnet the first thing to do is to send to the U. S. Dept. of Agr., Washington, D. C., for a copy of "Farmer's Bulletin No. 768" and study it carefully so as to understand that the crop costs a lot and that you are not likely to get over-rich at 100 per ton at the prices you have to pay for labor in this State. But, above all, do not monkey with the crop unless you understand all its requirements.

Grain for Fowls.

To the Editor: Which is the best grain for chickens, other than wheat, when to plant, and number of pounds per acre? Milo, Kaffir and Feterita have been recommended.—G. L. C., Fair Oaks.

About the only grain you can sow on upland as late as this is one of the sorghums you mention, all of which will take to the conditions

better than Indian corn. Sow as soon as you get past danger of frost (probably early in May) but go at the land as soon as it gets into shape after this rain, plow and harrow and let it lie. Plow in the green stuff shallow and sow thinly in drills three and a half feet to facilitate cultivation during growth. Plants should stand several inches apart and about six pounds should seed an acre. Preferences between the different sorghum varieties seems to be largely a local or personal question. Put in milo and feterita and see if you can settle the preference for yourself—the latter is a fine large grain and comes to ripe grain sooner. If you expect the cows to take the roughage, they will prefer Kaffir.

Complete Fertilizer Indicated.

To the Editor: I wish to plant potatoes, corn and beans in sandy soil three miles from coast, and want to fertilize. What kind of fertilizer is best to use and what time to apply to get best results?—J. T. S., Berros.

So near the end of the rainy season and so near the planting time when the plants must have the sandy soil without coarse stuff to cause it to dry out, there is only one application you can reasonably make and that is a "complete" commercial fertilizer which dealers can furnish you under that name with the ingredients soluble and proportioned according to the requirements of the plants named, which their formulas are built upon. When you get the crops off early next fall spread and plow in all the barnyard manure you can get hold of at reasonable cost for buying or hauling, and sow peas or vetches to plow under green this time next year, to get ready for your summer crops of 1918.

Fruits for River-Bottom.

To the Editor: I have very rich sandy soil on river bank. During high water this land is flooded for a few days. Most of the year the water in the river is about 8 feet below the land. Do you think this land suitable for figs or would the roots go down to water and cause the figs to sour? If I plant Smyrna fig will I have to get fig wasps every year, or will wasp live in caprifig from year to year? If so what per cent of caprifig would I have to plant? Or do you think I could do better by planting nuts—pecans or walnuts?—L. C. N., Kingsburg.

If your high water comes during the active season of the trees, we should question the suitability of the land for fruits, although there are sometimes local conditions which might make plums and pears safe, and productive, if on the right roots. Pecans would probably delight in the conditions, and walnuts on black walnut roots might take to it all right. It would probably be a bad place for drying figs. The fig insect should

Apples Chiefly Grown in California.

[We receive just in time for presentation in this issue a monograph on commercial apple growing in the United States prepared by H. P. Gould and Frank Andrews and published by the Bureau of Plant Industry of the United States Department of Agriculture. It reviews the commercial apple growing in California. On the basis of the last U. S. Census it places California eighth in the list of apple-growing states—being preceded in volume of product by New York, Michigan, Pennsylvania, Missouri, Kentucky, Iowa and Virginia. It then proceeds with brief discussions of apple growing, geographically and on the basis of varieties grown, and presents California as follows.—Editors.]

Apple growing in California is widely distributed. From 100 to 500 acres or more of bearing trees occur in nearly every county in the State, but a very large proportion of the commercial crop is produced in two or three sections. The Pajaro Valley, which includes the southern part of Santa Cruz county and the northern part of Monterey county, perhaps more commonly called the Watsonville district, is the most important apple-growing section in California, the two counties named producing nearly 65 per cent of the entire crop of the State. The Sebastopol section of Sonoma county is the second largest district, that county producing about 16 per cent of the normal crop of the State. The other counties, each of which produces 2 per cent or more of the normal crop of the entire State, are San Bernardino (4 per cent), Nevada (3 per cent), and Los Angeles and Humboldt (each 2 per cent). The production in each of the counties not named in the present connection is less than 2 per cent of a normal crop of the State. Recent plantings in San Diego, San Bernardino, and Riverside counties doubtless will increase materially the apple production in these counties within the next few years.

Varieties.—A large proportion of the commercial apple crop of California is made up of three varieties, Yellow Bellflower and Yellow Newtown, grown in the Pajaro Valley, and the Gravenstein, which characterizes the output from the Sebastopol section of Sonoma county.

Perhaps no more comprehensive index of the regional value of varieties can be given than the summary of the responses made by apple growers to a request issued by the Office of the California State Commissioner of Horticulture for information in regard to what were the leading sorts.

The replies to the request for lists (as published by Geo. P. Weldon in his pamphlet on "Apple Growing in California") of the leading sorts in the different sections mentioned in all some 48 different varieties, of which the following 20, listed alphabetically, are given prominence in the bulletin already cited, because of their relative importance in the apple industry of the State:

Arkansas (Mammoth Black Twig).—Grown only to a limited extent, but has some very desirable characteristics.

Arkansas Black—Rather popular

in some parts of Southern California.

Baldwin.—Does quite well in a few favored localities in the mountains. Quite a large acreage has been planted in Sonoma county.

Banana (Winter Banana).—Usually does best at rather high altitudes, though excellent specimens have been grown in Santa Cruz county.

Black Ben.—This variety, or Gano, is suggested for planting instead of Ben Davis, which at present constitutes nearly 4 per cent of the entire crop of the State.

Delicious.—Not yet fully tested, but considered promising in certain parts of the foothills and mountainous sections of Southern California.

Esopus (Spitzenberg).—Not generally grown, but recommended by some for a few localities.

Gravenstein.—Does well in many parts of the State, but is of special importance in the Sebastopol section.

Grimes.—Occurs only occasionally, but as a rule it gives good results wherever grown.

Jonathan.—Not generally grown, but reported to do well in places in Riverside, San Bernardino, San Diego, El Dorado, Mendocino, and Humboldt counties.

King David.—Not fully tested, but considerably planted in some of the younger orchards in Riverside and San Bernardino counties.

Ortley.—Especially mentioned for the foothill sections in Placer and Mariposa counties.

Rhode Island Greening.—Especially mentioned for Humboldt and San Diego counties—the extreme northern and southern parts of the State.

Rome Beauty.—Planted more or less widely. Reported to do especially well in the Yucaipa section of San Bernardino county.

Stayman Winesap.—Not yet extensively grown, but considered very promising for the apple sections of San Bernardino, Riverside, and Tehama counties.

Wagener.—Reported to do well in sections of Humboldt, Mendocino, Sonoma, and Napa counties.

White Pearmain (Winter Pearmain).—Occurs quite generally in the older orchards in many parts of the State where it habitually does well. It is especially mentioned for the mountainous sections of Madera, San Bernardino, and San Diego counties; also does well in the Pajaro and Santa Clara Valleys.

Winesap.—Quite extensively planted in the foothills; it is widely distributed in the older orchards in many sections of the State.

Yellow Bellflower.—Of special value in the Watsonville district where, with the Yellow Newtown, it very largely forms the basis of the apple industry of that section, but is planted more or less widely in many parts of the State.

Yellow Newtown.—The comments under the preceding variety also apply to the Yellow Newtown. Aside from the Watsonville section, it is especially mentioned for planting in Humboldt and Lassen counties in the northern part and in San Diego, Riverside, and San Bernardino counties in the southern part of the State.

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Selecting and Rooting Grape Cuttings.

[Written for Pacific Rural Press.]

Make your grape cuttings at pruning, especially if that comes just before growth starts in the spring, if your vines are vigorous, because at that time the food material reserved all winter in the roots is being sent up to the canes in quantities and the cutting will have most food with which to put out roots and new growth. In selecting canes for cuttings, you will get a much better stand of stronger plants if you take those in which there is plenty of food material. Prof F. T. Bioletti of the University of California suggests an easily applied test for this, which should be used if you select cuttings in the winter time. Get a solution of one part by weight of iodine in 100 parts by weight of 75 per cent alcohol. Make a slanting cut through the cane and apply a few drops of the solution to the cut surface. In five minutes a cane having an abundance of reserve food materials will turn black wherever the iodine touched it. If it is weak, only the medullary rays will blacken, showing like spokes of a wheel.

If only a few black specks show the cane is worthless for cuttings and the vine should be pruned heavily. By noticing the last year's growth, only a few tests in a vineyard will need to be applied.

It is reasonable to believe what certain growers have observed, that a cane which bore fruit the past sea-

son heavily, if it is fat and its terminal bud is well matured instead of being wasted away, will make the best and most fruitful vines.

A 90 Per Cent Stand in the Field.
—Of 885 Emperor cuttings planted by A. B. Cate of Fresno county last spring, about 875 grew. A few were lost by allowing them to dry out before the second irrigation, so that when we saw them in the fall, the stand was estimated at 90 per cent and the growth averaged about two feet long.

The cuttings were made from the prunings of his Emperor vineyard Mar. 22. Before pruning, growth had started 2 or 3 inches. They were heeled in upside down and entirely covered with dirt till the second week of April when they were planted in vineyard form. The ends had calloused, but no roots had started.

They were irrigated by furrows two weeks after planting. Before the second irrigation the growth wilted, turned yellow, and some of the young plants died, because it was not applied soon enough. They were irrigated four times during the season.

The question of whether the land might better have been used for a crop the first season, rooting the cuttings in a bed, and planting year-old rooted cuttings the next spring, is not determined. In the light soil of the grape districts of Fresno county, cuttings root very satisfactorily in vineyard form; and perhaps in that way the vines would be enough farther along at the end of the second year to pay for the lost use of the land and the chance of a poor stand.

WHEN TO PLOW COVER CROP.

To the Editor: When is the best time to plow under a legume orchard cover crop to get the most nitrogen? —F. B. A., Lindsay.

When it has matured and quit growing. The most nitrogen, however, is not the only consideration. Enough water must be actually supplied to soak the ground as far down as the tree roots should go, and to keep it moist. If allowed to ripen, it is considerably harder to turn under because it gets tough and is likely to bunch up in front of the plow. While growing, it is using the soil fertility and withdrawing that much from the trees. Unless you have plenty of plant food in the soil for both cover crop and trees the trees are likely to be robbed just at a season of great strain when putting out the first new growth. Unless you have plenty of fertility for the trees' use at this season, it might be better to turn under the cover crop green and early so it may be decomposed and yield up its store of nitrogen when the trees need it, rather than robbing them at that time. On heavy soil the tough, fibrous cover crop is likely to be a great benefit by loosening it, but not so on sandy dry soil.

Southern California is to have a branch of the State Insectary to be located at Alhambra and in charge of E. J. Brannigan who has been several years with the State Insectary at Sacramento.

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Prune and Fertilize Citrus Early.

[Written for Pacific Rural Press.]

The National Orange Co. spent \$75,000 last year for manure, bean straw, alfalfa, etc., to use as fertilizer on their 140,000 trees in Riverside county. The heaviest crop seen by a Pacific Rural Press representative in a month's trip in Southern California was that on two rows of Thompson's Improved Navels on their Vivendi ranch. Tangerines also were loaded thicker than a Christmas tree is with popcorn and glitter. Rows of Washington Navels along the road through the Eureka ranch were almost equally heavy with fruit.

But those farther back in these blocks had only a quarter crop "because they were fertilized too late," as told us by E. A. Chase, who has spent 25 years developing the orange industry about Riverside. On a big block in another of their ranches, pruning had been done after the spring growth started. Much of this was necessarily sacrificed, reducing the fruiting possibilities of the trees and wasting the substance they had put into that spring growth. So Mr. Chase emphasized the need of pruning and fertilizing while citrus trees are most nearly dormant in winter; for the trees need plant food especially when putting out new growth.

"Pruning is one of the most important things," says Mr. Chase. "If we had pruned right, after the big freeze, we would already be \$150,000 better off. This year's wood blossoms and fruits next year. You get such wood by pruning. We have been two years cutting out the

wood killed by the big freeze, and are at it now (Feb. 6). The pruning had to be heavy; and you can see through the trees now. But henceforth we think that so far as possible, we will trim out lightly every year or two, keeping out the suckers especially. Where we prune heavy, there is so little fruit wood left that the crop will be light the following year; and also where we prune late, we take out too much fruit wood. January to April is the proper pruning period for Navels. We want to keep the trees open, however, and the fruit wood distributed throughout the trees. We want to produce fruit wood for the following season too; and you see there is plenty of it even on our heaviest loaded trees."

Feeding the Trees.—"But with the best of pruning, you can't get strong fruit wood and fruit, unless you feed the trees what they like and plenty of it. They must have organic matter; and we are seeing results from that. A block in the Victoria grove has a light crop because it was not fertilized well."

"We think bean straw and alfalfa are equal to stable manure or better. Here are three rows, one mulched with alfalfa, one with bean straw, and one with manure. There isn't much difference in crop or growth. You see all of them have fine crops. But here is a row heavily manured and with scarcely any crop, because it was manured too late to help the fruit set last season. Fertilizing in mulched basins reaches the roots,

likely not to be plumb and will make a wobbly line. It is necessary to have the whitewash so the stakes can be sighted as the men cross the field. This sighting takes no time, and if done in several directions, reveals any misplaced stakes before the trees are set.

LAYING OUT A FIELD FOR ORCHARD PLANTING.

[Written for Pacific Rural Press.]

"Never plant the first row of trees so near the line that you will have difficulties with your neighbors while the trees live. Walnut trees should not be nearer than 25 feet from the line," says W. D. McCroskey of Los Angeles county.

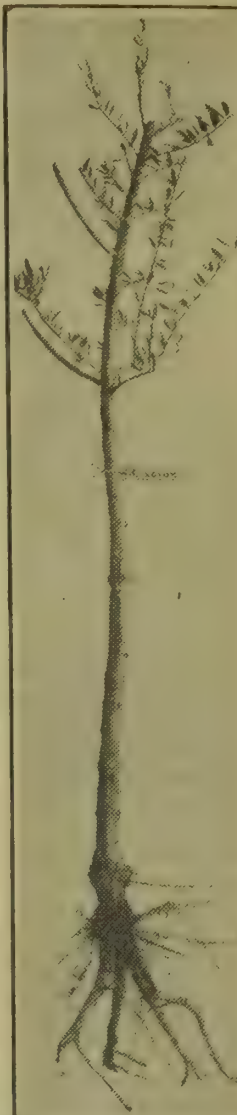
Taking a 10-acre piece for example, two men can stake it off in a day. They find the corners and run a wire down one end at the right distance inward from them. Stakes are set at proper intervals along this line, measuring with a steel tape because it does not stretch. At each stake, wrap a piece of auto tape twice around the wire. More than twice makes a bump which might catch too hard when moving the wire. Less tape might slip too easily.

Then the wire is stretched along the side at right angles to the first line and at the same distance from the edge. When this has been staked, the wire is moved across the field parallel with the side, and the far end set for each new row by measuring from the last row and pulling the line tight from the already staked end of the field. Both men then start toward center, placing stakes as they go, after which the wire is again moved.

Stakes should be 14 inches long and sharpened at one end. The other end is dipped in whitewash made of a handful of lime in a bucket of water. Stakes should project not over four inches above ground because if they do, many are

"Get everything right before starting the tree planting, and the work

will move smoothly all through." says Mr. McCroskey.



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CUT WORMS EAT FRUIT BUDS.

[Written for Pacific Rural Press by W. P. Wickliffe, Parlier.]

Last year some of your subscribers complained of the birds eating fruit buds. The birds do damage some crops; but I have my doubts in this case. Kill some of the birds and examine them to find out if they are to blame.

I think the fruit bud trouble is with the cut worm. Three and four years ago I had my peach crop damaged considerably by the cutworms and I accused the birds; for there were great swarms of linnets in the orchard. Two years ago I had my attention called to the cutworms. The linnets were as thick as the two previous years and I saved my crop by keeping the cutworms off the trees.

The linnets are always thick when there are plenty of worms.

Keep Worms Off.—The most successful way to keep the worms from climbing the trees is to use tree tanglefoot; but do not use it as the manufacturers recommend; for it is too expensive. Coat grapevine twine with tanglefoot and tie it around the trunk of the tree. The worms will not crawl over it. Be careful that no limbs touch the ground or grass.

If the orchard were plowed in the fall or early winter so as to get rid of all leaves and trash I think there would be less trouble with the worms. They work at night and if any one wants to see them, take a lantern and examine the trees. The worms begin to climb between 9 and 10 p. m. I have found them on trees 15 feet high at the top.

INTRODUCTION OF THE FIG INSECT.

In answer to the statement about the coming of the fig insect to California by George C. Roeding, which was published in our issue of February 10, G. P. Rixford has written and filed with us a re-statement of the evidence upon which he and Dr. Swingle satisfied themselves that the insect was abundantly in California many years before the achievement by Dr. Swingle and Mr. Roeding, which consisted in successful introduction and multiplication in 1899. Mr. Rixford in his effort to present the narrative in very condensed form has unavoidably weakened it by omissions, and it seems to us that all readers who are interested to see what Mr. Roeding considers as unsatisfactory evidence of earlier introduction should read the original account by Messrs. Swingle and Rixford which can be found in the Pacific Rural Press of December 17, 1910, and in the "Report of the Fruit Growers' Convention" for that year.

The Department of Agriculture at Washington is making a shipping test of oranges from Southern California. Last week a string of cars was loaded with oranges from San Dimas, Pomona, and Covina and accompanied by two government inspectors, who will take observations all along the line to Minneapolis, which is the destination of the shipments. The inspectors will take notice of the refrigeration, ventilation, transportation, insulation, and manner of loading. Each car has a self-registering thermometer.

Roeding's Page

OLIVES

ON TREES

WHO would have believed twenty years ago that California would be supplying the European countries with the various fruits that she originally exported to the United States?

Today there is not a fruit grown in the great Mediterranean section in Europe, which is not being successfully produced and marketed in California. The success of the olive is a notable example.

Our Nurseries have been more closely associated with the growing of the olive than possibly any other concern in the State.

Twenty-five years ago we were growing over 30 varieties of olives. At that time our attention was given to both the oil and the pickling varieties.

Now that it has been demonstrated that a good pickling olive makes an excellent grade of oil in nearly all cases, the elimination of so many varieties has been very pronounced. The demand has dwindled down to a few standard varieties which seemed to meet the exacting demands of firms engaged in the business commercially.

We have devoted our attention particularly to growing the best types of these recognized standards.

There are thousands of acres of fine land available for olive trees in California.

While olives can be grown on dry lands and the trees maintained by intense cultivation, it is not best to attempt to grow olives for pickling purposes except on land where irrigation can be practised.

VARIETIES TO PLANT.

When planting an olive orchard, it is well to remember that the Manzanillo Olives are picked and in the vat before even commencing

to pick the Mission Olives.

It is not wise to confine your planting to one variety of olives.

The Manzanillo is one of the standards for green and ripe pickles. It also produces oil of a very high grade. It is a very hardy, regular and prolific bearer.

Outside of the Sevillano or Queen Olives, which are so largely shipped as the green olive from Spain, the Manzanillo is the only variety exported from that country.

The Mission has always been a popular variety. The tree is a handsome upright grower; very fine for avenues; the fruit is medium to large; makes excellent pickles and a superior quality of oil.

A large grower and packer in California advises planting a portion of an orchard to Manzanillos and another portion to Mission Olives; by so doing the fruit will not all ripen at the same time, thus allowing the orchardist more time in which to harvest his crops.

Space on this page does not permit of us going into the subject as fully as we would like, but if any one interested in olive culture will write to us, we will be very glad to furnish additional information.



Orders for any considerable number of citrus trees received from all points in Southern California will be filled from our Nurseries at La Habra, Orange County, thus saving time and freight.

CITRUS TREES continue to be profitable. It was not so many years ago when it was generally believed that there was an overproduction, but improved marketing conditions have kept pace with the increasing production. Today there is a strong, growing demand for California Oranges, Lemons, Pomelos and Avocados. Any one who has suitable land, with water, need not hesitate a moment about planting citrus trees, for these trees, with proper care, will return a greater revenue per acre than most any other crop.

Oranges
Lemons
Grapefruit
Avocados

WALNUTS AND PECANS should be extensively planted. They do well in many sections of California and return a good revenue to the orchardist. There are thousands of acres throughout the great valleys in our Coast counties which should be devoted to nut culture.

PERSIMMONS

We have called attention frequently to the desirability of planting Persimmons. The commercial importance of the Japanese Persimmon is well established. We have an excellent stock of the best known varieties of these trees.

Catalogue

Write today for our new illustrated 1917 price catalog, listing over 2000 varieties. When writing send us a list of your tree requirements and we will quote you prices.

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President & Manager

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Fresno, Cal.

Crown Gall from Seedling Stubs.

[Written for Pacific Rural Press.]

Last summer we printed a communication from C. J. Oswald of Kern county telling his experience in following crown gall on about 20 young apricot trees on apricot root, along a sort of curly core which developed discoloration in the deeper wood and terminated in a fermented stub of the seedling tree. On Feb. 13, 1917, he showed our representative results of his treatment which were apparently entirely successful, except in one case, a plum tree, where the knot was not followed to the stub. Two or three knots found on peach trees also seemed healed.

Mr. Oswald re-emphasizes the necessity of nursery seedlings being cut off close to the bud and shellacked, varnished, painted, or asphalted to prevent infection until the wound is healed over.

"On trees infected with crown gall, getting that stub out—that's the thing," says he. "Nurseries leave the stubs so long that when they do finally heal over, it is like healing a splinter in a man's flesh."

Careful digging a few inches deep around each tree while they were leaving out last spring revealed the infected ones. The knots were broken off; and in each case where the inspection late last January revealed apparent success, the curly core, all discolored wood, and the dead seedling stub had been thoroughly removed with a gouge. This tool has a curved edge on the end about half an inch across, and is otherwise like an ordinary chisel. With it, the cutting can be done smoothly. The wound was well var-

nished and the hole left open to avoid reinfection, and to get the benefit of sunlight and air.

Irrigation was never applied closer than 18 inches from the youngest trees; last season on two-year trees it was three feet; next season it will be four feet.

One tree 4½ inches in diameter, operated on last March when well leaved out, had been dug to the center, half the circumference of the bark had been cut off, and nearly half of the wood for a height of several inches.

As seen Feb. 13, it was healing fine, with a clean hole only 1½ inches across. A hole the size of an apple on another tree had healed till it lacked only ½ inch of covering the wound.

One peach tree planted in the spring of 1914 had been shipped with a knot the size of a walnut three inches from the trunk on a root the size of a lead pencil. This root was cut off when planted, and all discolored wood cut out of the tree; but not including the seedling stub. Last spring, a crown gall as big as two fists was found and all roots on that side had knots. These were cut off from the tree, pulled out, and burned, the stub dug out clean, and painted with Bordeaux paste. This spring, the wound shows no gall growth, but a fine roll of growing tissue closing it up. One tree last spring had a knot on each of two sides. Both were followed to the stub so that a hole was cut clear through the tree. It seems clean now, and free from crown gall.

Diamond and Duke Plum on Peach.

To the Editor: I have heard from several sources that plums like Diamond and Grand Duke should not be grafted or budded on peach root. My experience up here is just contrary to this, as the following facts will show: In the spring of 1912 I planted on the site of an old apple orchard (trees removed the winter before) on 3½ acres, 150 Diamond, 150 Grand Duke, and 50 Kelsey, all on peach root. These trees are growing splendidly, especially the

Grand Duke. The trunks of most are over 4 inches, some nearly 6 inches in diameter. Last fall, their fifth year, I had the following crop from this little orchard: Diamonds, 302 crates from 150 trees; Grand Dukes, 241 crates from 150 trees; Kelsey, 108 crates from 50 trees. Total, 651 crates from 350 trees.

For this crop I received \$898.35 from the fruit house. Deducting 25c per crate for picking, shook, packing, and delivery leaves me a net return of \$220 per acre, which I think is splendid for such young trees:

I know of other plantings about the same time on Myrobalan roots (Diamond, Grand Dukes, Gros and Giant) losing many trees each season, while I have lost very few only. Placerville. Chas. Schaeppi.

ALOES FOR RABBITS.

[Written for Pacific Rural Press.]

A fruit grower next to rabbit-infested foothills of Colusa county last year built a rabbit fence around his 24 acres of two-year trees. Jack-rabbits and cottontails showed him how many ways that fence was a joke. But the fruit grower had his trees sprayed early in June with aloes and whitewash, mixed as per boiled-recipe in "California Fruits" and the trees were not bothered any more.

A State nursery to grow trees and shrubs for highway decoration and reforestation is proposed in a bill before the Legislature.

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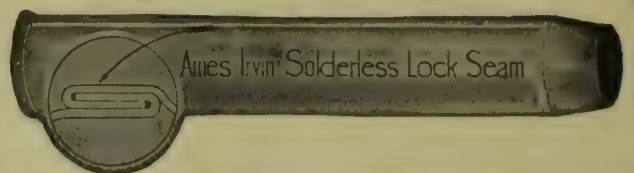
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10 Cannas, all different.....	\$1.00
24 Gladiolus, 4 named sorts.....	\$1.00
8 Assorted Shrubs, Lilacs, etc.....	\$1.00
5 Fruit Trees, 3-4 feet, cut back.....	\$1.00
(Apple, Peach, Plum, Pear, Quince, Fig.)	
6 Assorted Shade Trees, 3-4 feet.....	\$1.00
(Elm, Ash, Maple, Sycamore, Poplar, Linden)	

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A National Food Investigation.

At the direction of President Wilson the Federal Trade Commission and the department of Agriculture will begin an immediate investigation into the causes of advancing food prices in the United States, with special reference to alleged violations of the anti-trust acts. An emergency appropriation will be asked of Congress for the inquiry. President Wilson's request for the inquiry declares that adequate food supply, a matter of concern to the nation at all times, is of peculiar importance at the present. Despite much that has been done toward obtaining definite information concerning the supply and demand of foods it is not yet clear, he said, what measures are necessary to fundamental improvements.

"It is obvious," the letter asserts, "that there will be no sufficient incentive to enlarge production if there does not exist an unobstructed and economical system of distribution. Unjustifiable fluctuations in prices are not merely demoralizing; they inevitably deter adequate production. It has been alleged * * that the course of trade in important food products is not free, but is restricted and controlled by artificial and illegal means. It is of the highest public concern to ascertain the truth or falsity of these allegations."

Arsenical Dust in Garden Work.

An arsenate of lead powder is very helpful in controlling the biting insects that are likely to attack several kinds of crops, and often appear very early in California. Any standard arsenate of lead powder may be secured, mixed with an equal amount of sulphur, flour, sifted ashes or any finely powdered neutral substance. One of the best of these powders, according to Professor A. L. Lovett, insect pest specialist at the Oregon Agricultural College, is the sifted ashes. The mixture is put into a small sack, or bag of similar material, and shaken over the plants until the right amount has been ap-

plied. Being easily seen, the operator can apply as much or as little as he wishes. If applied in early morning the moisture will cause the material to adhere to the leaves more closely.

"This powder is very effective in controlling flea beetles, diabroticas, slugs, and other leaf-eating pests that attack such crops as beans, lettuce, corn and squash," said Professor Lovett. "An application every ten days should keep the pests under control except when followed by a rain, in which case the new application should be made when the rain ceases.

"Another means of securing protection from the leaf eaters to be used in connection with the powder is the use of trap crops. If in planting beans, for instance, a few hills of squash are planted, some of the vines may be allowed to bear fruit while others are left unsprayed or unpowdered to attract the pests. The pests move about freely from place to place, and simply killing off or driving away a single infestation does not secure immunity from further attack. Protection can be secured only by repeated measures."

SOME MILO STORY.

[Written for Pacific Rural Press.]

Seven acres of milo maize planted in April by J. M. Tigner & Son of Imperial county yielded 12 tons of matured head corn cut in June. The stalks were then pastured by 56 steers for a month, yielding \$84 cash from the steer owner. The stalks looked good for nothing, but a neighbor offered \$17 to pasture some mules on them for a short time. Then he offered \$9 more to pasture three horses on it for a longer time. The field was watered twice a month all through the season, and the crowns of the milo had sent up a good growth of new shoots. If the old stalks had not matured, but had been checked in their growth by drouth or frost, there would have been danger from pasturing the new growth.

The U. S. Senate has passed an amendment to the Agricultural Appropriation bill for an appropriation of \$35,000 to be used in extending the U. S. Plant Introduction Station at Chico.

TALKS ON Nitrogenous Fertilization

Number 10

DO you know that rice is the principal food of more than half the world's people? Over two million bushels was California's contribution to the 1915 crop. The yield, 66.7 bushels per acre, was twice that in Louisiana, where half the crop was grown.

The Department of Agriculture has published figures showing how rice culture has developed in California.

Year	Acreage	Bus. per Acre	Total prod. (bus.)	Avg. farm price	Total value
1910	100	33	3,300	\$0.65	\$ 2,000
1915	34,000	66.7	2,268,000	0.90	2,041,000

A ton of rice and its equivalent straw (4,000 pounds) removes 54 pounds of nitrogen from the soil, which, in California, tends naturally to nitrogen deficiency. Improved cultural methods, and possibly a scattering use of fertilizers, have helped overcome adverse conditions, but further increases depend largely upon the application in sufficient quantities of the most effective nitrogenous material.

SULPHATE OF AMMONIA

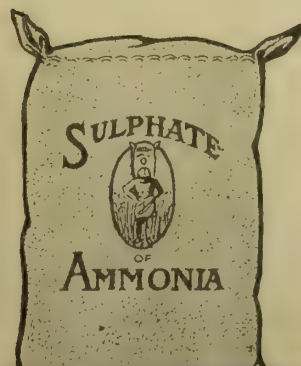
is definitely stated by investigators in India, Japan, Hawaii, Louisiana, etc., to be a superior form of nitrogen for irrigated rice. Dr. Kelley (Berkeley Experiment Station) found an application of 300 pounds per acre to give the largest net profit on soils similar in alkaline reaction to those of California.

Applied to small grains or hay crops, Sulphate of Ammonia gives equally attractive returns.

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Low Moisture Content of California Wheat

There was held in this city recently a hearing by representatives of the Department of Agriculture, who are gathering data throughout the country before establishing the standards for wheat authorized in the act of Congress approved August, 1916.

J. W. Duval, chief of grain standardization; George Livingston, chief grain superintendent; E. B. Quiggle of the legal office of the Department of Agriculture, and John Wilmeth constituted the Federal party, which listened to the opinions of local grain men.

The proposal is to establish five standard grades for the different varieties of wheat, to be determined by the weight, moisture content, presence of other grains, foreign materials and damaged kernels.

A very important issue was raised by E. Clemens Horst of San Francisco, which he stated as follows:

"To my mind there are two serious defects in proposed standards: You allow the producer or seller nothing for separable extraneous matter of value. You allow the producer or seller nothing for shortage of moisture. Very often the separable extraneous matter in wheat is of as much or greater value than the wheat. It is wrong to penalize for the weight and not pay for such extraneous matter. In some European countries, separable extraneous matter is paid for at its value. The percentage of moisture is a controlling factor between values of Eastern and California wheat. You fix your standard at about 13 per cent moisture. You penalize for any excess, yet you allow nothing on wheat with a 5 per cent moisture, which is about the usual percentage in California, viz.: 60 lbs. wheat at 13 per cent moisture contains 52 lbs. dry wheat; 60 lbs. wheat at 5 per cent moisture contains 57 lbs. dry wheat. In other words, wheat with 5 per cent moisture is worth 10 per cent more in intrinsic value than same wheat with 13 per cent moisture.

"I am of the opinion that moisture

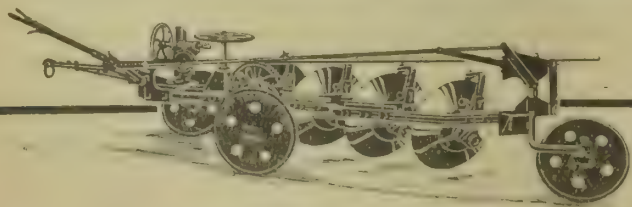
content should be entirely disregarded except in so far as concerns the keeping quality of wheat. That is to say, if the percentage is so great that wheat will not keep, it should be refused any grade. Percentages for that purpose might be used in standards. As between wheats that are sufficiently dry to keep, the standard of moisture should be fixed at whatever you might please, but penalization or premiumizing should be done in proportion to the variation in moisture.

"With the existing high ocean freight rates it is particularly important to get wheat with low percentage of moisture. The ocean freight rates across the Atlantic now run at about \$2.00 per 100 lbs. or \$40.00 per short ton. A steamer carrying 10,000 tons would get \$400,000.00 freight on a single voyage. A difference of 8 per cent in moisture would make \$32,000.00 in freight charges. From this it will be seen that instead of wheat with low moisture content getting no benefit, it ought to get more premium than the difference in moisture content, if the wheat is for export. I do not, however, wish to be understood as recommending any differential in excess of the difference of moisture content.

"The ideal standards for wheat are such as will be based upon the quantity of flour and by-products it makes; upon the color of the same; upon the amount of durum in the flour.

"There ought to be a shorter cut to these results than your standards, which appear to contain factors not in accord, and, in fact, in discord, with an ideal standard."

After Mr. Horst's statement Mr. Duval is reported to have pointed out that, as a less moisture content would be accompanied by greater weight, the proposed classifications indirectly provided for credit for the greater dryness of Pacific Coast wheat. The weights per bushel proposed for the first, second and third grades of the standardization are re-



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in your orchard you can increase your crop, add to the water-storage capacity of the soil, and enable the roots to feed on fresh plant food in the subsoil.

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spectively 61, 59 and 57 pounds, while the minimum moisture content for each grade is 13 per cent. Some of those present thought lot allowances should be made for less moisture content. Duval thought that in practice there would be a slight range of price in each of the grades. The purpose of the standardization is to facilitate sales without samples, the Government licensing inspectors to pass on the quality of the wheat offered under the standardization plan.

It is probable that when the matter is finally adjusted at Washington due allowance will be made for the peculiar character of California wheat as pointed out by Mr. Horst and others.

BEANS FOR FERTILIZER.

[Written for Pacific Rural Press.] Persian grapes among which tepary beans were grown on $4\frac{1}{2}$ acres of one-year vines last summer, made a third more growth for L. M. Stoiber of Imperial Valley than did those on the other half of the same vineyard. The beans had been planted in the spring and the vines plowed under before the grapes were picked.

Beans among Asparagus.—In the large field of asparagus, a lot of pink-bean straw was thrown on for fertilizer before the cutting season. Volunteer beans supplied the ranch with green beans before the cutting season was completed.

When the asparagus was off in April, the ground having been kept continually moist, tepary beans were planted on each side of each row about half way up on the ridges, which are eight feet apart. If planted at the bottom, they would have gotten too much water, for irrigation must continue frequently so the asparagus may mature, and store food in the roots for next spring's crop. The beans were plowed under in July and a volunteer crop sprung up after the first irrigation, to be plowed under in the fall. But summer plowing is too hot work here, and Mr. Stoiber prefers not to plant the teparies until July so he can plow them under in cooler weather after cutting off the asparagus tops and while doing the other fall and winter work. About 12 to 15 pounds of seed were planted per acre, care being taken not to get them too thick on account of their heavy vine growth.

ARTESIAN WELL IMPERIAL VALLEY.

[Written for Pacific Rural Press.] An artesian well of the purest and best water in Imperial Valley is located on Joseph Mondry's place.

It has sufficient flow to furnish ample water for house and stock use. Water emerges from this well at 102 degrees, and when seen on a cold morning the atmosphere for a radius of fifty yards was covered with steam. The well is over six hundred feet deep and cost \$800.

Sugar beet seed must be produced in U. S. according to U. S. Dept. Agr. Several sugar factories were idle last year because of insufficient supply. More than \$100,000,000 are now invested in U. S. beet sugar production, yet at the beginning of the war, we got practically all of our seed supply from Europe.

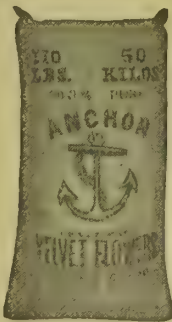
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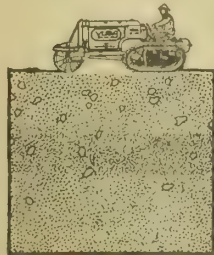
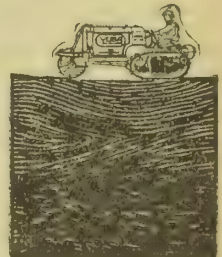
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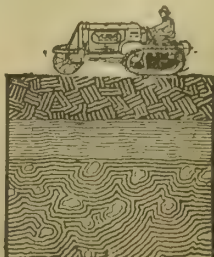
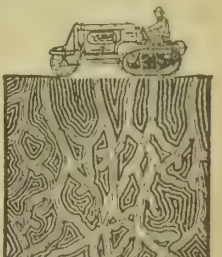


Sand?

Admittedly a hard soil for any tractor. Frankly the upkeep of the tractor will be somewhat greater. But, and this may surprise you, the Yuba Ball Tread wears very little faster under these conditions. The reason? Less bearing surfaces to grind away and better steels to stand the wear.

The Yuba is a favorite for breaking tule land. The high clearance of the Yuba disc plow keeps it from clogging up. The Model 20-35 and plow form a "one man outfit."

Tule?



Loam?

First on the field and last to leave, the Yuba, with its light weight and generous traction area can go on the ground pretty much where you wish. Nor will it pack the soil.

In any soil the Yuba outfit—a Yuba tractor and a Yuba plow—have points of distinct advantage. Write us your conditions and let us tell you something of what you may expect the Yuba to do for you.

Yuba Manufacturing Company
(Formerly The Yuba Construction Company—change in name only)
433 California Street, San Francisco

Factories at Marysville and Benicia, California

Yuba Manufacturing Company Dept. A-5
433 California St., San Francisco, California
Gentlemen: Kindly send me catalog and prices on the Yuba Ball Tread Tractor.

I am interested in Model 12-20 _____ Model 20-35 _____

Name _____

Town _____ State _____

P. O. Box _____ Size of farm _____

(Check main crop raised) _____

_____ Fruit _____ Rice _____ Grain

_____ Grapes _____ Hops _____ Alfalfa

and there have just been issued new Pump and Plow Catalogs which we will be glad to send prospective buyers.

How the Storms Got the Prophets.

L. E. Blochman of Berkeley tells how the storms called a turn on the dry-year croakers.

With years of weather observation, distant forecasting seems as hazardous as ever. For seasons may suddenly and unexpectedly change phases completely in the midst of either a very persistent dry or a very wet phase. There was absolutely no sign of rain up to the 15th of this month, and the storm centers had been so far to the north when it did rain that it was acting like the dry or half-dry seasons, so that only scant precipitations could be expected. From early in February till the middle of the month the whole coast was under high (and therefore dry) barometric pressure as far north as Sitka, Alaska.

A Storm Which Passed.—Suddenly the next day a storm area of unusually low pressure appeared in Canada, east of the Rockies, as it does quite often in summer. The weather bureau made only a casual remark about it. None of us realized what it yet meant.

This storm area had come from the Aleutian Islands vicinity, the low-pressure area; but unable to follow down the coast on account of persistent high-barometer conditions, it was forced east of the Rockies and followed southerly to the United States lines. The unusual then happened, it broke in two, part of the storm followed its usual easterly direction, while another part moved in an unusual southwesterly direction, diffusing itself and breaking up the persistent high barometer area be-

tween the Rockies and the Pacific Ocean. A very light rain occurred from its influence in California and Nevada on the 16th, 17th and 18th.

A Storm Which Held On.—But this storm or cyclonic area was caught between the Rockies and Sierras and remained stationary for three days. As a result a storm in the Pacific, which probably had been hanging around some distance west of the coast, was enabled to enter off the Washington-Oregon coast on the morning of the 19th. This last storm or a continuation of it has been hovering over us, giving all parts of the State copious rains. Places which had been very dry previously, received one-third of their total seasonal rainfall from this storm. The storm centered so far south that it came in as a warm rain, a decided change compared with all the previous cold rains.

What Has Come of It.—This rain-storm has been the most beneficial in years in redeeming the season agriculturally and in every other way. Our rivers, creeks and water run-offs had previously been at a very low ebb. Smaller rains sink into the ground; it takes a large rain to give good run-offs for reservoirs.

Vegetables as well as grass and grain had been suffering from the persistent long cold spell as much as from drouth, and these warm, copious rains have in less than a week changed the entire situation, and the country feels more hopeful.

Regulating the Yellowhammer.

To the Editor: Please tell me how to get rid of woodpeckers. They make hole after hole on the walls of our house. Do not wish to have a gun around on account of my children. Is there not some way to

poison them? Kindly answer through the columns of your paper.—A. W., Kingsburg.

[Answered by H. C. Bryant, Fish and Game Commission.]

Judging from your letter, the red-shafted flicker (usually called yellow-hammer) must be the bird which has been bothering you. This member of the woodpecker family is often guilty of drilling nesting holes in buildings. When an individual bird makes trouble resort should be had to the gun. Poison is always dangerous, and besides it would be difficult to find a bait attractive to these birds, for they feed almost entirely on insects. Some people have successfully frightened birds away by hanging pieces of bright tin by strings or by covering the places where they are at work with pieces of tin.

The red-shafted flicker feeds very largely on ants, and in so doing does no great amount of good or no great harm. On the other hand, the bird feeds to some extent on wood-boring insects and this is to the farmer's interest. Consequently we must consider this bird as a valuable ally and must not condemn all flickers in general because one or two give trouble about dwellings. It is justifiable to destroy an individual bird of this species, which is giving trouble, but planted on the high, red adobe land it is not justifiable to take protection from so valuable a bird by the legislative method suggested by Senator Stuckenbruck. Berkeley.

**He'll Make
You Poor —
KILL
HIM**

What is the use of preparing a good seed bed and planting seed that cost good money if you let squirrels and gophers eat your profits. These pests are a constant danger to crops and a constant menace to the family's health.

**Carbon
Bisulphide**

has for over 30 years proven to be the most effective—the only sure killer of squirrels, gophers, rats, prairie dogs, ants, moles, yellow jackets, moths, weevils, lice, etc. It is easy and safe to use.

Write today for interesting folder and learn how this profit saver works.

Wheeler, Reynolds & Stauffer
624 California St.
San Francisco California

790 Bushels of Potatoes

**PER ACRE, THE LARGEST CROP
ON RECORD IN THE U. S.**

Were grown in California and awarded Grand Prize by International Jury, P. P. I. E. Not only was this the largest crop, but the quality was especially fine, bringing a price considerably above the market. The grower attributed a good part of his success to the use of

Gold Bear Fertilizer

The average crop of California is about 150 bushels. What do you get?

W. V. Shear, Potato Expert, says: "Don't try to save money by adopting cheap methods to cut from cost of production. Is it not good business practice to spend enough money to produce a good crop and make money on the investment rather than use cheap methods and lose money?"

Fertilizing is not an expense, but an investment, yielding immediate returns.

Let us help you solve the problem of bigger and better crops.

Address

Fertilizer Department.



WESTERN MEAT COMPANY

San Francisco, California



"The Old Lines"

EVERYBODY speaks of them as "the old lines," many perhaps without realizing how thoroughly new and up to date are all these **Champion, Deering, McCormick, Milwaukee, Osborne and Plano** mowers, rakes and tedders. What really good improvement was ever made in haying machines that did not show itself first on one of these machines? Where can you find mowers, rakes, or tedders that need so little adjustment, so few repairs, or that are so easy to repair when they do need it? Nowhere. These old standard machines, known to farmers for three quarters of a century, can still be depended upon to get in all the hay from any field and to make the work light for the farmer.

When you need a mower, rake, or tedder, see the local dealers who handle the **International Harvester** lines. We can remind you here that our machines have always done good work, but the dealer can show you why they still do it. You will find that the local dealer has just the size and style you need. Buy from him.

International Harvester Company of America
(Incorporated)



Crawford, Neb. Denver, Colo. Helena, Mont. Los Angeles, Cal.
Portland, Ore. San Francisco, Cal. Spokane, Wash. Salt Lake City, Utah



Strathmore orchardists are expecting irrigation district ditch water by the last of June.

California gets \$302,127 of the National rural post roads appropriation.

PLENTY OF FINE WATER IN IMPERIAL VALLEY.

[Written for Pacific Rural Press.]

The stranger in Imperial Valley very often drinks something different, though not stronger than water. But Imperial Valley has some of the best water in the world, as it was a pleasure to find on the ranch of R. W. Campbell. The cost of getting this fine water was so insignificant, and it was so freely used all over the house and yards, that he can tell how he did it.

Water from the irrigation canal is let into a pool through a pipe. After it settles a day, a faucet allows it to run into a concrete box 2½ feet wide, three deep, and 14 feet long, set flatwise with its top level with the ground. This box has three compartments, the partitions leaving a two-inch opening across the box for water to pass. In the first compartment is coarse gravel; in the next, about 50 pounds of charcoal; in the last is finer gravel mixed with sand.

From the last section, the water runs into a cistern about 10 feet in diameter and 12 or 14 feet deep. The cistern is of cement bricks made for the purpose; and the inside surface is plastered with rich cement.

Thence the water is pumped into a galvanized iron tank about 20 feet high, protected by a wooden roof-shade. This provides fire protection and pure running water for sanitary and kitchen purposes as well as for stock, etc.

PUTS SEED POTATO INTELLIGENTLY.

[Written for Pacific Rural Press.]

When you start cutting seed potatoes, cut one lengthwise through the center and cut a thin slice from one of the flat surfaces. Hold that slice up to the light and notice how the "roots" of the eyes run to the center line at an angle toward the stem end, says M. A. Bryte of San Mateo county.

To get thriftiest plants, hold the potato with the seed end in the palm of the left hand and cut from above the eye toward the stem end to avoid severing those "roots." The eyes will grow without them if conditions favor, but since the young plant depends absolutely on the piece of seed potato for its food until green leaves are made, it stands to reason that it will make better growth if its connections with the reserve food are not cut.

One eye per hill, if cut this way, is reasonably sure to give a good stand if the ground is warm when planted. Two eyes per piece are a waste of high-priced seed.

PREFERS MILO ROLLED.

[Written for Pacific Rural Press.]

"I never want to feed milo in the feed again," says W. W. Cochran of Imperial county. "It is thrown around into the mud or tramped on when you feed it to the horses and dogs. Some of the grain comes through whole, too. Look at those heads in the hog pen. They will never be eaten unless we starve the hogs to it; and we can't afford to do that. I want to feed it rolled or ground, preferably steam-rolled and mixed with skim milk for the hogs."

JOHN DEERE IMPLEMENTS



BOOK FREE 156 page reference book—tells all about a complete line of farm implements and how to adjust and use many of them. A practical encyclopedia of farm implements. Worth dollars.

Describes and illustrates Plows for Tractors; Walking and Riding Plows; Disc Plows; Cultivators; Spring Tooth and Spike Tooth Harrows; Disc Harrows; Alfalfa and Beet Tools; Farm and Mountain

Wagons; Manure Spreaders; Inside Cup and Portable Grain Elevators; Corn Shellers; Hay Loaders; Stackers; Rakes; Mowers and Side Delivery Rakes; Hay Presses; Kaffir Headers; Grain Drills; Seeders; Grain and Corn Binders.

This book will be sent free to everyone stating what implements he is interested in and asking for Package No. X-12.

JOHN DEERE, MOLINE, ILL.

Van Brunt Grain Drills



Van Brunt Drills plant any small seed.

Amount sown per acre easily regulated.

Direct, double, gear drive from the continuous axle.

High-grade discs with bearings guaranteed to last lifetime of drill. Scrapers keep discs clean.

Pressure springs individually adjustable to make uniform depth furrows.

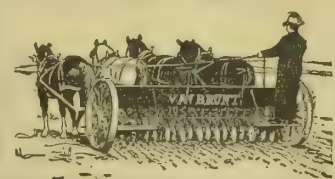
Either single or double discs.

Grass seeder attachment which will drill or sow broadcast can be furnished.

Van Brunt Drills are particularly noted for their adjustable gate force feed. Each feed cup plants exactly the same amount. The seed is compelled to leave the seed box in even, continuous streams without bunching or choking up. All the ground is seeded.

The Van Brunt Single Disc is the first successful single disc grain drill with closed delivery. The seed is protected by metal seed tubes, disc openers and the disc boots until it reaches the bottom of the furrow.

Van Brunt Drills are particularly noted for their adjustable gate force feed. Each feed cup plants exactly the same amount. The seed is compelled to leave the seed box in even, continuous streams without bunching or choking up. All the ground is seeded.



The John Deere-Dain System Rake

Here is what you do with the Dain System Rake:

Follow the mower closely, rake while leaves are still active and place hay upon clean stubble.

Make straight windrows, and no dumping of rake is required. There is no bunching of hay in turning corners.

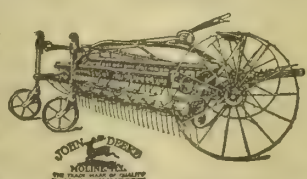
Put the hay in medium size windrows, with the bulk of the leaves inside and the majority of stems outside.

The windrows will be loose in the center for the free circulation of air. The hay retains its color and nutrition.

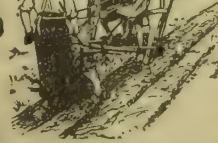
The John Deere-Dain System is the rake employed with the Dain System of Air-Curing Hay.

Reel raised or lowered, rake thrown in or out of gear and angle of teeth changed by means of convenient levers.

Ample capacity. The inclined frame grows higher where the windrow becomes larger—an exclusive Dain feature.



John Deere Syracuse Plows



Syracuse Plows have an enviable field record among farmers in chilled or combination plow territory.

Here is a feature that is appreciated by the man who buys a Syracuse Plow. Extras ordered will be duplicates of the original parts. Bolt holes will be in the right place. Every part will fit. In fact all necessary parts that go into a Syracuse Plow could be ordered as repairs and when received built into a complete plow. Extra parts are exact duplicates—no trouble results.

Remember, Syracuse quality is uniform.

John Deere-Syracuse Sloping Land-side Chilled Plows are unsurpassed for general purpose work in light soils. They leave a clean, open furrow bottom.

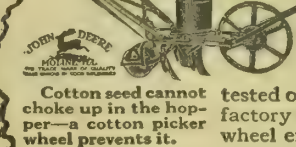
Share and shin piece combined—a fresh, clean cutting edge obtained with each new share.

Index or set-over style of beam—easily shifted to give the plow more or less land.

Equipped with Syracuse Chilled Moldboards—noted for satisfactory scouring qualities, strength and uniformity. Right and left hand styles.



John Deere Combined Cotton and Corn Planters



Cotton seed cannot choke up in the hopper—a cotton picker wheel prevents it.

John Deere OBLIQUE SELECTION, HORIZONTAL CELL DELIVERY SEED PLATE for corn—an accurate drop.

Positive gear drive with dirt-proof gear case.

Special shaped shovel with reversible points opens furrow and pulverizes the soil without throwing it up on the face of the shovel. Soil falls behind and covers the seed.

Adjustable press wheel can be furnished. No lever used on this press wheel.

Depth of planting can be regulated with the foot while planter is in motion.

tested out through years of satisfactory field use. A cotton picker wheel extends through the bottom of the hopper. This wheel revolves in one direction and the cotton spider in the other—separating the seed without damaging it. Change in quantity is made by turning a thumb nut on the hopper.

Hoppers are beaded. Seed plates fit perfectly. All the seed in the hopper is planted. Peanut plates or a special hopper can be furnished for planting shelled or unshelled peanuts.



John Deere Harvesting Machinery

John Deere harvesting machines have worked under every possible condition—severe droughts that resulted in much light grain, short and irregular straw—extremely wet seasons, heavy grain, down and tangled.

However, the John Deere, "The Better Binder", has throughout maintained an unbroken record of success in cutting, binding and tying grain.

The John Deere Grain Binder has wide and high bull wheel—great power. Main frame riveted—unusually strong.

Three packers instead of two, make better shaped bundles and save grain.

Accurate tying mechanism.

Quick turn tongue truck saves time, relieves horses and makes square corners and full swaths possible.

John Deere harvesting machines have worked under every possible condition—severe droughts that resulted in much light grain, short and irregular straw—extremely wet seasons, heavy grain, down and tangled.

However, the John Deere, "The Better Binder", has throughout maintained an unbroken record of success in cutting, binding and tying grain.



Your Home Town Dealer

There is a big advantage in buying implements of your home-town dealer.

He gladly "backs up" the implements he sells, and he is on the ground to see that they make good. He makes his home in your locality—the place his goods are sold.

He handles a line of high-grade implements—and you can see before you buy. In the busy season, when work is pressing, he can furnish repairs promptly for the goods he sells.

If, by chance, he has not in stock just exactly the style of implement you want, he can give you quick service in getting it to you.

John Deere factory warehouses with immense storage rooms have been established in various sections of the country. Every John Deere dealer is conveniently located to one of these houses.

This, really, gives you two supplies of implements—the stock carried by your home-town dealer and that of the factory warehouse.

General Agricultural Review.

GRAINS AND FIELD CROPS.

Alameda county wheat fields are being hurt by Hessian fly.

A two-pound potato sold in Stockton recently for 10 cents.

Imperial Valley alfalfa is now \$22 per ton baled at the ranch.

Barley and alfalfa in Imperial county are looking very good.

Threshed milo was bringing Calexico producers \$40 per ton Feb. 24.

Merced county has an unusually large acreage in grain this year.

Co-operative packing and hauling of cantaloupes is proposed in the Turlock district.

Tomatoes for the Tulare cannery are a prospective crop if enough

acreage is signed up.

G. H. Peters of Kern county is said to be harvesting at this time a potato crop worth \$37,000.

Lower California tomatoes, sweet potatoes, and vegetables are being shipped by boat to San Diego.

Minnesota buyers offered \$80 per ton for Washington State potatoes recently, but couldn't get them.

Yuba county hops are being taken out and the land put into food crops such as potatoes and beans.

Wisconsin cabbage growers are treating their seed with formalin to prevent black rot and blackleg.

A Stanislaus bean grower is reported to have received \$10 per sack for 170 sacks of Lady Washingtons.

All surplus wheat and oat hay in the Tulare country were sold early in the season, and alfalfa hay also is scarce.

Lettuce is bringing Imperial Valley producers \$3.50 per crate, potatoes 3½ cents, and cabbage \$1.50 per crate.

Imperial Valley head lettuce is being introduced into markets dominated by Florida lettuce previous to this winter's freeze.

Short weight baled hay is doomed if a bill favored by State Sealer of Weights and Measures C. G. Johnson becomes a law.

Red Italian onions are being planted on the red dirt soil of Butte county, where they did well on a small scale last year.

Thirty per cent of alfalfa being sowed locally is of the Peruvian varieties, according to our correspondent at Calexico.

Riverside's decomposed granite soil is ideal for early potato growing according to E. H. Grubb, the potato specialist.

Formalin seed treatment of oats is recommended by the Ohio Experiment Station to prevent loose or head smut.

The stock of red onion sets is reported all sold, but there are a good many yellow onion sets left in the Stockton houses.

Though there are some discontented melon growers in the Turlock district, prospects are for a large increase in acreage this year.

The Rice Land and Products Co. of Colusa county are increasing their rice acreage by 1000 acres and installing new pumping plants.

Delta asparagus shipments commenced about Feb. 20, but big shipments are later than usual on account of the dry cold winter.

A special course in grain sampling is offered at the Oregon Agricultural College to help familiarize farmers with the new federal grain standards.

Fourteen varieties of beans are used in making the 14 letters of the Knights Landing sign at the Yolo County Board of Trade rooms.

Hairy Peruvian alfalfa when seen February 17 by our representative on the I. J. Harris ranch near Imperial stood no less than fifteen inches high.

To kill bean weevils, the Mo. College of Agriculture recommends an ounce of carbon bisulphid per 75 pounds to be placed in a tight receptacle with the beans and above them in a saucer.

Minnesota and Wisconsin potato growers are asking reduced freight rates to Texas, but the California Wholesale Potato Dealers Ass'n is opposing it.

The Pima strain of Egyptian cotton developed in Arizona was planted on 275 acres last year and will be tried out in Imperial Valley, California, this year.

"The 16,000 acres of beans and 22,000 acres of sugar beets in Monterey county will bring several millions of dollars besides the grain, po-

Sudan Grass

CALIFLORA BRAND

This is one of the best-known forage crops used in the Southern and Middle Western States. It grows from 5 to 10 feet high and will produce four crops of hay under irrigation and usually two crops without irrigation. It thrives in the valley and foothill sections of California. It yields more to the acre than any forage crop we know of, and the quality of the hay is excellent. The stock of this seed is short and we anticipate higher prices in the near future.

BUY NOW—lb. 50c; 10 lbs. \$4.00; 100 lbs. \$35.00.

Alfalfa Seed

CALIFLORA BRAND

This is our best grade of common Chilean alfalfa seed. On every test this brand of Alfalfa Seed has surpassed all others. We do not believe its equal can be had elsewhere. When buying this grade you are not paying for any weeds or chaff. It is the cheapest to plant because it is the best. Send for price and sample.

We also offer superior stocks of GRIMM, HAIRY and SMOOTH PERUVIAN and TURKESTAN Alfalfa Seed.

SEED POTATOES

Splendid stock of OREGON GROWN American Wonder, Early Rose and Garnet Chili Seed Potatoes. These are all good early varieties. Write for prices and quantities desired.

1917 SEED CATALOG—IT IS FREE—SEND FOR IT. TELLS HOW, WHEN and WHAT TO PLANT.

We Pay the Freight

Valley Seed Co.

506-508 J Street,

Sacramento, Cal.

Olive Seedlings for Budding

We offer for immediate or later delivery, 100,000 Picholine Olive Seedlings Nursery Grown from seed, one year old, and excellent stock for lining out for budding. Planters will soon demand Budded Olives and not trees grown from cuttings. We are able to supply all demands for these seedlings at reasonable prices, and will be pleased to mail samples. Also have surplus in Almond, Plum, and Mission Olives.

THE MCGHEE WHOLESALE NURSERIES

Loomis, Placer Co., Cal.

The Cunningham Land Roller and Pulverizer



Makes a Perfect Seed Bed—Stops Evaporation—Preserves Moisture—The Best Clod Crusher ever made for Farmer, Orchardist, Vineyardist, Nurseryman and Seedsman.

Made in All Sizes Write for Circular Manufactured and Sold Exclusively by

Spalding-Robbins Disc Plow Co. 625 Market St. SAN FRANCISCO.

BUD SELECTION THIRTY TREE "Safety First"

Our buds for our Citrus Stock were selected from Pollard's Twenty-Five Year Orchard, which are as prolific and true to type a grove as found in California. We guarantee all trees to be true to name and absolutely untouched by frost.

POLLARD & MARTIN

NORTH WHITTIER HEIGHTS CITRUS NURSERIES, CALIFORNIA.

VAN NUY'S NURSERY CO.

Growers of Reliable Nursery Stock.

6000 TILTON APRICOTS, Best Stock, 4 to 6 ft. Well Rooted. Make us an Offer.

Van Nuys,

California

tatoes, dairying, and livestock," says the Salinas Journal, which gives credit to the First National Bank for the statistics.

A 24-mile railroad from Corcoran is to tap the Tulare Lake sugar beet fields this season. The Corcoran factory with latest types of machinery is to run this season.

Last year's tomato output of the Healdsburg Canning Co. was 16,000 cases. This year's crop is expected

Strawberry Plant

Improved Magoon Strain from Famous Santa Cruz District. Yield over \$200 per acre more than other plants the first year. Limited quantity only of surplus planting at \$6.50 per M; 75 cents per hundred.

C. C. KENNEDY, Capitola, C.

Kills Prairie Dogs, Gr. Squirrels, G. Hogs, Foxes, Rabbits, Skunks, etc. Gopher, saves alfalfa. 1400 tablets, P. P. H. V. ranted. Mole Tablets. Ask Druggist or send for Booklet Free. Ft. Dodge Chem. Co., Ft. Dodge

1842 The Seventy-Fifth Anniversary of 1917



LIGHT DRAFT PLOWS

Built for the Field Test.

Three-Quarters of a Century of "Knowing How" Hammered Into Every One of Them.

The product of the Parlin & Orendorff Co. has always been noted for simplicity of construction, great strength and ease of operation. It was upon such a basis that the founders of this business made their implements, established their reputation, and built their factory. It is upon the same foundation that the business has been carried on to this day, and in 1917 we celebrate our Diamond Jubilee; 75 years of practical experience gained through constantly striving to provide for the exacting requirements of three generations of American farmers.

For an even three-quarters of a century we have met the demand, and today we operate the largest and oldest permanently established plow factory in the whole world. "It's the way we build them."



Light Draft Plows, Harrows, Planters and Cultivators are made in all types and sizes, to meet the conditions in all sections, and are Backed by an Unqualified Guarantee.

We also make the most complete line of Tractor Engine Plows produced, and we have a special catalog devoted to these famous plows.

The P&O Little Genius Engine Gang Plow

was the most popular plow shown at all points on the 1916 National Tractor Demonstration.

We will send P & O Catalogs to any address. While P & O Implements are sold only through established implement dealers, we welcome correspondence from farmers in all sections.

Ask Your Dealer or Write Us.

Parlin & Orendorff Company
Canton, Illinois

Kansas City Dallas Minneapolis
Omaha Portland (Ore.) St. Louis
Sioux Falls Spokane Denver Oklahoma City
Utah Implement-Vehicle Co., Salt Lake City
Baker & Hamilton, San Francisco
Dixon & Griswold, Los Angeles

GENERAL AGENTS FOR
P & O MACHINERY

Dixon & Griswold

146-48 N. Los Angeles St.,
LOS ANGELES, CALIFORNIA

FRUIT TREESTOCKS

APPLE SEEDLINGS—
Am. Grown and Imported.
CHERRY SEEDLINGS—
Malheur and Mazzard.
MYROBOLAN
PEACH SEEDLINGS—
PEAR SEEDLINGS—
French (Am. Brown & Imported)
Japan and Kieffer

QUINCE STOCKS
ROSE STOCKS—Canina and Multiflora.
GRAFTS—Apple and Pear, Any Style.
GENERAL ASSORTMENT OF NURSERY STOCK

We have some Japan and Kieffer Pear Seedlings at San Jose, Cal., which we are offering at special prices.

Send us your list for prices. We will have several more cars to California.

SHENANDOAH NURSERIES.

D. S. LAKE, Pres.
Shenandoah, Iowa.

Old Style Grafting

Ruins Trees.
Destroys Crops.
Grafts often broken
by wind.
Limbs split and decay.



Our Method of Side Grafting



Remedies
all this.
Saves wax.
Saves labor.
Grafts grow
better and
mature
sooner than
by any other
method.
It will work
over your
Grapes and
Citrus
Fruits, with
practically
perfect results.

Full information sent free.
W.S. TUTTLE & CO.
262 Cap. Nat'l Bank Bldg.
Sacramento, Cal.

Kill Squirrels Kill Gophers

The only exterminator that
is 100% efficient and guaran-
tees results or money back is

KILMOL
SQUIRLEGOPHENE

Used and endorsed by biggest
and most successful ranch
owners. Prepared waste
balls saturated with
KILMOL give best results.

New formula of U. S. Gov't
Poisoned Barley is effective
in dry weather.

Your dealer carries Kilmol, U. S. Govt.
Poisoned Barley and Waste Balls.

WASTE BALLS \$6.00 PER THOUSAND
Cheaper than you can make them

Herbert F. Dugan
1170 Sutter St. San Francisco

Nitrate of Soda

California soils need
available nitrogen.
Get it as cheap as
you can. Write us for
"Cost of Available
Nitrogen."

DR. WM. S. MYERS

Chilean Nitrate Propaganda

25 Madison Avenue, New York

RHUBARB

**PLANT WAGNER'S
IMPROVED NOW**

Yields \$1,000 per acre
annually. Splendid re-
sults in six months.
Special price for im-
mediate planting (also
Cactus, Berries, Small
Fruit, etc.). Write

J.B. WAGNER
Rhubarb-Berry & Cactus Specialist
PASADENA, CALIFORNIA

to fill 40,000 cases, of which 15,000
had been sold before Feb. 24.

About 14,400 acres belonging to
the Superior California Farm Lands
Co. of Glenn county has been leased
for rice and the ditches will be im-
proved. This is 5000 more than last
year.

The San Benito river rose less in
proportion during the recent storm,
than Pacheco creek, according to the
San Jose Mercury Herald, due prob-
ably to the large acreage of grain
up the former river.

Provision has been made by the
the State Commission of Horticulture
for the shipment of Egyptian cotton
seed to California from Maricopa
county, Arizona, which has hereto-
fore been quarantined on account of
boll weevil.

GRAPES, FIGS, OLIVES.

The Stanislaus County Fig Grow-
ers' Ass'n was organized a few weeks
ago.

Fresno vineyard pruners have or-
ganized and are demanding \$2.50 per
8-hour day.

A shipment of 11,000 olive trees
was recently made to Butte county
from Orange county.

A. L. Gillespie is planting 5000
Thompson and 2000 Malaga cuttings
and 1,000 fig trees near Imperial.

Fifteen hundred Mission fig trees
are to be planted on the P. N. Ashley
ranch near Madison, Yolo county.

A meeting of fig growers in Fresno
Mar. 1 discussed: A standard mini-
mum price for the different varieties
of figs to all growers each season;
the selling of any unsold 1917 figs;
the planting of a Capri fig orchard
in a thermal belt of the San Joaquin
Valley as suggested by Henry Mar-
karian of Fresno, to be maintained
by the organization for caprification
and a dependable source of supply
at a minimum cost; a better or stan-
dard, uniform pack of figs along the
lines that the Peach and Raisin or-
ganizations are operating.

DECIDUOUS FRUITS AND NUTS.

The Manteca cannery is to have a
\$15,000 addition this season.

The Earl Fruit Co. is contracting
Placer county peaches at \$32.50 per
ton for Phillips and Tuscans.

A bill has been introduced in Con-
gress prohibiting the storage of
apples for more than 90 days.

A newly planted apricot orchard
of 12,000 trees is that of Messrs.
Hutchings in San Miguel canyon,
Monterey county.

Over 12,000,000 pounds of cher-
ries were exported from Naples,
Italy, to U. S. in 1916 as against
4,720,392 pounds in 1915.

Walnuts, shelled and unshelled,
shipped from Bordeaux, France, to
U. S. totaled 10,759,738 pounds in
1916 or over 3,000,000 pounds less
than in 1915.

Almond exports from Naples,
Italy, to U. S. in 1916 were 3,053,-
934 pounds while in 1915 they were
only 240,053 pounds. Walnuts from
the same port decreased from 8,080,-
482 to 1,616,622 pounds.

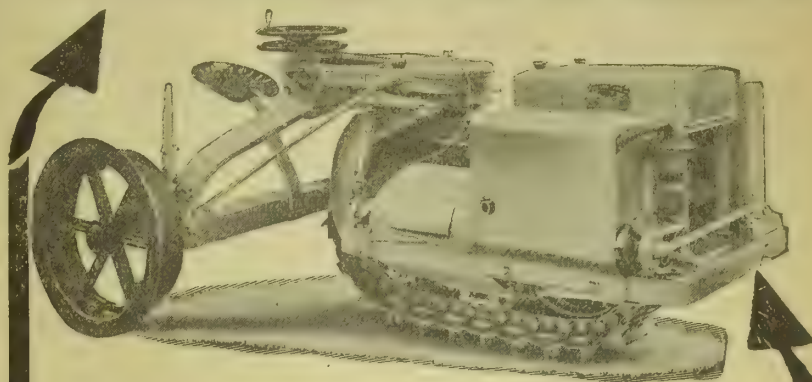
Canning peaches in the Loomis
district of Placer county have been
contracted recently for 10 years
ahead to Libby, McNeil and Libby
at \$25 per ton for Levis and \$27.50
for Phillips, all to be over 2 3/4 inches
in diameter.

NATIONAL ORANGE SHOW.

The Seventh National Orange Show
held at San Bernardino Feb. 20 to
28 met full success. Despite the bad
weather the exhibits were never
fuller and better than this year.
Oranges and lemons in their great-
est perfection and largest numbers
were seen this year. The features
and individual exhibits were of a
character never before surpassed. It
features the orange and lemon in-
dustry of California in a wonderful
manner. On several days the at-
tendance is said to have reached
20,000 to 25,000. Not alone was
the display of golden fruit such as
to draw forth admiration and won-
derment, but the industrial exhibits

were most interesting. All kinds of
farm and orchard machinery were on
hand, showing the advance that has
been made in the agricultural imple-
ment world in recent years. There
were tractors, sprayers, pruners,
cultivators, weeders, mulchers and
many other devices, making the ma-

chinery and farm exhibit one of the
most interesting of the show. Citrus
by-products were a strong feature.
Lindsay again won first prize for the
best feature display. Riverside
showed a box of oranges from one of
the two original Washington Navel
trees.



The Little King of Tractors

The Bean TrackPULL Six-horse Tractor combines giant strength
with light weight and long traction. Just think of a tractor so small
that it goes under the boughs of trees only 4 feet off the ground!
Gets into corners where a team could never go, and works right up
close to the trees and between anything that grows in rows only 7
feet apart.

That's what the Bean TrackPULL does. It will do your plowing,
your cultivating, and your disking, and then run stationary machin-
ery when it is not working in the field.

It actually does the work of 6 horses on what it would cost you
to feed one team, and you can work it 24 hours a day if you want to.



Pulling Three 10-inch Bottoms.

The Bean TrackPULL is ideal for
soft soil and cultivating. It weighs
only 2800 lbs. and pulls itself over
the ground. This is a big advan-
tage over a tractor with rear drive.
It does not get stuck in soft places.
You simply turn right or left, like
a team, and keep going. The Bean
lays its own track on which it pulls.
The wide track offers the least re-
sistance which means that the Bean
is most economical to operate. The
Bean TrackPULL costs only \$975.00
and is the only track-laying tractor
selling for under \$1800.



The Ideal Tractor for
Orchard and Open Field Work.

Best Construction Lasts Longest

The Bean TrackPULL Six-
Horse Tractor is built in one
size only—6 H. P. at drawbar
and 10 H. P. at belt.

The motor is a Le Roi 4-cylin-
der vertical type—4-cycle—
equipped with: Donaldson air
clarifier, Bosch ignition, Perfex-
radiator—water cooled with cen-
trifugal pump and fan, combina-
tion pump, and splash lubricating
system.

Famous Hyatt roller bearings
used in track wheel and sprocket
also in track rollers. There are
six New Departure ball bearings
in the transmission, running in
grease and all dust proof. Gears
are steel. No differential or other
complicated mechanism.

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We are behind on orders and are
working night and day. We are build-
ing a large addition to our plant to in-
crease our capacity and will be able
to make prompt shipment in April.
You know the Bean Sprayer! The
Bean TrackPULL Tractor is as good as
the Bean Sprayer.

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Please send me prices and the big
folder with the complete story of
the Bean TrackPULL. If I decide
to purchase I will need my tractor
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I work _____ acres.
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(Name fruits or vegetables you
product.)

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San Jose, Cal.

Mechanical Power on the Farm.

Users of tractors, engines, pumping plants, motor trucks, automobiles, electric motors, and other mechanical farm power are invited to make this department an exchange of their experiences and troubles.

ORCHARD TRACTORS PREVENT SOIL BAKING BY EARLY DISKING.

[Written for Pacific Rural Press.]

It is so urgent to get the orchard soil disked before it hardens in part of the Tulare citrus district, that the Gillette Ranch has recently bought two new tractors in addition to two already in operation in their 280 acres of citrus and olive trees. The whole ranch was sowed last fall to mixed vetch and melilotus, which did not grow so well as usual on account of the long-continued cold of the past winter. One piece grown up to weeds was being disked in mid-February. The soil was turning up beautifully mellow, but such a condition would not continue long without rain or irrigation. An 18-horse-pull tractor was drawing a double disk of 24 plates loaded with about 650 pounds of iron. A 32-plate double disk with 500 to 1200 pounds weight is ordinarily used with this machine, which would reduce the number of trips per row from three to two. This tractor was run night and day in the orchard last year and two-thirds of the nighttime the year before that, according to ranch foreman C. H. White. Cutaway disks weighted down are preferred on account of the cover crop and weeds; and one built especially for tractors has been bought recently.

"At this time of year we can put the ground in as good shape with disks as we can with plows two months later," says Mr. White. That is why tractors are being used to rush the work. Deep cultivation and furrowing will be done later with tractors, for part of the 14 mules and horses now on the ranch will be sold. Some will be kept, however, for there is always work that horses can do cheaper than tractors. An example is the checking for cross irrigation within the rows which is practiced here. The present tractors are not considered suitable for hauling on the road either, though Supt. King G. Gillette of the ranch has assembled a very fast-traveling machine, with which 10 acres have been furrowed in 1½ hours.

Conglomerate Tractor.—A Hudson automobile engine and a Butck transmission have been put onto an old Samson tractor along with some Ford parts. The speed at which it runs is too great for the strength of some of the parts according to Mr. White, and in hot weather some extra cooling device would have to be added. But tractor work done at four miles per hour is as good, says he, as at slower speeds.

AUTO TRUCK FOR MILK, FREIGHT AND PASSENGERS.

[Written for Pacific Rural Press.]

A 2½-ton auto-truck is providing a market for milk in San Pasqual Valley, San Diego county, and is encouraging greater production of alfalfa, apricots, chickens, and veal to sell to San Diego. Before the flood, there was a lot of alfalfa land in the valley, but the nearest railroad is at Escondido, over at least

four miles of hills besides the valley haul. Another outlet is 37 miles to San Diego by road. So no one could raise more alfalfa than he could feed or sell to his neighbors. E. H. Webb had nearly 300 acres of alfalfa then; and he couldn't feed it all. Four years ago he bought the truck. Two years ago he began to haul milk daily to San Diego. Now their truck is the transportation facilities for the valley.

Mr. Webb milks an average of 60 cows throughout the year and gets about an average of 120 gallons of milk per day. Many of his cows are heifers and not milking so heavily as they will later. Between the Webb place and San Diego some 40 to 50 ten-gallon cans of milk are added to the dozen from his own cows. People in the Valley above him deliver their freight at his house before 7 a. m. daily. Some poultry, veal, fruit, and an average of nearly two passengers per day are carried. On the return trip, supplies are hauled for patrons along the route. This year, because his silos washed away in the flood, Mr. Webb has been feeding beet pulp to balance the alfalfa. He has a barn stacked up with it, having hauled it out from San Diego. It is so much more convenient to patrons along the route than hauling produce to and from Escondido over the hills, that another truck may be put on not long in the future.

"The truck pays its expenses and its original cost in a year," says Mr. Webb; "and then we have it left good for two or three more years. My son drives it and takes care of it. I think he uses about twelve gallons of distillate per round trip."

Though most of the roads are unpaved, he has never failed to get there with the milk. There was difficulty, however, due to smooth tires, last year. Now he has block tires, the double line of blocks alternating so they get a good hold on slippery roads.

It was thought at first that the milk could not be delivered so far and only once daily, in good condition. At first it was found sour a few times. The troubles were found and remedied, however, the principal feature being to cool the milk with water that had to be cooled without ice. But that is another story. The second year there has been no complaint and the creamery manager to whom the milk is delivered says it is among the best he receives.

TRACTOR GRINDS HOG FEED.

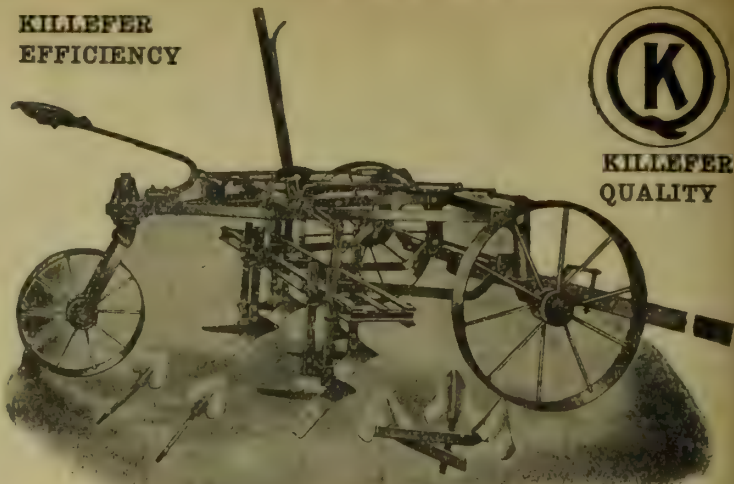
[Written for Pacific Rural Press.]

We found G. R. Cloes of the Cloverleaf Ranch in San Diego county grinding milo heads and Indian corn into a coarse meal for his fattening hogs, using the 30-13 h.p. tractor for power. The tractor had simply been run up the alley between hog pens, and set in neutral in line with the grinder. It was making 1½ tons of readily available yet somewhat bulky ground feed per hour, though Mr. Cloes said it would grind 3 tons of Indian corn alone per

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EFFICIENCY



KILLEFER
QUALITY



Beet Cultivator

The frame of this Cultivator is made of one continuous piece of high carbon steel with a truss connecting it to the main castings, supporting the two steering wheels. This construction makes a cultivator that is almost impossible to break down in the center and in consequence the wheels are always in line and under easy control.

The lower frame or tooth bar is from the same quality of steel with a strong arm at each end, which connects with the lifting rod, allowing no chance for the frame to dip or run deeper at the ends. The seat is set back far enough to give an unobstructed view of the rows. The foot control of the front wheels is adjustable with a turn-buckle for taking up wear, and is very easy on the operator. A lock is provided for the rear wheel that holds its rigidly in line except on the turns. This is the strongest and best made Beet Cultivator for sale on the Pacific Coast.

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ROBINSON HARDWARE CO.

Smooth Lock Seam Sleeve

Here is an exclusive Madewell feature that appeals to every user of Surface Pipe. Seamed inside with perfectly smooth surface. Much stronger than the old-fashioned lapped and riveted seam used by others.

Madewell Surface Pipe

is recognized in established surface pipe districts as having the strongest, smoothest, and most practical construction.

Our Long Lock Seam is the best seam possible to make—and in addition is carefully soldered the entire length so that it stays water-tight. Strength and Smooth Finish are the big things to consider when you invest in surface pipe.

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GARDEN TOOLS

Answer the farmer's big questions: How can I have a good garden with least expense? How can the wife have plenty of fresh vegetables for the home table with least labor?

IRON AGE Combined Hill and Drill Seeder
solves the garden labor problem. Takes the place of many tools—stored in small space. Sows, covers, cultivates, weeds, ridges, etc., better than old-time tools. A woman, boy or girl can push it and do a day's handwork in 30 minutes. 88 combinations, \$3.25 to \$15.00. Write for booklet.

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Dewey Strong & Townsend

PATENTS

911 Crocker Bldg., S. F.

Circular containing 100 mechanical movements mailed free.

hour. This feed is soaked about 12 hours before the hogs get it in two feeds per days. Three hours' work grinds enough for two or three days. Mr. Cloes has 350 head including sows and shoats, and is working principally into purebred Berkshires. Barley also is ground for some of them.

Other Uses.—A buzz saw had just been brought home to be run by the tractor to cut fire wood, and the 36-foot twin silos had also been filled by tractor power. Mr. Cloes said, that while he had some trouble in plowing side hills with this machine because the front wheels would slide down hill sometimes, he could plow 10 acres a day of good bottom land.

CANVAS HOSE FOR IRRIGATION.

To the Editor: I would like information regarding the strength of canvas hose, and the possibility of being able to use the same in connection with a pumping plant for irrigation purposes. I have a 7-inch pump with which I desire to raise water from the river, a total lift of about 15 feet to the top of a bluff and then force it through a canvas hose 1150 feet long. During that distance there would be a 9½-feet rise to the highest point on the land to be irrigated. Would the hose be strong enough to allow 1500 gallons of water to go through it per minute on a total rise of 9 feet to 10 feet through the 1150 feet of hose?

—C. G. K., San Francisco.

[Answered by Prof. S. H. Beckett, University Farm, Davis.]

A 7-inch centrifugal pump discharges in the neighborhood of 1200 gallons per minute. If this quantity of water is put through a 12-inch diameter canvas hose a friction head of at least 10 feet will be developed in a distance of 1150 feet. This must be added to the existing head of 9 to 10 feet mentioned in the inquiry, making a total of approximately 20 feet. This is a much greater head than the heaviest canvas hose will stand under continuous operation. Under the conditions I would advise the use of 10- or 12-inch diameter slip joint pipe.

SMALL PIPES INCREASE FRICTION.

[Written for Pacific Rural Press.]

Many people in installing pumping plants forever have to pay for extra power or put up with insufficient service because they use pipe of too small diameter.

One such is the little plant used for irrigating a few hillside acres for F. C. Perrigo in San Diego county. His well is in the river bottom and is 15 feet deep, being only five feet to water. A 1½ horsepower engine works a plunger pump with a cylinder 5x18 inches. About 230 feet of pipe carry the water to a 50-foot elevation, whence it is distributed to the house and gardens and five acres of melons by about 535 feet additional pipe. The pipe is 1¼ inches in diameter and the engine has all it can do to force the water through it. With a two-inch pipe, the friction of water in the pipe would be reduced to about ⅓ and the power reduced considerably or the flow increased.

AUTOMOBILE NOTES.

Signal vehicles in the rear before slowing down or stopping on the public highway.

Slow down when approaching any cross roads obscured by trees, shrubbery or houses.

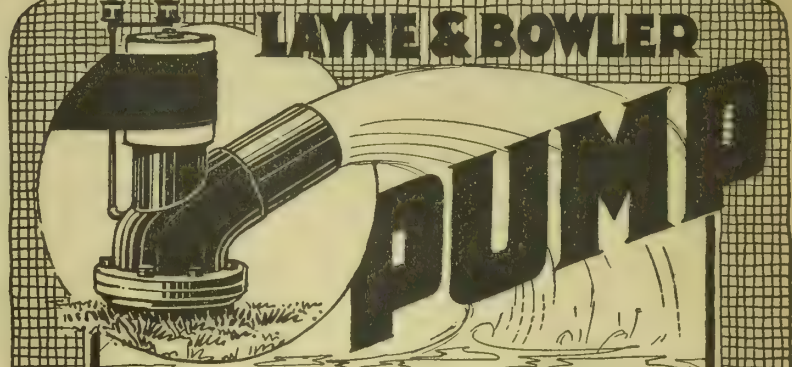
Be cautious approaching public meeting places, such as churches, halls and hospitals.

Stop. Come to a dead standstill when a pedestrian becomes confused in front of you.

Stop, look, listen and think, before crossing car tracks. Don't take chances.

Don't allow children to operate your car. To do so might amount to criminal negligence.

LAYNE & BOWLER PUMP



The severe duty of Western irrigation service requires a pump designed to operate at low cost without danger of a breakdown or trouble. Its construction must be extremely simple and of such a character as to meet widely varying conditions. Layne & Bowler Pumps meet these requirements perfectly. Over 5000 in actual operation testify to this. Let the World's largest water developers solve your pumping problems. Our interesting catalog No. 25, on irrigation and pumps is yours for the asking. Write for it.

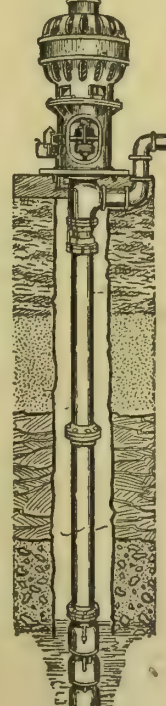
LAYNE & BOWLER CORPORATION
900 Santa Fe Ave., Los Angeles.
WORLD'S LARGEST WATER DEVELOPERS.

DEEP WELL TURBINES

No valves to pack or plunger to get out of order. For use in any well ten inches in diameter or over.

A complete line of irrigating pumps of all descriptions, horizontal, and vertical for belt drive or direct connection to electric motor.

Prices as low as are consistent with good quality and workmanship.



WRITE FOR CATALOGUE NO. 47.

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The KROGH Vertical Pumps

Are automatically water balanced and require no adjustment of any kind. All weights of shafting and rotating parts are carried on the water film absolutely without the use of thrust bearings or adjustment of any kind.

No BALANCE RINGS or PLATES in KROGH PUMPS. They are unnecessary, and mean only continual trouble. KROGH PUMPS with the least number of parts means less friction and greater efficiency. Get our Bulletin No. 75 before deciding on a pump.



Krogh Manufacturing Co.
SAN FRANCISCO. LOS ANGELES.

AWARDED GOLD MEDAL
HIGHEST AWARD EVER

Grades Average 320 Pounds Fat.

[Written for Pacific Rural Press.]

Always we are told by owners of high producing herds of dairy cows that the first steps in building up a herd are comparatively easy; that a herd of low producing grades can be bred up to an average production of 225 to 250 pounds of fat a year with a very few top crosses of purebred sires, but when a higher minimum per cow is secured a longer time is necessary for each additional pound. This experience fully corresponds with that of John Denman of Sonoma county who has been 26 years building up a herd of grade Jerseys to a 320-pound fat average per year.

When Mr. Denman started to use registered Jersey bulls in 1981 he also began to weigh and test his milk, his average for the first year per cow being 142 pounds of fat. From that mark he increased the production of his herd to a 240-pound average with little difficulty, weeding out the low producers by weighing and testing his milk regularly. After that, however, his yearly average gain per cow in butterfat was smaller, although he con-

tinued to use purebred sires and weigh and test his milk. But it was sure; and that accounts for his 320-pound average during a 10-month lactation period at the present time.

In late years Mr. Denman has stopped monthly testing of his milk, securing almost as accurate results he finds by sampling four milkings and making a composite test of the lot. By testing each cow's milk in this manner twice during her lactation period he is able to ascertain her approximate average test. Weighing is done regularly one day of every month; and as a result the comparative value of each cow in his herd is arrived at. Regardless of the cow these weights and tests are entirely relied upon in the selection of the milking herd, the good ones being retained and the poorest ones disposed of.

SALT FOR DAIRY COWS.

From one to two ounces of salt daily, according to the amount of milk produced, is sufficient to meet all requirements of the dairy cow on rations of ordinary feeds according to Dr. E. B. Forbes of the Ohio Exp. Sta., who found one ounce of salt a day satisfied the cows' needs when producing as much as 45 pounds of milk daily.

The Visalia Co-operative Creamery on Feb. 21 paid out the largest amount at the highest rate ever paid for January cream in its history. About 264,000 pounds of cream was delivered from which 102,500 pounds butter was churned, for which the farmers received \$35,000 at 42½ and 43½ cents per pound, according to the Weekly Visalia Delta. A year ago the price was 11 cents lower.

T. B. Purvine is just completing semi-official tests on 24 of his registered Jersey cows in Sonoma county. He states that 19 of the lot will make the Register of Merit. Park Beauty Roma, an aged cow in the herd; made 550 pounds of fat during the year and Fairy Boy's Finance Evelyn, a 2-year-old, made 375 pounds fat.

Mrs. Phillip Duffy, who has been breeding Durhams exclusively near Napa, is now starting a Holstein herd. Her recent purchases include



HOLSTEIN CATTLE

The highest prices ever paid in the St. Paul yards for a cow or a bull for best were paid within a year for Holsteins. Two 2-year-old Holstein cows 13 years old brought \$187, one 12-year-old registered Holstein cow \$116 and a registered 4-year-old Holstein bull \$168.93. In considering Holstein cattle as a dual purpose breed, the above mentioned facts render further comment unnecessary. There is big money in the big "Black and White" Holsteins.

Send for FREE Illustrated Descriptive Booklets. The Holstein-Friesian Association of America.

F. L. Houghton, Sec'y.
Box 230, Brattleboro, Vt.

BLACK Percheron Stallion

9 Years old, Weight 1900 lbs.
Broken to Harness.
Sound.

A Good Breeder.
PRICE, \$350.

For further particulars, address

HENRY WHEATLEY
NAPA, CAL.

Trewhitt's Big Type Poland Chinas



The blood lines of the herd are unexcelled, the foundation stock having been selected from the Top-notch Herds of the Middle West. Sows of fine quality, yet big and roomy. The sort that have large litters of vigorous pigs.

See my Consignment at Hanford Sale, March 7th.

W. D. TREWHITT,

HANFORD, CAL.

60 high grade cows from Bert Sparks, a fine lot of heifers from W. L. Morris of Yolo, and five heifers sired by Lord Asa, head of the Napa Hospital herd, from the Depew Co. of Yolo.



Over a Million Users!

P. M. Sharples made the first separator in America (38 years ago). Sharples has been the foremost and highest-class American separator ever since. The Sharples Separator factories are the largest and longest-established in America. Sharples machines are found in every dairying country of the world. The reason for this popularity is that Sharples separators have invaluable patented advantages found on no other make.

SHARPLES SUCTION-FEED CREAM SEPARATOR

- the only separator that will skim clean at widely-varying speeds
- the only separator that gives cream of unchanging thickness—all speeds
- the only separator that will skim your milk quicker when you turn faster
- the only separator with just one piece in the bowl—no discs, easy to clean
- the only separator with knee-low supply tank and a once-a-month oiling system

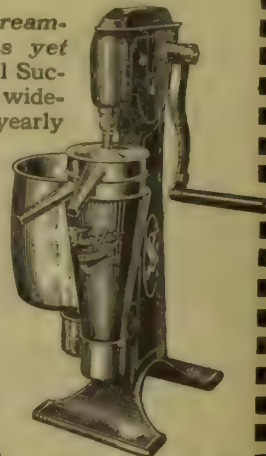
The Sharples has entered a new field of cream-saving which no other separator has yet touched. This is owing to the wonderful Suction-feed, which enables clean skimming at widely-varying speeds—which saves \$100 yearly (sometimes more) on the average farm, over every other separator.

The Sharples is not only capable of doing good work, but will always automatically do good work under the most unfavorable conditions. We have spent years of experiment in perfecting a separator that is an Insurance Policy against Carelessness. That ideal has been realized in the Sharples Suction-feed. Write for catalog to Dept. 31.

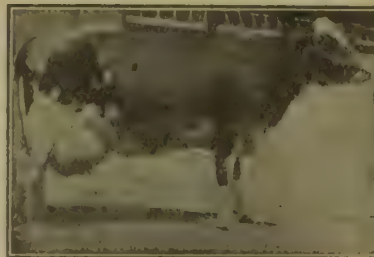
Sharples Separator Co., West Chester, Pa.

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Breed for Butterfat



The quickest and surest way to make your Holstein herd more profitable in spite of high cost of feed is to introduce blood from high-testing ancestry.

My herd has a larger percentage of high-testing cows than any other herd in the State.

Beryl Clothilde Hengerveld, Champion in Butter-fat Contest, Sacramento, 5-day record, 21.11 pounds, test 4.7 per cent.

My young herd bull, DUTCHLAND SIR PIETERTJE CREAMELLE, has high-test breeding, and is transmitting this breeding to his sons and daughters. Five tested daughters have records averaging 21 pounds, all testing better than 4%. One of these, Clothilde Pontiac Creamelle, is California Champion 2-year-old, with a record of 22.52 pounds at 2 years 1 month; test 4.72%.

Have a few fine young bulls that will soon be ready for service.

WRITE OR CALL AND SEE THEM.

F. STENZEL

Breeder of High-Test Holsteins.

SAN LORENZO,

CALIFORNIA

Bacteria Count Reduced Cheaply.

[Written for Pacific Rural Press.]

J. D. Huston of Imperial is the only dairyman we found who is shipping sweet cream from Imperial Valley to Los Angeles for fresh consumption. His milk is rated Grade AA and usually has a bacterial test of about 10,000 after the long hot trip. The day before we visited his ranch, two cans had tested 5,000. This is a wonderful record, as cited to us by deputy health officer F. Redding of Imperial county.

"I worked seven or eight months to get the test below 50,000," says Mr. Huston. I clipped and washed the cows' bags, sterilized the cans, refrigerated the milk, had airy cement-floored barns constructed, washed out after each milking, used covered milk buckets, and tried every conceivable way to reduce the count. Finally I sent the evening's milk separate from the morning's and got a high count on the latter, but a low count on the evening's milk. The reason was that the cans for the morning's milk were washed at night and set on the rack but did not get any sunshine. All of the cleanliness and steam sterilization had not been enough; and the cans each morning would infect the milk put into them."

It cost just \$15.80 to get a sterilizer that has solved the problem. It is made of galvanized iron about 3x4x6 feet, set on concrete base, and has two large doors in front which

may be closed steam tight. The separator bowl, disks, buckets, and cans are packed into this after being cleaned each milking; and when all through other work, the live steam remaining in the boiler is all turned into the sterilizer for perhaps 45 minutes or as long as it lasts. The sterilizer is often still hot at noon, for it is kept closed tight until utensils are needed again. A safety-valve lets steam out if it comes in with dangerous pressure.

Ground has just been broken at Galt for the erection of a \$200,000 milk condensary, with a capacity of 100,000 lbs. of milk daily; It is understood about 5000 cows have been signed up for this. The Utah Milk Condensary are the owners of the new plant. The plant was secured through the efforts of J. M. Henderson, Jr., who is also giving a large amount of his time to organizing the milk producers of the Sacramento Valley.

Jay Dutter of the Henderson Co. at Galt writes of "the enlistment of two more enthusiastic boosters of Holsteins, A. A. Quackenbush and A. R. Strother of Acampo, who have just purchased of us a splendid young bull, Supreme Glista Pietje, whose dam has a record of 32.39 pounds butter in seven days." Messrs. Quackenbush and Strother have mostly grade cows but propose to get purebreds soon.

GRANDSONS OF TILLY ALCARTRA

We now offer two young bulls for sale. No. 1—Born Sept. 13, 1915.



Prince Alcartra Korndyke,
Best bred son of Tilly Alcartra.

Write for prices, or better come and see them.

J. S. GIBSON CO., Box 97 Williams, Cal.

"THE NAME GIBSON INSURES QUALITY."

for sale that are old enough for His Dam is a 21-25 4-yr old, sired by a son of Beryl Wayne Korndyke, who has two 30 lb. daughters. His full sister has a record of 18.56 lbs. butter in 7 days at age of 2 years 3 months and will be kept on test for the year.

No. 2—Born Sept. 3, 1915. His dam is a heavy producer and will be put on test next time she freshens. His full sister has a record of 19.36 in 7 days at 2 years 6 months and will also be kept on test for the year. The bulls are nicely marked, have perfect top lines, are good individuals and both sired by Prince Alcartra Korndyke, who now has 6 A. R. O daughters and more coming.



KIMBLE RAMBOUILLETS.

These sheep are purebred, large and smooth, with heavy fleece of fine, long, staple, white wool. Yearling rams and ewes. Individuals or carload lots.

Prices reasonable.

Correspondence solicited.

CHAS. A. KIMBLE, HANFORD, CAL.

Breeder and Importer.



Champion Ram P. P. I. E.

San Ramon Shropshires

WINNINGS P. P. I. E., 1915.

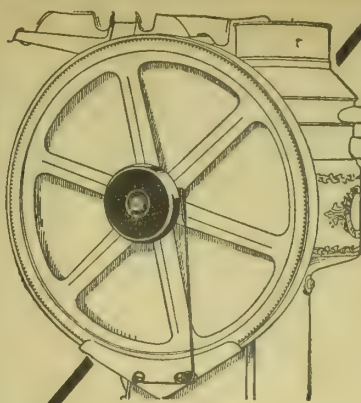
Aged Ram, First and Second. Yearling Ram, First Ram Lamb, First, Second, and Third. Champion Ram. Yearling Ewe, Second. Ewe Lamb, Second and Third. Get of Sire, First. Pen of three Lambs bred by Exhibitor, First and Fourth. Pen of four Rams, bred by Exhibitor, First and Fourth. Flock any age, Second. Flock, any age, bred by Exhibitor, Second. Flock, one year old, First. Flock one year old, bred by Exhibitor, First. Flock under one year, First. Flock under one year, bred by Exhibitor, First. Produce of Ewe, First, Second and Third. Premier Championship for Breeder Premier Championship for Exhibitor. A total, including American Shropshire Specials, of 15 Firsts 9 Seconds, and 6 Championships.

Purebred Registered Rams and Ewes.

Individuals or Carload Lots

BISHOP BROS., Agents. SAN RAMON.

Contra Costa County, California.



This "Warning Signal"

Insures proper speed on every NEW De Laval Cream Separator

NINE people out of ten turn the separator handle too slowly.

Thousands of tests with experienced separator operators show this to be the case.

Other tests made by the highest authorities have shown conclusively that there is a big cream loss when the cream separator is not turned fast enough.

You will avoid such a possible cream loss if you buy the New De Laval. The Bell Speed Indicator on the New De Laval is a "warning signal" that insures proper speed at all times. No matter who runs your De Laval, this "warning signal" will tell you when the speed is not right. You hear it, and do not need to see it. This one feature alone may easily save you the cost of a cream separator in the next few months.

But that is only one of the big advantages of the New De Laval. Other advantages are greater capacity, closer skimming and easier turning, simpler bowl construction, and easier washing.

If you haven't the spare cash right now, that need not stand in the way of your getting a New De Laval right away. We have an arrangement with De Laval agents which makes it possible for any reputable farmer to secure a De Laval on the partial payment plan—a small payment at the time of purchase and the balance in several installments—so that your De Laval will actually pay for itself while you are using it and getting the benefit from it.

Why not see the nearest De Laval agent at once? If you do not know him, write to the nearest office for any desired information.

DE LAVAL DAIRY SUPPLY CO.

LARGEST DAIRY SUPPLY HOUSE ON THE PACIFIC COAST. We specialize in Alpha Gasoline and Distillate Engines, Ideal Green Feed Silos, Irrigation Equipment, Centrifugal and Deep Well Pumps and Alpha Spraying Outfits. Send for special catalog.

101 DRUMM STREET, SAN FRANCISCO

50,000 BRANCHES AND LOCAL AGENCIES THE WORLD OVER



Whitehall Percheron Stud

This is the largest Percheron Breeding Establishment in California.

Our brood mares were carefully selected by us from the best Studs in France.

Our yearlings and two's are got by Londreilos No. 97561, Reserve Grand Champion P. P. I. E.

We are now offering a few young Registered Stallions ready for immediate service at very reasonable prices. We can give you more real horse for your money than anyone else, because we have bred and raised them, so cut out dealers' profits. Come and look them over.

PACIFIC SUGAR CORPORATION

Ranch Department, Tracy, California.
E. M. LITTLE, Manager.

A GRADE GUERNSEY COW in Montana produced in one month 1815.1 lbs. milk and 87.71 lbs. butter fat, an average of over 3 lbs. of butter daily.

Grade up your herd with a Guernsey Bull

Write for our FREE BOOKLETS and a FREE POCKET HERD BOOK

The American Guernsey Cattle Club

Box P.P.

PETERBORO, N. H.



LA DRIVER STOCK FARM

Herd headed by CREAMCUP CORNUCOPIA, son of COLANTHA SIR PONTIAC AAGGIE, whose three nearest dams average 30.50 lbs. of butter. Sire, COLANTHA JOHANNA LAD, son of the first 34-lb. cow.

Young bulls for sale. Correspondence solicited.

LESTER A. DRIVER,

Nicolaus, Cal.

Cotton Seed Cake and Meal

Lowest in cost considering the high percentage protein and fat as compared with other feeds. Sold in carlots of 15 to 20 tons each.

WILLITS & PATTERSON, No. 1 Drumm St., San Francisco.

Agents Imperial Valley Oil & Cotton Co.

State Dairy Cow Competition, January.

Two cows produced over 100 pounds of butter fat in the competition in January. Seventy-five cows produced over 40 pounds of fat, as against 57 cows in December. The figures given below, including all in the Competition which produced over 40 pounds, are worthy of study and comparison with your own production.

RESULTS OF COMPETITION.

Names	Butter Fat
per ct.	lbs.
Abbott, K. W., Milpitas	3.74 76.143
Riverside Beauty II, H.	4.28 62.360
Melba, Gr. H.	3.70 59.415
Pet, Gr. H.	3.39 56.328
Rilla, Gr. H.	4.46 52.677
Rosie, Gr. H.	4.09 52.237
Ellie, Gr. H.	3.61 52.150
Emiline, Gr. H.	3.47 48.191
Maria, Gr. H.	
Bohnett Bros., Campbell:	
Murne, Gr.	5.35 74.146
Spot, Gr.	5.81 71.387
Reddie, Gr. S-H.	4.14 56.888
Flayne, Gr.	3.41 49.731
Dorris, Gr.	4.31 48.518
Daisy, Gr. J.	4.66 45.691
Alba, Gr. J.	3.71 43.260
Bomberger, J. M., Modesto:	
Rose, Gr. J.	5.8 75.127
Edith, Gr. J.	4.49 50.863
Petraldia, J.	5.68 50.206
Hope of Green Gold, J.	6.49 47.371
Pet of Green Gold, J.	7.04 41.529
Cornwell, H. E., Modesto:	
Abbie De K. of East	
Bank, H.	3.89 89.645
Elliott-Brant Rancho,	
Owensmouth:	
Butternut Queen, G.	5.07 75.786
Imp. Hayes Sw. Marj., G.	4.63 50.481
Gross, H. G., Eureka:	
Marion of Butter Val-	
ley, J.	5.28 54.226
Underlata Gussie Lee, J.	4.79 47.565
Old's Golden Eminent, J.	6.35 43.688
Henderson, J. W., Berkeley:	
Kitchener's Clem. of B.	
V., G.	4.03 47.591
Rancho's Morn. Rose, G.	4.46 45.777
Hewins, Homer, Calistoga:	
Silver Gloss Poplar II, H.	3.84 57.754
Pauline of Bloom, H.	3.93 51.605
Higdon, W. J., Tulare:	
Paula Segis, H.	3.44 88.711
Hollow-Hill Farm, Colton:	
Imp. Brittleware Mistle-	
toe, G.	4.79 72.449
No. 482, Gr. G.	5.22 66.920
No. 812, Gr. G.	5.19 66.235
No. 811, Gr. G.	4.62 63.021
Imp. Cherry III of the	
Eff., G.	4.47 57.095
Imp. Britlew, Wild Rose,	
G.	4.73 51.685
No. 485, Gr. G.	4.97 49.074
Capella's Jessie, G.	4.63 43.221

McFarland, E. B., San Mateo:	
Willowmoor Vesta IV, Ay.	4.14 63.222
Menley, S. A., Gridley:	
Beauty, Gr. H.	3.3 50.332
Miller, Guy H., Modesto:	
Goldie of Venadera, J.	4.79 69.455
Pearl of Venadera, J.	6.79 57.561
Lorna of Venadera, J.	4.62 54.770
Wanda of Venadera, J.	6.49 49.162
Aldene of Venadera, J.	6.21 43.867
Morris, A. W. & Sons, Corp.,	
Woodland:	
Aggie Acme of Riv. II, H.	3.89 104.466
Aralia De Kol III, H.	3.35 85.260
Hartog Cream De Kol, H.	3.01 80.114
Aralia De K. Pont. Mead,	
H.	3.74 53.367
Aralia Mead Pont. De	
Kol, H.	3.14 52.933
Cobossie Korndyke	
Burke, H.	3.42 48.263
Napa State Hospital, Napa:	
No. 67, Gr. H.	4.13 81.605
No. 15, Gr. H.	3.19 65.896
No. 29, Gr. H.	3.24 60.886
No. 28, Gr. H.	4.09 54.773
No. 68, Gr. H.	2.48 52.140
No. 30, Gr. H.	3.09 50.580
Pacific States Corp., Tulare:	
Forest View Wayne,	
Korn, H.	3.17 84.962
Palo Alto Stock Farm,	
Palo Alto:	
May Wawa De K. Burke,	
H.	2.98 75.063
Imp. Miss Jane of L. G.	5.45 70.714
Mousie De K. Lady II, H.	2.95 68.773
Athalva II, H.	2.78 62.980
Imp. Eng. Lady Orange, G.	4.86 53.008
Mystic's Jane of A. V., G.	4.21 49.699
University Farm, Davis:	
Korndyke Senorita, H.	3.74 80.962
Interested Jap's Santa, J.	5.66 79.076
Cherry, Gr. Sh.	4.09 66.795
Agnes Colantha, H.	3.50 48.920
Willowmoor Cherry, Ay.	4.74 48.907
Fern Ridge Pearl, G.	4.02 48.123
Vina Ranch, Leland Stanford	
Jr. Univ., Vina:	
Blumar, H.	4.15 102.341
Boweda, H.	4.31 94.332
Arequipa, H.	3.71 78.871
Dovemoon, H.	4.10 75.514

Winner of Pacific Rural Press prize for January, K. W. Abbott; average production of 5 grades, 56.605 pounds butter fat.

Winner of McAlister & Sons prize for January, Napa State Hospital; grade H. No. 67, 81.605 pounds butter fat. Total entries to date, 160 cows. Average production for January 1917 (98 cows): 1303 pounds milk, 54.37 pounds fat (range, 104.47 to 23.9 lbs.).

Totals for 98 cows: 4714 days, 127,706.8 pounds milk, 5328.367 pounds fat. The rules for awarding the monthly prizes of \$25 each, offered by Pacific Rural Press, San Francisco, for the highest production of five grade cows in a herd during a calendar month have been modified, to the effect that the award may be made for the production of five pure-bred cows in a herd, in case no group of five grade cows is eligible.

Beef Raising Easy in Campo Valley.

[Written for Pacific Rural Press.]

Green wild feed almost the year around makes beef raising easy and profitable on the Campo plateau, surrounded by the mountains of San Diego county. One of the progressive breeders there is A. Chilwell, who last year got about 400 calves from 550 cows under wild-range management. The stock is high-grade Hereford, and the feed is mostly wild pasture; but about February all cattle have to be fed on wild hay. Late in May the cattle are driven to the surrounding mountains to let the level ranch pastures grow all summer. Part of these are cut in July for the next spring's hay, and they grow into good pasture before the cattle are brought back. The grass stays green from about April 1 until the frosts of November.

Bulls are put with the cows from June 1 until Oct. 1 to bring the calves April to August; but mostly in April and May while the mountain feed is best.

About September in a common year the mountain feed begins to fail and the cattle are brought back to lower pasture about Oct. 1 to Nov. 15, those in best condition being left longest.

Branding and Weaning. — The April and May calves are branded about June 1 and weaned at the fall branding. The calves from June 1

to July 15 are branded and taken from their mothers at the same time, about Oct. 1. Later calves are left with the cows on good pasture through the winter until feeding time in February, when they are separated and put into one of the dozen fields on the home ranch. They also are fed the same kind of hay until pasture is green again.

WOODEN SILOS ALL RIGHT IN IMPERIAL VALLEY.

To the Editor: Can wooden silos stand the summer heat in Imperial Valley? And does silage keep in the hot weather there?—Subscriber.

They do. G. V. Rude on the A. J. McPherrin Jersey ranch near Imperial put up 190 tons of milo silage in the middle of last August in a stave silo and fed it out steadily from a week after it was put up. It kept fine until about November 1 when it had been mostly fed out and both silos were filled with Indian corn. A one-inch stream of water was pumped into the silage distributor with the milo. One silo was empty from winter until August. Both had been painted with white lead outside and black preservative paint inside when put up. In April or May when the staves seemed to be drying out, the hoops were tightened; and again, especially at the

Hillcrest Stock Farm.

Shorthorn Cattle, Shropshire and Merino Sheep



Shorthorn Bulls for Sale, sired by such noted bulls as King Lancaster, Knights Perfection, Greenwood Knight and Greenwood King. Nearly all offsprings of the famous King Edward.

These Bulls are conceded to be the best offering ever made from the Hillcrest Stock Farm.

For Particulars Apply—

T. S. GLIDE
Proprietor.

Davis, California

King Lancaster, sired by King Edward, grand champion bull State Fair, 1909-10-11.

ORMONDALE SHORTHORNS



Golden Goods, Jr., Herd Sire.

Our 1916-17 offering of yearling bulls is small but select. They are all heavy boned, solid red in color and of Scotch and Scotch-topped breeding. Suited for either the range grower or breeder.

DUROCS.

Our Durocs are of the big type, with big bone, well-arched backs and carrying good hams.

We have a few head of service boars, now ready for service, solid red in color and out of prize-winning animals.

Every Animal Positively Guaranteed

Whether you buy or not, visit our ranch, 7 miles from Palo Alto on Woodside Road. We welcome inspection. Prices and pedigrees on application.

Shorthorn Cattle
Duroc-Jersey Swine

ORMONDALE CO.

R. D. No. 1
Redwood City,
California.



ORDER YOUR Shorthorns - Herefords NOW!

There is an impending bull shortage all over the country, and prospects are that it will become more acute since good feed is assured by the recent rains.

I have just returned from the Middle West with the best lot of Herefords ever brought to California, and am fully acquainted with supplies of breeding stock in that section.

Place Your Order Before the Supply is Exhausted.

As to the service you may expect I refer you to the following satisfied customers:
W. Mayo Newhall, San Francisco; W. Bemmerly, Woodland; Parrott Est. Co., Chico; Frankenheimer Bros., Stockton; A. E. Noyes and Son, Sutter City; Stanford University Ranch, Vina; Wm. Russ, Eureka; Simon-Newman Co., Newman; and J. A. Donohoe, Donohoe-Kelly Banking Co., San Francisco.

BULLS IN SINGLE OR CARLOAD LOTS.

(On a strictly commission basis.)

ADDRESS ME

R. M. DUNLAP

DESK A, ROOM 217, UNDERWOOD BLDG., SAN FRANCISCO, CAL.

BULLS - Shorthorns - HEIFERS

REGISTERED AND TUBERCULIN TESTED.

Animals of either sex ready to deliver in car lots or singly.

H. L. & E. H. MURPHY, Perkins, Cal.

HOPLAND STOCK FARM

REGISTERED SHORTHORN BULLS

A fine lot of individuals. Ready for service on the range. Registered Berkshires, Holstein Bulls from high-testing cows.

San Francisco Office,

1210 Flood Bldg.

Digester Tankage

Send for Sensible folder on feeding hogs

Western Meat Company

Animal Food Dept. 704 Townsend St., San Francisco

bottom, when the silage was put in, both times as tight as possible.

Allow about half acre of corn per cow for usual silage ration.

Corn makes the best silage when ears are dented, or just when it is beginning to glaze.

Be sure that silage is packed well around sides.

Standard-Sized Pig Litters.

[Written for Pacific Rural Press.]

All breeders of even purebred hogs admit that there are usually one or more undersized pigs in every litter. Is this not due to the effort made by most breeders to raise sows which farrow more than they can suckle right?

It is not the number of pigs born per litter that counts (if there are enough) but the number that are alive and thrifty at weaning age, leaving the mothers in condition to breed again without injury and with little delay. Granting proper feed and housing conditions, a successful purebred Berkshire breeder of Sonoma county prefers not over 4 to 6 the first litter, though he has had 9. Size of litters increases up to the sixth or seventh, but even at maturity, anything over 10 drains the sow and puts her in bad condition for breeding. A Kings county Poland China breeder believes that anything over 8 per litter is too much and the least promising should be killed at birth. When there are more than eight, the stronger ones injure and starve the weak ones, so they are likely to be underdeveloped anyway. These are a disadvantage because they waste the sow's strength, both in bearing and in

suckling her over-large litter.

It is better to have stock whose ancestors have consistently farrowed and raised 8 or 9, though a Stanislaus Duroc breeder claims that the daughter of a sow having only 8 is likely to have less. He wants as big litters as he can get, and allows a dozen pigs per sow "if she can do them justice." A Colusa county Berkshire breeder says that 8 are more profitable than 12, but notes that some sows alternate large and small litters, though "a good sow generally has over eight." A Glenn county Chester White breeder had a junior four-year sow which farrowed 12, 9, 15, 10, and 18 pigs in her first five litters respectively. He always kills all but 10, though he claims the sows can suckle as many pigs satisfactorily as they have teats for. He gives them a good start by not breeding to farrow under a year old, but he gets two litters per year.

Since 8 or 10 per litter are generally recognized as being all a sow can raise well under most favorable conditions, why should not breeders ask for consistent records of dams and grandams producing such litters, no more nor less?

Hogs Wait Till Troughs are Full.

[Written for Pacific Rural Press.]

When as a boy we used to wade through a million crowding, squealing, hungry shoats to empty a couple of bucketfuls of rich slop into a trough in the middle of the pen, we didn't get it all into the trough. A goodly portion was carried away on top of the biggest shoats' heads and some of it had spilled along the way. We had to kick the animals to make a path through them, and then the strongest shoats got the richest of the feed, for only the thin part of the slop would get past them to the smaller ones that ought to have gotten the best of it.

So it was with pleasure that we recently noted the system on the Cloverleaf Ranch in San Pasqual Valley, San Diego county, for it avoided all such waste and annoyance.

The pens all face a central alley down which the feed can be hauled by horse power. A panel in the

front end of each pen about 3x14 feet is hung from its upper corners by horizontal pegs into good posts so that the panel swings on the pegs. When it hangs sloping outward, the panel is flush with the outer edge of a trough of equal length, and is held there by means of a 1x4 slide which fits into a socket fastened to the trough.

Some time after each feed, this panel is swung inward and the slide catches over the inner edge of the trough. This keeps dirt out; but more important, it keeps the hogs out while slop and feed are distributed evenly and at leisure in the troughs.

To avoid the mudhole which often accompanies fixed troughs, wooden feeding floors have been placed in front of them.

CHUTELESS SILOS.

[Written for Pacific Rural Press.]

Chutes on silos have their disadvantages besides often being inconvenient to climb in. Where a great deal of silage is used, and one man attempts to handle it, the chutes sometimes would fill up before enough has been thrown out. It also takes more lumber and time to put chutes on two silos than to fix it as G. R. Cloes of San Diego county has done. The silos are 36 feet high and 10 feet apart. They were turned so their doorways would come in the corner where a straight board wall connects the two all the way up and on the opposite side from the barn. This is to prevent the silage from being scattered by wind when thrown down.

An impervious layer resulting on the top of a filled silo makes a cover unnecessary.

BERNSTEIN'S RANCH

Will consign two Great Boars and fifteen splendid sows to the sale to be held at

Hanford, March 7

These are from the Bigger,
Easier Feeding Kind of

Poland Chinas

The kind that will make good.

Write me for catalogue.

L. C. TREWHITT, Manager. W. BERNSTEIN, Proprietor.

Hanford, Kings Co., Cal.

THIRD

Semi-Annual Sale

OF

Kings County
Poland China Breeders' Ass'n.

March 7th

AT

KINGS COUNTY FAIR GROUNDS

HANFORD, CAL.

100---Head---100
Registered Poland Chinas

TO BE SOLD WITHOUT RESERVE

The Best from Kings County Herds—Boars of Herd Header
Quality—Gilts and Sows That Equal the Best.

CONSIGNORS:

M. BASSETT
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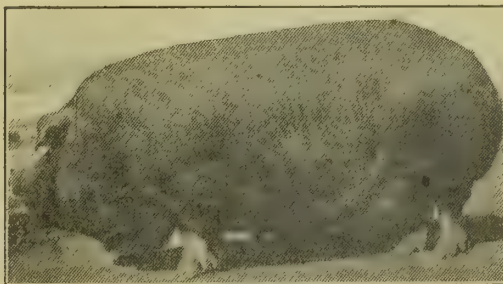
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For Catalog or Information Write
F. E. NEWTON, HANFORD, CAL.

BASSETT'S POLAND CHINAS



GRAND CHAMPION SOW,
P. P. I. E. 1915; Sacramento, 1916.

For many years at widely separated show rings, under many different judges of varying type ideals, my Poland Chinas have been consistent prize-winners. My herd is large and I cull closely. The animals sent out as breeders are the very tops of a large number. I KNOW that my kind of Poland China is a profitable farmer's hog, for I send carloads of them to the packer every year—uniform in size, high in quality, quickly and economically matured and finished.

Young stock, \$30 Up.
M. BASSETT,
Box 1, Hanford, Cal.

Crawshaw's Chinas in Consignment Sale

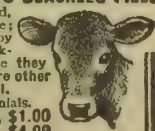
Two choice boars, two bred sows, two bred gilts and four open gilts sell March 7th.
Also at private sale, twenty-five choice boars six months old.
Sell your scrub and buy a money-maker for \$25.00.

DR. J. A. CRAWSHAW,

HANFORD, CAL.

BLACK LEG LOSSES SURELY PREVENTED
by CUTTER'S BLACKLEG PILLS
Low-priced,
fresh, reliable,
preferred by
western stock-
men, because they
protect where other
vaccines fail.

Write for booklet and testimonials.
10-dose pkg. Blackleg Pills, \$1.00
50-dose pkg. Blackleg Pills, \$4.00
Use any injector, but Cutter's simplest and strongest.
The superiority of Cutter products is due to over 15
years of specializing in VACCINES AND SERUMS
ONLY. INSIST ON CUTTER'S. If unobtainable,
order direct.
The Cutter Laboratory, Berkeley, California



Hog Cholera Serum

I represent one of the greatest Government Inspected Hog Cholera Serum Plants in the whole country.

NO BETTER SERUM MADE.
An ounce of prevention is worth a pound of cure. Find out about this serum today. Price Right.

For particulars address.

CARRUTHERS FARMS,
MAYFIELD, CALIF.

TAMWORTHS

(The Bacon Hog)

Largest Herd in the State

DUROC - JERSEYS

Mature Stock and Weanlings of both
sexes. Sure to please.

SWINELAND FARM,
W. O. Pearson, Prop. Woodland, Cal.

Rhoades & Rhoades

Expert Live Stock Auctioneers.

Purebred Stock Sales a Specialty

Sales Conducted in All Parts of Calif.

Ben A. Rhoades, Auctioneer.

1501-2-5 So. Main St., Los Angeles, Cal.

Live Stock and Dairy Notes.

[Livestock breeders all over the State are invited to send on postal cards, notes regarding their sales, State and County Fair intentions, new stock, etc.]

DAIRYING.

On account of the rain, prices of dairy cows are getting stronger, notes our Fresno county representative.

A Hughson dairyman was recently fined \$25 for keeping an insanitary dairy after being notified to clean up.

The Gotshall Cattle Co. herd is now housed in its finely equipped ranch near Ripon and has only purebred Holsteins.

S. G. Gambonini of Petaluma has recently received a highly bred Holstein bull from the East to improve his grade herd.

The Tulare Co-operative Creamery has been sold to the Los Angeles Creamery Co., which has been operating it several months.

An amendment before the Legislature is to make the dairy law apply to milk used for butter, as it was intended when the law was passed.

The California Creamery Operators' Ass'n is urging cow testing associations to increase the output without increasing the costs of production.

The junior three-year Holstein Uniform Lorena, owned in New York, has broken the record with 528.4 pounds milk containing 29.983 pounds fat, in seven days.

The Napa-Sonoma Cow Testing Association is now testing 1500 cows. This association, which was formerly in Napa county alone, has been operating five months.

Senator Underwood is proposing in Congress a flat tax of two cents a pound on oleomargarine instead of the 10 cents on colored and ¼ cent on uncolored oleo now imposed.

Seven Holsteins with official productions above 27 pounds fat in seven days, two of them above 35 pounds fat, are reported Feb. 19 by Malcolm H. Gardner, Supt. of Advanced Registry.

Unlawful combination in restraint of trade in eight northern and western States is charged in a federal indictment returned Feb. 24 against 8 corporations and 11 individuals handling dairy products.

The Bodega Co-operative Creamery of Sonoma county is making 1100 pounds of butter a day, but expects to increase this amount to a ton a day as soon as feed conditions become more favorable in that section.

The formation of a new cow-testing association in the Nicasio district of Marin county is well under way. It is expected that the new association will start with 1000 or more cows, as 700 head were signed up at the first meeting.

"Those dairymen who are going to be prohibited from holding dairy licenses may still sell to creameries where the milk is pasteurized, but will not be allowed to sell it at retail," announces Dairy Inspector J. H. Severin of Stanislaus county.

The Holstein heifer Jewel Pontiac Segis, owned in Minnesota, has broken the world's record in the junior two-year-old class with a record begun 335 days after freshening. She made 473.6 pounds milk with 22.07 pounds butter in seven days.

The Pt. Reyes Co-operative Creamery now has 134 patrons and 87 members located all the way from Occidental to Geronimo. They made a total of 1,100,070 pounds of butter last year and expect to materially increase that amount the present year.

Eighteen cows produced over 45 pounds fat in January in the Orland Unit of the Glenn County Cow Testing Ass'n and 28 produced over 50 pounds in the River Unit. Seven of these produced over 60 pounds. J. W. Craig's Holstein produced 78.9 pounds.

Old dairymen in the coast districts of Marin and Sonoma coun-

ties say there has been more feed shipped into that section the past year than during any three seasons in the past. The recent rains will overcome this situation, as the grass has already started to grow.

Stella of Venadera, the seventh daughter of a Register of Merit Jersey cow to be entered in the Register, began a test just under two years and has recently completed a record of 327.37 pounds fat from 5352 pounds milk. The mother of the seven daughters is still in the Guy Miller herd at Modesto.

The second carload of cheese has been shipped to New York from Modesto. It contained 25,000 pounds valued at \$5,000. New York used to be the leading cheese State of the Union and California used to produce what was considered about the worst cheese there was. Now we add the freight for 3,000 miles to New York's producing cost and compete with her at home.

SHEEP AND MISCELLANEOUS.

Buyers in the country have paid \$7.25 for spring lambs during the past week.

W. E. Price of Concord has rented 200 mules to contractors for use on irrigation work in Arizona.

It is said that after March 17 squirrel and coyote scalps will cease to draw a bounty in San Luis Obispo county.

A sheepskin-covered tin trough with rubber nipples is used by J. D. O'Grady of Dixon as a mother for motherless lambs.

March 3 is the date for the big community auction sale at Ripon when farm machinery and produce, from spray pumps to hens and livestock, will be sold.

The Frank Meacham Est. reports the sale of 25 purebred Merino ewes to J. W. Brauer of Shasta county and a purebred Red Polled bull to John Monte of Wadsworth, Nevada.

It is said that W. H. Moffatt of Nevada has bought about 200,000 lambs yet to be born, by paying \$1 per head in advance. They are to be delivered in September and October when Mr. Moffatt hopes to get about \$8 each for them, or more.

SWINE.

A hog in Tulare county recently died from rabies.

The highest price for hogs on the Chicago market since the Civil War was \$12.95, paid Feb. 21, 1917.

Harry Sickles of Springville, Tulare county, has just sold 480 hogs averaging 210 pounds at 11 cents a pound.

Two carloads of stock hogs were shipped from Riverside to Idaho Feb. 19 to be fattened for Eastern markets.

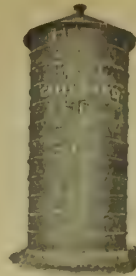
A four-months Berkshire boar sold for \$1,000 Feb. 22 at the American Berkshire Congress sale at Purdue University, Ind.

C. R. Windeler of Concord has bought the Pleasant Hill Stock Farm's herd of Hampshire hogs, thereby adding considerable to his already established herd.

The National Duroc Ass'n has offered a silver trophy for the best Durocs to be shown at the Napa County Fair the week following the State Fair at Sacramento.

R. L. Thompson of Oakdale has sold a car of hogs for \$1500 which gained three pounds per day apiece for the eight days the 77 hogs were fed steamed rolled rice.

Eighty-five hogs have been shipped from Imperial county to Kansas City at 10 cents a pound to be used for cholera serum. They were eight months old and weighed 212 pounds each.



AN IDEAL Green Feed Silo Insurance Against Drought

Now is the time to provide against shortage of green feed during the coming dry season.

The losses sustained by many dairymen last year could have been avoided if they had installed a silo early in the season.

Good Ensilage Increases the Milk Flow 25% and Reduces Feed Cost 15% to 20%.

AN IDEAL GREEN FEED SILO will give you longer service, a better quality of silage, and more profit on the investment than any cheap silo. This has been proven by the experience of many farmers who have tried both.

Better Design, Best Materials, Fine Workmanship are embodied in **IDEAL GREEN FEED SILOS.**

Our complete Silo Catalog and Dairy Hand Book give valuable information on ensilage feeding. Send for them now.

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Saving Money on Dry Feed with an Acme Cutter.

The waste of feed caused by cattle nosing out the coarse hay can be saved by running it through an Acme Feed Cutter; so that all of it will be consumed. This waste is usually from 20% to 25%. With alfalfa at \$12.00 per ton a net saving of \$3.00 per ton can be made.

The Acme Alfalfa Meal-Making Attachment can be fitted to all sizes of Acme Feed Cutters. It enables the making of an excellent grade of alfalfa meal from alfalfa hay at a cost not exceeding that for baling.

Catalog describing all sizes on request.

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EVERYTHING FOR THE DAIRY.

101 DRUMM STREET,

SAN FRANCISCO.

Edgemoor Farm Guernseys



Imp. Itchen May King, 25174.

Pretty Productive Profitable

A Few Animals of Either Sex For Sale

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W. H. DUPEE, Pres

KINGS COUNTY JACK RANCH

BREEDERS AND DEALERS

AMERICAN JACKS AND JENNETS.

LARGEST HERD IN THE COUNTRY

80 Head Jennets

40 Head Jacks

CAN SUPPLY YOUR WANTS AT ALL TIMES.

Write, or Come and See Them.

John Burrell, Proprietor

R. B., Box 73.

Hanford, Cal.

Sale Barn in Hanford near S. P. Depot.

BEEF CATTLE.

J. J. Hogarty is the newly appointed Alameda County Livestock Inspector.

Owing to high water in the Sacramento river Sunday, probably 100 head of cattle were drowned and Van Sickle island was inundated.

Starving cattle in the Livermore mountains generated a dispute with the Humane Society, whose superintendent was unable to find them.

At the annual student stock-judging contest at Ore. Agr. Col. Feb. 17, the first two prizes went to students from the great stock regions of Eastern Oregon.

The hide-and-brand bill now in the State Legislature has been highly endorsed by the California Cattle-men's Protective Ass'n. It provides for inspection of stock at shipping or killing.

W. M. Carruthers reports that he has a letter stating that F. W. Harding, secretary of the American Shorthorn Association, will attend the Carruthers Farms sale on May 2d, at Mayfield.

The 20th annual session of the American National Livestock Ass'n convened at Cheyenne, Wyo., Feb. 24, to discuss national forest range rates and also a proposed investigation of the meat industry.

KINGS COUNTY POLAND SALE.

The third semi-annual sale of the Kings County Poland China Breeders Ass'n to be held Mar. 7 on the County Fair Grounds proves that the previous sales have been carried on to the satisfaction of local buyers who know the consignors personally, as well as to the outside buyers who have freely patronized the sales.

The consignors for this sale are the well known long established breeders: M. Bassett, W. Bernstein, J. A. Crawshaw, T. J. Gilkerson, F. D. Ross, W. D. Trehwitt, J. M. Bernstein and Oscar and Clarence Dimmick. If you want to start in purebreds get the best you can for a foundation. Select not only fine individuals, but those whose pedigrees contain well-known prize winners showing they are of families that transmit their good points. Study the pedigrees from catalogs, which may now be had from F. E. Newton, Hanford.

At one year of age the bull should be ringed for convenience in handling.

LIVESTOCK DIRECTORY.

Rates in this directory, 3c per word each issue; or if carried weekly for one year, 2 1/2c per word.

SWINE.

Poland Chinas.

SMITH'S POLAND-CHINAS—Sows and gilts bred to Joker, First Prize Boar at the Wisconsin State Fair, 1915. These sows and gilts, sired by Iowa Wonder, who is a son of A. Wonder, the most celebrated Poland-China Boar, living or dead. Litters from this mating are the best I have ever seen anywhere. Prices low quality considered. Will sell one or a carload. As a special inducement each purchaser will be given a year's subscription to the American Swineherd, the best swine paper published, and a copy of the Handbook on the Sow; also a copy of the Pig Feeders' Manual. Geo. A. Smith, Corcoran, Cal.

SEND FOR FREE CATALOG—Finest ever issued. Tells of the famous Whitten Ranch money-making strain of Big Type Poland-Chinas. Make greatest weight in shortest time at lowest cost topping market at 225 lbs. in 6 months. 600 head both sexes, all ages, reasonable prices. Satisfaction guaranteed. Ranch in Tulare County, but address owner, R. H. Whitten, 610-A Security Building, Los Angeles.

GRAND CHAMPION SUPERBA POLANDS—A few choice spring Superba boars ready for service. Sows bred to Superba for fall litters. Prices reasonably low. Rough's Greenfields, Arlington Station, Riverside, Cal.

BOARS of serviceable age all sold. We have a few choice gilts bred to John Henry; an exceedingly choice boar. Also have a fine lot of Fall pigs, either sex. Bar N Ranch, E. A. Noves & Son, Props., Sutter, Calif.

POLAND-CHINAS—Bred gilts, \$15; young boars, \$10 and \$15; bred sows, \$25. Weanlings, either sex, \$6. Registered and crated, purchaser to return crates. E. A. Hall, Watsonville, Cal.

REGISTERED POLAND CHINAS—Young boars ready for service. Weanling pigs, both sexes. Prices attractive for quick sales. J. H. Cook Paradise, Cal.

LAKEVIEW STOCK FARM POLAND CHINAS are money-makers. Satisfaction or money refunded. Geo. V. Beckman & Sons, Lodi, Cal.

POLAND-CHINAS—Big type combined with quality. Choice bred sows, gilts, boars. W. D. Trehwitt, Box 82A, Hanford, Cal.

POLAND CHINAS—Big type. Shoats, either sex, or in unrelated pairs. O. L. Lann, Linnview, Route A, Modesto, Cal.

REGISTERED POLAND CHINAS—A few choice boars ready for service. W. J. Davis, Box 194, Riverbank, Cal.

REGISTERED POLAND CHINA SWINE—Prize-winners. Finest stock in the State. \$20 up. M. Bassett, Hanford, Cal.

POLAND-CHINAS—Stock for sale at all times. We please you or refund your money. W. A. Young, Lodi, Cal.

BIG-TYPE POLAND CHINAS—Stock from the best herds of the Middle West. N. Hauck, Alton, Humboldt Co., Cal.

REGISTERED POLAND-CHINAS and Duroc Jerseys. Cholera immune for life. T. H. Beckman, Lodi, Cal.

POLAND-CHINAS—Large type. The Browning Stock Farm. W. H. Browning, Woodland, Cal.

DEACON RANCH POLAND CHINAS—Prize winners. Young stock reasonable. Box 27A, Davis, Cal.

KNOB HILL STOCK FARM—Registered Poland-China Swine. A. M. Henry, Farmington, Cal.

AMAWAGE FARMS—Poland-China hogs and Holstein cattle. G. H. Loughery, Visalia, Cal.

POLAND-CHINAS—Prize-winners. Money-makers. W. Bernstein, Hanford, Cal.

BEAOKS EANCH herd of registered Poland Chinas. W. J. Hanna, Gilroy.

REGISTERED POLAND-CHINA HOGS—J. A. Clark, R. 4, Lodi, Cal.

Berkshires.

GRAPEWILD FARM BERKSHIRES—World's Fair Grand Champion Grand-Leader 2nd heads our herd, not only himself a champion, but the sire of Champions. At the 1916 California State Fair his daughters won first in all of the senior sow classes, including the Grand Champion Sow. At the 1916 Oregon State Fair a Grand Leader sow was Junior Champion. We are offering a number of choice boars of exceptional breeding and are also booking orders for Fall pigs. A. B. Humphrey, Escalon, San Joaquin Co., Cal.

REGISTERED BERKSHIRES—Progeny of Improver B. Young stock now ready for sale. Start your herd with breed and strain of established reputation for California conditions. Geo. G. Meckfessel, Berlin, Cal.

BERKSHIRES—I have one of the best herds on the Pacific Coast, including Grand Champion Sow, Reserve Grand Champion Boar under one year, Third Aged Boar, etc. Frank A. Brush, Santa Rosa, Cal.

CHOLERA IMMUNE BERKSHIRES—Fine sows bred to excellent boars for Spring farrow, \$50 to \$60 each. Splendid August and September boars and gilts, \$20 and \$25 each. W. H. Waugh, Riverside, Cal.

IMMUNIZED NORMANDY BERKSHIRES.—Good type. Breeding stock, any age, for sale at all times. Cast iron guarantee. Arlington Smith, Visalia, Cal.

BERKSHIRES—Bred sows and weanling pigs. Write for prices and pedigrees before buying. Butte City Ranch, Box P, Butte City, Glenn Co., Cal.

REGISTERED BERKSHIRES—Special offering. Three service boars at prices to move them quick. Write us. Imperial Stock Farm, Morgan Hill, Cal.

FOR SALE—CHEAP—Registered Berkshire Boar, three years old, in fine condition. Address T. G. Hester, Morgan Hill, Cal.

ROSE CREST BERKSHIRES—Rivals Champion Best blood. Open and bred gilts. Service boars. F. L. Hall, Perris, Cal.

CARRUTHERS FARMS BERKSHIRES—Cholera immune. Second annual sale August 2, 1917. Mayfield, Cal.

30 REGISTERED BERKSHIRES—Boars and gilts for sale. J. H. Benedict, Lemoore, Kings county.

HOPLAND STOCK FARM—Registered Berkshires. Prices on application. Hopland, Cal.

REGISTERED BERKSHIRES—Geo. M. York, Modesto, Cal.

Duroc-Jerseys.

FIRST PRIZE HERD—Headed by Uneeda Wonder, 2nd prize boar at Nebraska and a winner at Omaha, 1916. Grandson of Crimson Wonder Again and E. A.'s Queen. Entire offering of Spring pigs will be from 1st or 2nd prize-winners. Inquiry solicited. Haden Smith, Box 84D, Woodland.

REGISTERED DUROC-JERSEYS—Service boars from prize-winning stock are money-makers. They grow faster. New England California Corporation, Ripon, Cal.

CROLEY'S BALANCED HOG FEED—the cheapest feed to fatten hogs. Write Geo. H. Croley Co., Inc., Live Stock Supplies, 631-637 Brannan St., San Francisco.

FOR SALE—2-year-old registered Duroc Boar, B. S.'s Crimson Wonder. A proven breeder. Satisfaction guaranteed. Brother & Ward, Chowchilla, Cal.

RANCHO RUBIUS DUROCS—All sold except a few July and September gilts. Extra good. Write for prices. Elmer Lamb, Ceres, Cal.

DUROC JERSEYS—Sow and boar pigs from Registered Stock. Low prices. Delta Farm and Live Stock Co., Colton, Cal.

REGISTERED DUROCS of guaranteed breeding. All ages. Weaned pigs, \$10. H. E. Bondier & Son, Napa.

HEAVY BONED DUROCS—A few service boars for sale. Ormondale Co., Route 1, Redwood City, Cal.

DUROCS—Defender, Cantic B and Golden Model strain. The big type. Allen Thompson, Tulare.

REGISTERED DUROCS—Crimson Wonder stock. Young stock, both sexes. L. D. Collins, Denair, Cal.

REGISTERED DUROC-JERSEY SWINE—Both sexes. Big-boned type. B. F. Kendall, Hardwick.

WINTON DUROC-JERSEY FARM, Winton, Cal.—High-class pure-bred hogs both sexes, any age.

BIG TYPE DUROCS—Quick maturing. Easy keeping. Frederick M. Johnson, Napa, Cal.

DUROC JERSEYS—Herd boars. E. N.'s Colons and Tulare Boy. Sweepstakes winner at Fresno, 1915. Choice breeding stock. J. P. Walker, Visalia.

DOS HERMANOS REGISTERED DUROCS—Duveneck & Pickersgill, Ukiah, Cal.

DUROC-JERSEY REGISTERED HOGS—River Bend Farm, St. Helena, Cal.

CURTIS DUROCS of either sex at all times. E. C. Curtis, Napa, Cal.

DUROCS—Big type, both sexes for sale. Ed. E. Johnson, Turlock, Cal.

REGISTERED DUROC-JERSEYS—S. S. Southworth, Napa.

Yorkshires.

LARGE YORKSHIRES—Choice spring boars, gilts, and weaned pigs from Champion sow P. I. E., or from breeding of champion boar and sow, Sacramento, 1916. If you see them grow you will like them. Riverina Farms, Paradise Road, Modesto, Cal.

LARGE YORKSHIRES—The ideal hog for the progressive farmer. Young stock for sale. A. L. Tubbs Co., Calistoga, Cal.

Chester Whites.

BILLIKEN HERD OF CHESTERS—The big prize-winners at the 1916 California State Fair. A real utility breed that makes money for its owners. A few young service boars left; twenty young, open gilts that will be bred as may be desired by buyer. Write for the booklet Chester Whites. C. B. Cunningham, Mills, Cal.

REGISTERED IMPROVED CHESTER Whites—Two service boars, one brood sow. Write for price. G. H. DuBois, San Martin, Cal.

REGISTERED IMPROVED CHESTER Whites—Grizzly Bear Ranch, East Auburn, Cal.

Essex.

LITTLE BLACK ESSEX—Service boars and weanlings. Only herd in the State. Limited supply. Yolo Essex Herd, L. W. Millsap, Yolo, Cal.

Hampshires.

BELLA VISTA HAMPSHIRE SWINE—from prize-winning stock. J. W. Henderson, First National Berkeley.

DAIRY CATTLE.

Holsteins.

FOR SALE—From 1 to 100 extra fine, straight, well-marked, light colored, highly bred, registered Holstein heifers from 6 to 18 months old. They are rich in the blood of King of the Pontiacs, Pontiac Korndyke, Hengerveld De Kol, Rag Apple Korndyke 8th, King Segis and other most celebrated sires of the breed. Prices very reasonable. Write Geo. A. Smith, Corcoran, California.

REGISTERED HOLSTEINS—Herd sire King Korndyke Hengerveld Ormsby 7th, 86623. His full sister as Junior 3-year-old made 32.04 lbs. butter in 7 days. The record of his dam and his sire's dam averaged 30.98. George Kounias, Modesto, Cal.

WANTED—One registered Holstein bull and six registered Holstein cows or heifers with calf. Light colored preferred. State price and pedigree. Must be good and price right. Address H. H. Dunning, Marysville, Cal.

REGISTERED HOLSTEINS—Grandsons of King Segis and of world's record cow Creamelle Vale. Will build up the production and value of your herd. Write or call and see them. F. H. Stenzel, San Lorenzo, Cal.

TULARE GUERNSEY AND HOLSTEIN FARM is offering young bulls of both breeds. Excellent breeding. Prices reasonable. W. J. Higdon, Tulare, Cal.

THE MCLOUD RIVER LUMBER CO., McCloud, Cal.—High-class thoroughbred Holstein bulls for sale. Write for prices and pedigrees.

J. H. HARLAN, WOODLAND, CAL.—Breeder of Registered Holsteins. Sold out at present. Watch for announcement on King Valdessa.

FOR SALE—Two registered Holstein cows with A. R. O. records. Write for particulars. J. W. Benoit, Route C, Modesto, Cal.

THE HENDERSON CO.—Breeders and importers. Registered Holsteins. Sacramento Bank Bldg., Sacramento.

BREEDERS OF REGISTERED HOLSTEIN cattle and Berkshire pigs. Whittier State School, Whittier, Cal.

REGISTERED HOLSTEINS—A. W. Morris & Sons, Corp., Importers and Breeders. Woodland, Cal.

CREAMCUT HERD—Registered Holsteins Pontiac bull calves. M. Holdridge, Modesto, Cal.

SUNNYSIDE HERD—Registered Holstein cattle. R. F. Guerin, R. 3, Box 58, Visalia.

REGISTERED HOLSTEIN CATTLE—E. E. Freeman, Route B, Modesto, Cal.

REGISTERED HOLSTEIN BULLS for sale. Sunnybrook Ranch, Willits, Cal.

REGISTERED HOUSTEN BULLS for sale. C. L. Morse, Route B, Modesto, Cal.

BREEDERS OF REGISTERED HOLSTEIN Cattle—McAlister & Sons, Chino, Cal.

REGISTERED HOLSTEIN BULLS, \$50 to \$150. Glorietta Stock Farm, Woodland, Cal.

REGISTERED HOLSTEIN BULLS from A. R. O. dams. B. F. Anderson, Modesto, Cal.

GOTSHALL AND MAGRUDER—Breeders of Registered Holstein-Friesians. Ripon, Cal.

CHOICE HOLSTEIN bulls for sale. No females. Millbrae Dairy, Millbrae, Cal.

REGISTERED HOLSTEIN-FRIESIAN CATTLE—J. M. Campbell, Escalon, Cal.

BREEDER OF HOLSTEIN-FRIESIAN CATTLE—Dr. Ben Stetson, Napa, Cal.

A. E. O. HERD OF HOLSTEINS—Alex. Whaley, Tulare, Calif.

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JERSEY BULLS AND BULL CALVES—Sons and grandsons of 2 and 3-lbs. cows. None better. Cheap for quality. N. H. Locke, Lockeford, Cal.

VENADERA HERD OF JERSEYS offers calves from Register of Merit Cows with official yearly records. Write for list of bulls. Guy H. Miller, Route 1, Modesto, Cal.

BREEDER OF REGISTERED JERSEY Cattle—Duroc Swine. Young stock for sale. W. J. Hackett, Ceres, Cal.

JERSEY BULLS AND HEIFERS from Register of Merit Cows for sale. C. G. McFarland, R. 2, Tulare.

YOUNG REGISTERED JERSEY BULLS Calves at reasonable prices. O. J. Ames, Oakdale.

JERSEY BULLS—Sons of Gertie's Lad and Gertie's Son's Victor. A. A. Jenkins, Tulare, Cal.

REGISTERED JERSEYS—Young bulls and bull calves. T. B. Purvine, Petaluma, Cal.

JERSEY BULLS from Register of Merit cows. C. D. Hayworth, Modesto, Cal.

Guernseys.

PACIFIC GUERNSEY HERD—Cattle selected from best imported and Advanced Register Stock. Now offering choice bulls. C. S. Rasmussen, Lodi, Cal.

EDGEWOOD FARM GUERNSEYS—First in the show ring and in official records. Few animals of either sex for sale. Edgewood Farm, Santee, Cal.

BELLA VISTA GUERNSEYS—Males from A. R. dams. \$100 up. J. W. Henderson, 1st National, Berkeley.

Ayrshires.

AYRSHIRES—Registered; all ages. E. B. McFarland, 412 Claus Spreckels Bldg., San Francisco.

AYRSHIRES—Registered—75 head. All ages. Young stock for sale. Le Baron Estate Co., Valley Ford, Cal.

BEEF CATTLE.

SHORTHORNS—Herd headed by grandson Whitehall Sultan. Calves sired by \$10,000 Prince Imperial for sale. One or a carload for sale. Get our prices before buying. Butte City Ranch, Box P, Butte City, Glenn Co., Cal.

SCOTCH AND SCOTCH-TOPPED SHORTHORNS—We have the largest herd of straight Scotch cows in California. Foundation stock of both sexes for sale; also a choice lot of range bulls. Barco Ranch, Hollister, Cal.

1500 HEAD HIGH GRADE HEREFORDS—Some calves by their side. 300 head fine yearling steers. 200 mixed weaned calves. Sixty head exceptionally well-bred grade Hereford bulls. Ten head of very choice registered Hereford bulls ready for service. G. R. Patton, Porterville.

D. O. LIVELY STOCK FARM, INC., 216 Hobart Bldg., San Francisco, breeders of Hereford cattle. A few choice heifers for sale. We buy and sell livestock on commission. Farm at Mayfield, Cal.

REGISTERED YEARLING SHORTHORN Bulls—Heavy-boned, thick-meated Scotch and Scotch-topped breeding. Ormondale Co., Route 1, Redwood City, Cal.

BREEDERS OF REGISTERED SHORTHORNS—Milk strain. Choice young stock for sale. John Lynch Ranch, Box 321, Petaluma, Cal.

REGISTERED AND UNREGISTERED—Shorthorn bulls for sale. Paicines Ranch Co., 320 Sharon Bldg., San Francisco.

INNISFAIR DAIRY SHORTHORNS—Registered young bulls for sale. Alexander & Kellogg, Suisun, Cal.

HOPLAND STOCK FARM—Registered Shorthorns. Prices on application. Hopland, Cal.

REGISTERED HEREFORDS—H. H. Gable, Diamond G Ranch, Esparto, Cal.

SIMON NEWMAN CO., Breeders of Registered Herefords. Newman, Cal.

GEORGE WATERSON—Breeder registered Herefords. Bishop, Cal.

SHORTHORNS—Carruthers Farm, Mayfield, Cal.

SHORTHORNS—Fair Oaks Ranch, Willits, Cal.

SHEEP AND GOATS.

F. A. MECHAM ESTATE, Petaluma, Cal.—Breeders and Importers of Shropshire, Rambouillet and American Merino, both sexes. Also Red Polled cattle. Take electric car at Petaluma or Santa Rosa for Live Oak Ranch.

SHROPSHIRE—Ewes and Ewe lambs for sale. International winner heads flock. Butte City Ranch, Box P, Butte City, Cal.

KAUPKE BROS., WOODLAND, CAL.—Breeders and Importers of Hampshire sheep.

DORSETS AND ROMNEYS—Dorset ram lambs for sale. John E. Marble, Los Angeles.

BISHOP BROS., SAN RAMON, CAL.—Breeders and importers Shropshire.

CHAS. KIMBLE—Breeder and Importer of Rambouillet. Hanford, Cal.

HORSES AND MULES.

FOR SALE—French Imported Percheron stallion; dapple gray, 8 years old; weight, 2150 lbs. Pedigree can be had by corresponding with C. W. Koch, owner, Suisun, Cal.

FINE YOUNG JACKS and Jennies for sale. Black with white points. Eligible to register. Geo. A. Mast, Madison, Yolo Co., Cal.

REGISTERED SHIRES—Black Hawk Stock Farm, Importers and Breeders, Easton & Ward, Proprietors, Burlingame, Cal.

MISCELLANEOUS.

SAN FRANCISCO LIVESTOCK EXPORT CO., Eugene R. Croley, Manager, solicits foreign orders for purebred registered and merit breeding animals and fowls. California has great diversity of climatic and other conditions that enable us to select animals that have been raised under conditions similar to those of the location for which they are intended. We should be informed regarding these conditions and be allowed ample time to make selections. Nearly all disappointments in buying afar are the result of insufficient information as to conditions or to lack of time for proper selection. Our plan and terms for "raising animals to order" to fit into peculiar foreign conditions is worth investigating. References: Dun or Bradstreets, or San Francisco banks. Office, 319 Underwood Building, 525 Market St., San Francisco.

LIVE STOCK INSURANCE—Registered live stock and farm work horses should be insured. The Hartford Company, strongest in the world, writing live stock. No trouble to answer questions. D. O. Lively, special representative, 215 Hobart Bldg., San Francisco.

CROLEY'S BALANCED DAIRY FEED—the cheap milk producer; and Croley's Calf Meal—the best California calf raiser. Geo. H. Croley Co., Inc., 631-637 Brannan St., San Francisco.

Jim Jeffries, Purebred Stockman.

[Written for Pacific Rural Press.]

The soft-voiced, mild-mannered prize-fighter farmer is laying the foundation for economical record-making by the herd of high-priced typy registered Holsteins accumulated last fall. Jas. J. Jeffries is not new at farming, for he still has over 40 of the grades which had been producing a dairy income on the ranch at Burbank before the purebred venture took shape.

But it is the purebreds in which he takes pride; and, with Ted Cameron in charge, he expects to begin



Raise Your Calves on Blatchford's Calf Meal and Sell the Milk

More calves have been raised on Blatchford's Calf Meal than on all other milk substitutes combined.

100 lbs. makes 100 gallons of milk substitute, costing only one-third as much as milk. Prevents scouring and insures the early maturity of sleek, handsome calves.

It is steam-cooked and no trouble to prepare or use.

Write for Pamphlet "How to Raise Calves Cheaply and Successfully with Little or No Milk." At dealers, or Coulson Poultry & Stock Food Co., Inc., Petaluma.

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Best plow rig. No whiffletrees—no traces. Handiest farm harness.

Indispensable in the orchard with special fitness for all low down work. You can hitch closer to your load, plow and cultivate close to the row and save all the worry to man and team. No weight of whiffletrees for man to lug. Everything clear behind team. Use our outfit and save your trees. Highest endorsement of farmers and fruit growers.

Write now. B. F. BAKER CO., NUMBER (1220) MAIN ST., BURNT HILLS, N. Y.

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a big knee like this, but your horse may have a bunch or bruise on his ankle, hock, stifle, knee or throat.

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will clean it off without laying up the horse. No blister, no hair gone. Concentrated—only a few drops required at an application. \$2 per bottle delivered. Describe your case for special instructions and Book 8 M free. ABSORBINE, JR., the anti-septic liniment for mankind, reduces Painful Swellings, Enlarged Glands, Wens, Bruises, Varicose Veins; allays Pain and inflammation. Price \$1 and \$2 a bottle at druggists or delivered. Made in the U. S. A. by W. F. YOUNG, P.D.F., 86 Temple St., Springfield, Mass.

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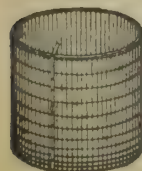
REDWOOD TANKS SILOS

Steel and Wood. Windmills, Frames, and Towers, Water Troughs.

Prices the lowest.

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official record-making along in April. He has 49 purebred Holsteins, of which about 28 are from Wisconsin, while most of the rest were obtained at the Rhoades-McAlister and the Baldwin ranch sales. Most of these are heifers just now coming in. Nearly 40 head are bred to King Segis Pontiac Jannek, which has so many high records in his pedigree and shows such fine type. The big cow Novelty Pauline the 2nd, bred to King Segis Pontiac Jannek, is due to calve not long hence, and will be one of the first to go on official test. She already has a record of some 30 pounds. Fourteen of the Wisconsin heifers are expected to make a great showing.

Much of the stock was thin when received, and the several months of good feed and care are putting the animals into fine condition for record-making.

Economy of Production.—It was long ago that A. W. Morris said it was better to put your capital into stock; and invest in equipment for only cleanliness, convenience, and comfort of the stock. This policy is being followed by Mr. Jeffries in that the buildings and equipment are built for commercial purposes only. The new barn being built for cows on official test is to be simple and comparatively inexpensive.

Concentrates will have to be purchased, for the 105 acres in the ranch are to be used for alfalfa and corn silage only. The corn silage experience of last season was particularly gratifying. A 260-ton cement silo was built to take care of the crop from 22 acres, but it was soon seen that another of the same size must be built. These were filled and on Lincoln's birthday $\frac{3}{4}$ of the silage still remained. Some 60 or 70 of the 105 acres in the ranch are to be in alfalfa this season.

SILAGE NOTES.

Forage placed in the silo keeps at a uniform quality whereas field-cured forage constantly deteriorates.

Silage can be used in summer and fall to supplement or take the place of pasture.

Silage greatly increases the milk flow during the winter season and decreases the cost of production.

In filling the silo with oats or wheat the air in the hollow straw must be driven out by water before the crop will keep.

Clover or alfalfa heat more than any other silage crop and must be given plenty of water.

To obtain the best feed from the silo, feed off from two to four inches each day.

Corn yielding 30 to 40 bushels per acre will make about 7 or 8 tons of silage. Fifty bushels will make ten tons or more.

Since silage is strong in carbohydrates, alfalfa is usually fed with it to balance.

Construct the wall of the silo so that no air or water is admitted. It must be perpendicular on the inside. Make the foundation deep enough and strong enough to prevent the walls from settling or cracking. If the silo is made of concrete the inside wall must be painted every

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For dairymen, farmers, feeders in all sizes and proportions.

For water, wine, oil, vinegar, acids, for storage, mixing, fermenting, pickling.

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For irrigation, power, water supply, in all diameters and for all pressures. Costs less than any other pipe of equal efficiency and endurance. Outlasts any pipe except cast iron.

All Remco products are manufactured to your order from clear, air-dried redwood. Their outstanding features are highest grade material, superior efficiency, maximum durability, true economy.

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Redwood for Durability.



Are Your Cows a BURDEN?

Many cows are a constant drag on their owners when they could just as well be good producers—if properly handled.

Don't forget that your cows can get physically "off color" just as you sometimes do. Watch the milk yield; if it is going down without apparent reason, something is wrong with the cow. Overfeeding is likely to make the condition worse; she needs a medicine that will clear up and strengthen her organs of production.

Kow-Kure is making thousands of new friends among the best dairymen every year, because it supplies this great need. It is a cow medicine, pure and simple—not a food. It has great curative and tonic powers that immediately act upon the digestive and genital organs and enable the cow to thrive on her natural food. Kow-Kure has back of it twenty years of success in making backward cows profitable and in the prevention and cure of Abortion, Barrenness, Retained Afterbirth, Milk Fever, Scouring, Lost Appetite, Bunches and other common ills.

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"The Home Cow Doctor"

This useful book that should be in every farmer's library is yours for the asking. It may be worth hundreds of dollars in a critical moment.

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REDWOOD TANKS — SILOS. Thirty-five years in this business in Stockton.—A 500-gallon tank, \$12.00. A tank 6 ft. x 2 1/2 ft., \$10.00. Other tanks equally cheap. I deal direct with the consumer, saving 10% to 25%. All sizes in stock. Clear dry redwood direct from the mill. Write for price today.

Latest improved machinery. Doors, Windows, Frames, Mouldings.
R. F. WILSON, STOCKTON, CAL.

Raising Poultry for Profit

FEEDING THE BREEDERS.

[Written for Pacific Rural Press by Susan Swaysgood, Pomona.]

Next to having good parent stock, the question of proper feeding is the most important in the whole range of hatching and raising the chicks to a profitable age. I say this with a full knowledge of all the questions that can be hurled against it, because I have proven it—not once, but several times.

If the breeders are fed right, the eggs will stand more abuse in the variations of heat in the incubator, and when hatched the chicks are hardier, healthier, and have a much better hold on life than if hatched from stock that have been improperly fed.

The press, the poultry associations and the State are all busy sending out information to those who are willing to receive it; and knowledge can only be imparted to those who want it and are ready for it.

Quality, Not Quantity.—In feeding hens that are intended as breeders, the one thing to remember is not that you want the greatest number of eggs each hen is capable of laying, but to feed so that every egg she lays will contain a strong germ, not only from the male, but also from the hen. But we must have something more than fertility, or we can never raise many chicks. I have known cases where they had an 80 per cent hatch and did not raise 10 per cent of the chicks. The cause was improper feeding of the breeders, or feeding for "quantity" and neglecting "quality."

A short time ago I told you to select your breeders from the best layers. Now I add to that: don't force those good layers to lay all the eggs they are capable of laying, any more than you would put out all the strength you were capable of to do some job that you would have to repeat day after day for a long season without rest.

Vital Energy.—The people that claim a hen is a machine are correct in one way, and that is, that if she is built right and fed right she can be forced to produce to the limit. But if she lays eggs up to her capacity of production, she can't possibly charge each egg with enough vitality to bring the chick through the stage of danger.

Difference between Fertility and Vitality.—Nature is so generous in all phases of life that she endows every species with an abundance from which to propagate their kind. She allows for all kinds of waste and accidents; but she assumes no responsibility further. The question of fertility is provided for; that of vitality, which gives to each a chance to live, is left to "the survival of the fittest." The wise poultry man, therefore, feeds his breeding hens so that each egg is charged with a fertile germ from the male and great vitality from the hen, plus her own individuality or capacity for laying a certain number of eggs.

How to Feed.—Feed little if any mash of any kind. I prefer none for best results, but a little is sometimes needed to give appetite. Feed

very little green feed and that not of a watery nature—plenty of sprouted oats with sprouts only $\frac{1}{4}$ inch long thrown in clean litter for breakfast, wheat at night thrown in litter, and hens made to dig for it. Sour milk can be given, but not sweet milk; and granulated bone can be fed in the litter like wheat; also gyp or Kaffir corn in small quantities, but no Eastern corn. Plenty of wheat, a little bone, grit, oyster shell and sprouted oats, with sour milk or buttermilk makes an ideal feed for breeders. You may coax the males aside and feed a little fresh meat, but don't feed it to the hens. Hens fed this way will lay all the eggs they can endure with vitality, and they are the only kind that pay to hatch. I don't say starve hens, only "don't force or stimulate them."

QUESTIONS AND ANSWERS.

[Written for Pacific Rural Press by Susan Swaysgood, Pomona.]

Rabbit Growing.—Where can I find out about raising rabbits, and the names of the breeds?—C. L. T., Calistoga.

Ask the public Librarian at Calistoga for such books or write to F. H. Snow, Petaluma Poultry Journal, Petaluma. He sells a rabbit book.

Chicken Ticks in Vacant Premises.—Will small chicken ticks live and infest birds after premises have been vacant? Will moving houses and plowing the ground rid the place of them?—C. B. L.

Vacant premises merely whet the appetite of these pests. Plowing and moving will help. Spraying the houses with a strong solution of crude oil and crude carbolic would be better; but unless you reach every spot under boards and roof, burning the houses would be cheaper and certainly safer.

Chicken Growing.—I am planning to enter the chicken business. Where can I get information on raising and feeding chickens for layers? Can baby chicks be raised successfully with a fireless brooder?—L. D. C.

Send a dollar to Pacific Rural Press for a copy of "California Poultry Practice" which gives full instructions for beginners. Chicks can be raised successfully in fireless brooders, but a little heat at first gives better results.

WHEN TO HATCH FOR BEST RESULTS.

[Written for Pacific Rural Press by Susan Swaysgood, Pomona.]

The first eggs of the season used for hatching may be relied on to produce strong, healthy chicks, but if hatched too early the pullets become over-developed and molt very early, then go into another molt. I have had best results in hatching the heavy breeds from February to last of April and light breeds from March to May. The pullets hatched between those dates will be your most reliable unless you have plenty of shade and water, in which case the successful period will last much longer, as these two things are the only drawbacks to making our hatching season an indefinite one. But if you cannot provide shade,

Go Next Sunday!

California
Orange
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March
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50% Reduction for Round Trip Tickets via Southern Pacific Lines in California between Points Where the One-Way Fare Ranges from 50c to \$5.

Oil Burning Locomotives; No Cinders; No Annoying Smoke; Steam Heated Cars; Automatic Safety Block Signals.

ASK AGENT

Southern Pacific

Write for folder on the "Apache Trail of Arizona"

Canada's Liberal Offer of Wheat Land to Settlers

is open to you—to every farmer or farmer's son who is anxious to establish for himself a happy home and prosperity. Canada's hearty invitation this year is more attractive than ever. Wheat is much higher but her fertile farm land just as cheap, and in the provinces of Manitoba, Saskatchewan and Alberta.

160 Acre Homesteads Are Actually Free to Settlers and Other Land Sold at from \$15 to \$20 Per Acre

The great demand for Canadian Wheat will keep up the price. Where a farmer can get near \$2 for wheat and raise 20 to 45 bushels to the acre he is bound to make money—that's what you can expect in Western Canada. Wonderful yields also of Oats, Barley and Flax. Mixed Farming in Western Canada is fully as profitable an industry as grain raising.

The excellent grasses, full of nutrition, are the only food required either for beef or dairy purposes. Good schools, churches, markets convenient, climate excellent. Military service is not compulsory in Canada but there is an unusual demand for farm labor to replace the many young men who have volunteered for the war. Write for literature and particulars as to reduced railway rates to Supt. of Immigration, Ottawa, Can., or to

GILBERT ROCHE,
Canadian Gov't Exhibit, San Diego, Cal.
Canadian Gov't Agt.

HOPLAND STOCK FARM, POULTRY DEPT.

White Leghorn and White Plymouth Rock Cockerels. White Leghorns and White Rock Baby Chicks hatched from specially selected heavy-laying stock. Prices same as last season. White Leghorns, January and February delivery, \$12.50 per hundred; March, \$10.00; after April \$10.00. Write Plymouth Rocks, \$15.00 per hundred. All F. O. B. Hopland.

San Francisco Office,

1210 Flood Bldg.

pullets hatched after these dates will not develop as well as they should do, consequently will not be so profitable.

The unusual high price of feeds last year did not reduce the output of Petaluma eggs as anticipated. On the contrary, shipments of eggs for 1916 were greater than those of 1915 by 1,420,378 dozen; and poultry showing a gain of 26,427 dozen.

The Postmaster General states that shipments of eggs by parcel post may be insured and sent C. O. D. For some time the impression has been abroad that eggs must take their own chances without insurance.

Your Eggs

Do They Pay Dividends?

They would if you hatched them in a MODEL INCUBATOR and raised the chicks under a Model Hover. These machines are guaranteed result-getters.

Incubators, \$10 to \$48. 100% hatches three consecutive times. Coal-Burning Hover, \$15. International Sanitary Hover (Oil-Burning) \$10.00. Model Machines Have All Latest Improvements. **FREE BOOK** tells all about them and gives profit-making advice of experts.

Model Incubator Company

65 Henry St., Buffalo, N. Y.
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FREE BOOKS ON POULTRY

Dee's Poultry Book

Secrets of Success with Chickens
Common Sense Chicken Talks
Pointers to Amateurs
How to Read Poultry Diseases
GLOBE MILLS, LOS ANGELES, CAL.

Poultry Breeders' Directory.

Rates in this directory, 3c per word each issue, or if carried weekly for one year, 2 1/2 c per word.

EXTRA QUALITY White Leghorn chicks, 12c until March 1st, then 10c. Carefully line bred from MacFarlane, Young, Martin, and Cyphers strains of foundation stock. Eggs, \$1.50 per 15, \$2.50 per 30, \$5.00 per 100, \$50.00 per 1000. Acres of free range connected with our breeding pens, 20,000 feet under roof. Only Jubilee incubators used; disinfected every hatch. Don't save 2c per chick in buying, and lose a dollar per pullet in raising; get the Best and Succeed. Newton Poultry Farm, Dept. 1, Los Gatos, Cal. Catalogue free.

THE J. K. BIGELOW POULTRY RANCH and Hatchery—300 acres devoted to superb vigorous Hoganized White Leghorns. Bigelow chicks are incomparably superior to the product of ordinary commercial hatcheries. Prices same as former seasons—10 cents each till April 1, 9 cents during April and May, and 8 cents thereafter. Shipped on approval; examination before paying. The Bigelow Poultry Ranch, Sonoma, Cal.

BARRED PLYMOUTH ROCKS — COCKERELS—Cockerels—Cockerels—Yes, we have them; also Hens and Pullets—all bred from our Champion Winners at California's leading shows. Also hatching eggs. If it's Barred Rocks you want, get in touch with me right away. Have bred them exclusively for nineteen years. Send for Catalog, Chas. H. Voden, Box 396, Los Gatos, Cal.

ROOFED RANCH CHICKS are good chicks, well hatched from first-class utility breeding stock—money-making egg producers. The prices are right—7c to 14c, depending on breed, month, quantity (dozen to thousands). White, Buff, Brown Leghorns; Black Minorcas; Rhode Island Reds; Barred Rocks for dollars and sense. Send card for circular. Roofed Ranch Poultry and Hatchery, Campbell, Cal.

"FINEST HATCHERY IN THE WORLD"—Baby Chicks, White Leghorns, and Rhode Island Reds, settings, 100's, 1000's, hatched right in our \$60,000.00 brick and concrete hatchery from our quality heavy layers. Reasonable prices. Stock, Hatching Eggs, Pebbleside Poultry Farm and Hatchery, Sunnyvale, California.

WHITE PLYMOUTH ROCK, White Leghorn Incubator Chicks. Breeding stock. Eggs high class. Scientifically bred. Awarded all first prizes, California State Fair 1916. Make your arrangements for 1917 delivery of chicks. Mahajo Farm, P. O. Box 597, Sacramento, Cal.

BABY CHICKS—From large, healthy, vigorous, heavy laying thoroughbred Single-Comb White Leghorns. \$10 per 100; \$2 per 100 when order is booked, and balance 5 days before delivery. I pay the express to your nearest express office. H. A. Schlotthauer, Exeter, Cal.

WHITE LEGHORN AND BROWN LEGHORN day old chicks from healthy, vigorous breeders. Per 100, March \$10.00; April and May, \$9.00. Reduction in larger lots. "Chicks well hatched are half raised." San Jose Hatchery, 373 Meridian Road, San Jose, Cal.

THOROUGHBRED WHITE LEGHORN and Rhode Island Red Chicks. Delivery up to June first. Our stock are strong and vigorous, are practically non-setters and heavy winter egg producers. Brooke Farm, Rancho Del Paso, Office 807 J St., Sacramento.

BABY CHICKS—HATCHING EGGS—White, Buff, Brown Leghorns, B. I. Reds, Barred Rocks. Sturdy chicks from well-mated fowls. Prompt, efficient service. Write for circular. Campbell Poultry Ranch, Campbell, Cal.

200-250 EGG PRIZE LEGHORNS, Rocks, Reds, Wyandottes, Anconas. Eggs. Chicks surprisingly reasonable considering quality \$3-\$10 profit, every hen. Hundreds satisfied customers. M. Beeson, Pasadena, Calif.

BABY CHICKS—We hatch from our own stock of 10,000 vigorous, healthy S. C. White Leghorn hens of heavy laying strain. Write for price list and further particulars. George Brothers, Petaluma, California.

HOGANIZED AND TESTED—220-egg type White Orpingtons and Buttercups. Hatching eggs, chicks and cockerels for sale. Reasonable prices. For particulars, write Mr. Woodhams San Mateo, Cal.

MODEL POULTRY FARM—White Leghorn Specialists. Baby chicks are hatching eggs from heavy-laying stock bred by us for thirteen years. Our prices are right. W. C. Smith, Prop., Corning, Cal.

RICKS JUBILEE HATCHERY, Petaluma, Cal.—White Leghorn and Black Minorca chicks and hatching eggs. Circular "How to Raise and Feed Chicks" Free.

GIVE the Black Minorcas a trial. Guaranteed first class. Eggs, \$6 per hundred, \$1.25 per setting. Chicks, \$12 per hundred. Ezra Mosher, Union Station, Napa.

S. C. RHODE ISLAND REDS—220-egg record in 12 months. Hatching eggs, Chicks, Stock. Also Rose Comb Reds. Wm. Larm, 2914 9th Ave., Fruitvale, Cal.

BABY CHICKS—From select free-range White Leghorn stock. Place orders early. Prices on application. Western Hatchery, Petaluma, Cal. W. S. Waldorf, Prop.

"BRED-TO-LAY" White Leghorn Hatching Eggs—Hoganized utility birds. None finer Order now for February and March. Pine Tree Poultry Farm, Los Gatos, Cal.

S. C. RHODE ISLAND REDS—Pullets and Cockerels. One Black Orpington Cock Eggs from R. I. Reds and Silver Campines. Mrs. R. B. Snauld, Woodland, Cal.

EGGS FOR HATCHING—Blue Orpingtons, Partridge Rocks, Rose Comb Rhode Island Reds, and Silver-Laced Wyandottes. Tribble Nurseries, Elk Grove, Cal.

"EASTMAN'S BRED-TO-LAY" Barred Plymouth Rocks—Chicks and Eggs. We Hoganize and Trampnest. Fairmead Poultry Farm, Fairmead, Cal.

BUFF ORPINGTONS—Barred Rocks, Ringlet strain Eggs \$3. Runner Duck eggs, \$1.50. Glendale, Flaming Ave. San Jose, Cal.

HATCHED CHICKS from Barred Rocks, R. I. Reds, White Leghorns. Good stock. Send for circular. G. L. Hawley, Madera, Cal.

LASHER'S HATCHERY, PETALUMA. Write for booklet, "The Day-Old Chick Business" and price list.

PIGEONS—Choice Carneaux, \$1.50 pair. J. W. Noble, Box 513, Livermore.

"SWELL HEAD" IN TURKEYS.

To the Editor: Can you give me a remedy for "swell head" on turkeys? Large swellings containing water form under the eyes. The fowls eat well but do not gain in weight.—A. A. K., Woodland.

[Answered by Geo. H. Croley.]

[In the absence of any further information contained in the above we believe that these turkeys are not receiving a proper variety of feed. They would hardly eat well if suffering from a serious disease. The system being out of order probably opened the door for a serious cold. We would recommend cleansing the head and eyes with a weak solution of a good disinfectant such as listerine or peroxide of hydrogen and give the turkeys a great variety of grains, including some cracked bone and possibly a very small amount of meat.]

The annual report of the Tulare Co-Operative Association states that during 1916 the Association marketed \$78,000.00 worth of poultry and eggs as against \$53,000.00 during 1915. The average price received for eggs during 1916 was a trifle under 30c a dozen, while in 1915 the average was 26c a dozen. In behalf of its members the association has placed orders for more than 100,000 baby chicks for delivery this spring.

All mash feed for fowls, whether dry or moist, should be salted, using only a very small amount of salt.

ANCONAS—Prize winners everywhere exhibited. 35 first prizes in last two years. Catalogue free. T. E. Silva, 3620 Grove St., Oakland, Cal.

INCUBATORS—For Essex Model Incubators at factory prices, write Geo. H. Croley Co., Inc., Poultry Supplies, 631-637 Brannan St., San Francisco.

BABY CHICKS (White Leghorns)—shipped on approval before remitting. No weak ones charged for. Schellville Hatchery, R. F. D., Sonoma, Cal.

BARRED ROCKS—Grand lot of high-class breeding males and pullets for sale. Satisfaction guaranteed. G. E. Tobin, St. Helena, Cal.

WHITE WYANDOTTES—Blue-ribbon winners. Eggs \$2 to \$5. Chicks, pullets, cockerels. R. W. Stawetski, Route 2, San Jose, Cal.

RHODE ISLAND RED and White Leghorn Eggs and Chicks. Splendid layers, large eggs. Send for circular. Rosedale Ranch, Hayward, Cal.

LARGEST EGG—WHITEST FLESH—Black Minorcas, \$1.50 per setting 15 eggs. Edward A. Hall, R. F. D. 1, Watsonville, Cal.

CHICKENS, DUCKS, GEESSE, GUINEAS, Pea Fowl, Pigeons. Wm. A. French, 545 W. Park St., Stockton, Cal.

THOROUGHBRED WHITE PLYMOUTH ROCK—Eggs, \$1.25 per setting, prepaid. H. G. Nickel, Dinuba, Cal.

WHITE PLYMOUTH ROCKS—Hatching eggs from splendid layers. Mrs. J. B. Tupper, Route A, Ceres, Cal.

RHODE ISLAND REDS—Eggs, \$1.00 for 15. P. M. Cox, Sonoma, Cal.

TURKEYS, DUCKS, AND GEESSE.

MAMMOTH BRONZE TURKEYS—We are now booking orders for Eggs. Guaranteed Eastern Strains of rapid maturity. 1st-prize winners at 1916 State Fair and P. P. I. E. Correspondence solicited. John G. Mee, St. Helena, Cal.

WANTED—Bourbon Red and Mammoth Bronze Turkey Eggs for hatching. Also wanted hens of these breeds. State particulars and prices. O. H. Boye, 126 Post St., San Francisco.

THOROUGHBRED French Rouen Duck Eggs for hatching from winners at San Jose, Oakland and Arizona shows. Also Bourbon Red Turkey eggs. Mrs. Emma W. Miller, Farmington, Cal.

BRONZE TURKEYS—Young Toms for sale. No more eggs till further notice. Free circulars. Albert M. Hart, Clements, Cal.

COLORED MUSCOVY DUCKS—Quiet, quickless. Weigh up to 10 lbs. Good layers. Eggs, \$1.00 for 12. P. M. Cox, Sonoma, Cal.

MAMMOTH BRONZE TURKEYS and Eggs. Booking egg orders now for early Spring delivery. M. M. Keenan, Planada, Cal.

PEKIN DUCK EGGS—\$1.00 per setting. L. D. Collins, Denair, Cal.

Classified Advertisements

MISCELLANEOUS.

FOR SALE—One Johnson Tractor in running order. Good orchard engine. Correspond with Rancho De La Higuera, Yountville, Napa Co., and get particulars.

FOR SALE CHEAP—A 2-unit Sharpless Mechanical Milk in good condition. Mrs. Lena D. Snyder, Thermal, Cal.

GROCERIES WHOLESALE—Our prices are the lowest and our quality the highest. Dollars saved on every order. Freight paid within 100 miles. Send for catalog. Fresno and Company, Mail Order Grocers, 1264 Devadero street, San Francisco.

EVERY SIZE BROUGHT IRON WATER Pipe and screw casing water pipe, guaranteed as good as new. Prices right. Send for catalogue. We beat no one; everybody gets a Square Deal. Weissbaum Pipe Works 160 Eleventh St., San Francisco.

SECOND HAND WATER PIPE and Screw Casing. New threads and couplings dipped in hot asphaltum. All guaranteed. Send us your inquiry. Scheeter Pipe Works, 306-8 Howard St., San Francisco.

AT LAST THE PERFECT SILO—THE Star Round: No hoops. No bolts. No experiments. Any one can erect. Close price. Address: D. O. Lively, 215 Hobart Bldg., San Francisco.

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ASK FOR SNOW'S GRAFTING WAX—In use all over the State. If your grocer does not keep it, send to D. A. Snow, R. D., Box 548, San Jose, Cal.

TO REDUCE THE HIGH COST OF LIVING send for our Wholesaler to Consumer Catalog. Smith's Cash Store, 106 Clay St., San Francisco.

FOR RENT—By day or contract, one 75 H. P. Best Tractor engine, with moldboard or disc plow equipment. Box 192, San Leandro.

SEEDS, PLANTS AND TREES.

FREE 1917 PLANTING GUIDE and Pure Seed Book! 96 pages handsomely illustrated in many colors. Describes latest, best varieties vegetables, flowers, field crops, fruits, shrubbery, etc. A dictionary on gardening! Flower lover's delight! Field crop guide! An orchardist's manual! Berry-grower's book! A postal gets it. Don't buy seeds until you read it. Galloway Bros. & Co., Pure Seed Specialists, Waterloo, Iowa.

ALFALFA SEED—Common variety and Smooth Peruvian, good quality, excellent color, high germination test, grown in Arizona under ideal conditions. Do not buy until you have compared my samples and prices with seed others offer. E. F. Sanguinetti, Yuma, Arizona.

CITRUS TREES—all leading varieties. Large line Lisbon and Villa Franca Lemon, and Washington Navel Orange Trees. First-class stock and clean. Special prices to dealers or to growers in carload lots. Randall Brothers' Nurseries, Whittier, Cal.

ALFALFA SEED—There is a difference in the varieties and strains of alfalfa seed. Send your address for sample and our low price, and we will tell you just how our seed is selected—and why. Bomberger Seed Co., Modesto, Cal.

STRICTLY FANCY SEEDS—Alfalfa, Scarified Sweet Clover, Red Clover, Timothy, Ryegrass, etc. Free Bulletin—"Sweet Clover in the Northwest." Write for samples and prices. Ralph Waldo Elden, Central Point, Oregon.

WALNUT GRAFTING WOOD—Genuine Franquette. Same strain as Vrooman orchard was planted from. Willson's Wonder, grown by originator. F. C. Willson, Encinal Nurseries, Sunnyvale, Santa Clara Co., Cal.

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SEND NINETY cents and receive postpaid four pairs women's hosiery, guaranteed four months, black or tan. Best value obtainable anywhere. Albrin Company, San Francisco.

NEW VARIETIES Sweet Potato plants—Nancy Hall Porto Rico Yam Early Triumph \$5.00 per thousand, 75c per hundred. Write for circular. J. Braxwell, Lindsay, Cal.

QUALITY TREES—Seedlings, 5c. Prunes 10c. Walnuts, 30c. Cash Nurseries & Seed Store, Sebastopol, Cal.

RHUBARB ROOTS—Wagner's Giant Crimson, \$2 per hundred; 5c each. Currier Bulb Co., Seabright, Cal.

FOR SALE—Walnut Trees. Magnolia Nurseries, Whittier, Cal.

WANTED.

WANTED—Young men and women to attend the Western Normal Courses—Normal and Academic. The Normal Course gives an adequate preparation for teaching, at a great saving in time and money. Academic course gives practical finish to education. Write for Bulletin "A," Western Normal, 524 E. Market St., Stockton, Cal.

WANTED—Experienced and capable milkers, capable of taking charge of fine two-string herd of grade Holsteins. Must be a worker and furnish satisfactory recommendations. A good place for a good man. Address "B," P. O. Box 755, Sacramento, Cal.

WANTED—Salesman owning auto to call on farmers to sell autos and other farm requirements. Address D. O. Lively, 215 Hobart Bldg., San Francisco.

WANTED TO HEAR from owner of good ranch for sale. Send cash price and description. D. F. Bush, Minneapolis, Minn.

COUNTRY LANDS.

HUMBOLDT STOCK RANCHES—\$10.00: Safe Sheep Range of 5000 acres on State Highway. Northbound controlling coyotes; three pack hounds. \$10.00: 5700 acres Cattle Ranch near Railroad. Joins Forest Reserve. 500 acres tillable. Good soil. \$4,000.00: Half cash. Worth it. Will Perry Ranch, about 480 acres, with tools. Alderpoint. See owner. Bad health. C. E. Robertson, 105 Montgomery Street, S. F.

FOR SALE—948-acre stock ranch in Napa county. Price, \$17,000 net. All modern improvements. Living creek. 125 acres hay, grain and alfalfa land. Free range adjoining 175 head of cattle can be purchased if desired. Liberal terms. Owner, Box 363, Napa, Cal.

FREE GOVERNMENT LANDS—Our official 112 page book "Vacant Government Lands" lists and describes every acre in every county in U. S. Tells location, place to apply, how secured free. 1917 Diagrams and Tables, new laws, lists, etc. Price 25 cents postpaid. Webb Publishing Co., Dept. 30, St. Paul, Minn.

WANTED TO RENT—Alfalfa ranch. Dairyman with small herd registered Holsteins wants to rent 40 acres of good alfalfa. Don't answer unless you have a good stand and good water. References furnished. Address, Box 470, Pacific Rural Press.

LAKE COUNTY RANCH for sale. 21 acres, 19 acres in alfalfa, family orchard, large new barn and hog houses. Price, \$5,250, \$3,000 cash, balance terms. Box 521 Ukiah, Cal.

FOR SALE CHEAP—320 acres good level land in Klamath County, Oregon. For information, address owner, W. H. Johnson, 22 Maple Ave., Watsonville, Cal.

SALE OR RENT—Paying apple orchard. Crop or cash rent to right person. Sale cash terms. H. C. Rawlins, Willows, Cal.

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30x3	7.65	1.95	2.20
30x3 1/2	9.85	2.20	2.45
31x3 1/2	10.40	2.25	2.50
32x3 1/2	10.95	2.35	2.55
31x3 1/2	12.05	2.40	2.65
34x3 1/2	13.25	2.50	2.90
30x4	14.50	2.95	3.25
31x4	15.25	3.00	3.35
32x4	15.45	3.10	3.45
33x4	16.15	3.25	3.55
34x4	16.45	3.30	3.70
35x4	17.20	3.35	3.80
36x4	17.45	3.45	3.90
34x4 1/2	22.25	4.05	4.50
35x4 1/2	22.95	4.15	4.55
36x4 1/2	23.35	4.30	4.75
37x4 1/2	24.10	4.35	4.85
35x5	26.00	4.95	5.45
36x5	26.35	5.15	5.60
37x5	27.40	5.20	5.70

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C. L. McGEE,
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Mrs. Best's Letter.

FURNITURE FASHION SHOW.

(Continued.)

My Dear Friends: Last week I told you of the Furniture Fashion Show and this week I am going to continue. Several bedrooms were portrayed in various shop windows and all were interesting. Some had matting covering the floor with small rugs carrying out the color idea, while others had a large central rug on a bare floor. Rugs for the bedroom are very pretty now. Rag rugs in dainty colors are popular for the small rug, and as they can be washed, they are very hygienic. Rugs are also woven into big rugs with a fancy border of flowers, which gives it a festive air. Other pretty bedroom rugs are of Brussels in soft shades with pretty borders of contrasting colors or dainty all-over patterns.

The enameled bed of simple design is popular now. It is seen in plain cream and gray as well as decorated and with cane inserts.

Several different designs for bed covers were shown that could be made at home and would wonderfully dress up a room. One was of simple dimity that filled the top of the bed having sides gathered and applied by a small heading that hung six inches from the floor. A bolster was covered smoothly with the same material and finished the bed. Other covers were made in the same manner, but were more elaborate. One was of net with two strips of applique 12 inches in from the edge and corresponding strips on the bolster. One was of sheer linen, embroidered simply and another was of the popular filet lace squares combined with net, but the squares were not arranged in alternate strips as is so popular, but formed a square in the middle of the cover. The bolster carried out the same idea.

For a girl's room, if you wish to use cretonne freely, a design that is easily cut out is pretty applied on to a white cover. Some girls even have the whole cover of cretonne. Such a cover, which is removed at night, does much to freshen and change a room.

The old-fashioned chest of drawers is modish now in the bedroom, and yours is not the right color, try painting the dresser, chest, bed and chairs all the same color, finishing by enameling them. That will give you the best background for refurbishing your room. For instance, if you have a gray wall, paint your furniture gray — fashionably called French gray — then have chintzes or cretonnes at your windows that are gay with rose. Make a rose cover for your couch, if you have one. Cut out patterns from the cretonne to applique on to sofa pillows of black, gray or neutral backgrounds. Articles on your dresser may stand a touch of cretonne too. Hunt up a candlestick for the chest of drawers, place in it a pink candle and you will have added a finishing touch to a vogue-like room. Yellow and black, with white furniture, provides another color scheme and bright blue and pink are very effective in combination.

But be sure you eliminate bric-a-brac. Put away things that are not

THE HOME CIRCLE

planned for a scheme, or chaos will result. These new color schemes in their brightness demand a neutral background. Use the primary colors sparingly and with judgment.

The bath rooms now are equipped with white tile floors, pedestal wash bowls, hand showers, glass rods with nickel fixtures for towels and white bath seats that fit on the sides of the tubs with white rubber-covered hooks.

The out-of-doors calls in the spring time and although it is too early to move into the garden, the shops show gay things for a glassed-in porch. The brightly painted furniture is now in vogue and one shop window was finished in a canary yellow set of furniture that had black and green figures decorating it. There was a comfortable Morris chair and low table with the current magazines and reading lamp on it. There were squat rockers and prim little stiff-backed chairs. There was also an old-fashioned sewing table and a low table holding a gaily painted glass bowl in which gold fish swam contentedly about. And there was also the gay bird cage, standing on a pedestal seven feet tall.

There was a tea wagon too, and one that had a new idea. The space between the upper and lower trays was enclosed and when opened disclosed hooks for cups. This space affords a fine place to keep sandwiches or cakes from curious flies or interested children. In front of a long low couch, decorated by bright pillows, was a darling footstool of the same painted wood.

This was an altogether interesting place. It looked homelike, and as though it would be enjoyed by every member of the family.

Rosabella Best.

MACARONI RECIPES.

The Globe Mills of Los Angeles recently published a booklet giving many prize recipes for the use of macaroni. Many of them can now be used to advantage, in making this dish take the place of potatoes or other vegetables at dinner. Here are several practical dishes for farm wives to try:

Baked Macaroni Pudding.—Boil 20 minutes in quickly boiling water 1½ cups macaroni, strain and turn into deep earthen pie dish well buttered, add 3 eggs well beaten with 1 tablespoon sugar, grated rind ½ lemon, 1 pint new milk, stir well, shake little nutmeg on top, bake in moderate oven one-half hour.

Italian Spaghetti.—Half-box spaghetti, 2 tablespoons each chopped onion, chopped, fresh, green, sweet pepper, 2 ounces butter, 1 pint

cooked and strained tomato, 4 ounces grated cheese, 1 teaspoon each salt and sugar, ½ teaspoon grated nutmeg, dash cayenne pepper. Break spaghetti into pieces, put into 2 quarts boiling water, add 1 tablespoon salt, boil 25 to 30 minutes, stirring occasionally to prevent burning, drain and leave in cold water 15 minutes. Drain, place in dish and pour over it following dressing: Melt butter in saucepan, add onion and pepper, cook 6 minutes, add flour and tomato, stir until it boils, add cheese, seasoning and mix together thoroughly. Pour over spaghetti, place in oven few minutes and serve. May be prepared beforehand and heated quickly in oven when needed.

Macaroni and Salmon.—Boil one-third package macaroni in slightly salted water, when tender drain and throw into cold water. When cold, cut into small pieces, add 1 can red salmon, seasoning with pepper or paprika. Make white sauce with 1 tablespoon each melted butter and flour, stirring in 1¼ cups milk. Put into baking dish alternate layers of macaroni, salmon and white sauce, put buttered bread crumbs on top, bake 20 minutes or half hour. May be filled into ramekins and then baked.

AN ENGAGEMENT TABLE.

Anyone interested in engagement parties could not help but be enthusiastic over the attractive table for an engagement luncheon shown at one of the silver stores recently. The table was square and covered with white linen and set with the necessary china and silver.

At each of the four corners were big, fluffy bows of pink tulle from which extended tulle streamers of pink up over the table until they met in the center forming a big bow over two suspended white doves.

From the doves were hung streamers of blue and pink artificial forget-me-nots to the goblets of each guest. Narrow blue velvet, wired to make it stiff, was made into perky bows at the end of the streamers and also bows were carefully placed within the tulle bows on the corners. In the center of the table was one of the new flat bowls in bright blue holding pink rose buds and a china butterfly was perched on the rim of the bowl.

The place cards were pink hearts on which stood kewpie dolls dressed in bright taffeta and tulle.

The dishes were decorated in blue with the service plate having a pink band that carried out the color scheme. The table was dainty in coloring and really simple in execution if the details were finished before putting it together.

CARE OF THE SKIN.

As the spring comes in with its winds and more being out-of-doors, the skin must have more attention, or it will show the effect of neglect. Too much contact with the sun is bad for the complexion, and should be counteracted by the use of cold creams or softening fluids. The use of powder will sometimes prevent sunburn, and is always an improvement to an oily skin. It should be applied, however, in a bright light, in front of a mirror, and not be hastily dabbed on with perhaps a heavy coating left on the eyelashes, or a well-defined line between face and neck.

Floral Department.

[By Geo. N. Tyler.]

TIMELY SUGGESTIONS.

Owing to the heavy rains there is very little to do in the garden. After the soil has dried out a little use the hoe and rake, and cultivate and rake till you have a fine surface. It conserves the moisture and prevents the baking of the soil. You can plant out carnation plants now, also Watsonias and gladioli, also a large number of the hardy annuals and perennials. A few bulbs can still be planted.

I would advise my readers to grow single and pompon chrysanthemums. They require very little care with the exception of abundance of water in the hot summer months. Plant them as soon as you can get the plants; divisions are best, but early struck cuttings are almost as good. They require rich soil and after they are established should be pinched out to make them branch and keep on pinching out till July, then let them make their flower shoots. They require full sun and shelter from heavy winds, also they should have one good stake to tie to. Eighteen inches apart is close enough to plant them. They should make from thirty to fifty flower shoots, and in the fall from October on give a wealth of bloom for a month or six weeks. They are fine for cut flowers. I have kept them for a month in the living room of a house.

It is too early yet to start with the large chrysanthemums. I do not start propagating till April 1st unless I am short of stock of any particular kind. Do not under any consideration plant divisions if you want large flowers.

Fresias that were started in August are now in full bloom. If in pots put them in a cool place and it will greatly prolong the blooming period. They require abundance of water at the root, and should not be allowed to form seed pods.

Your house plants from now on will require more water and the leaves should be wet at least once a day on bright days. And do not from now on let plants have the direct rays of the sun. Let the sunlight be filtered through lace curtains or half-curtains. It is also time to repot those that need it. If in large pots, two inches of top soil can be removed and fresh soil be added with a little bone mixed with it. You can now start hanging baskets.

Many scientifically arranged kitchens are having most of the utensils displayed on shelves easy of access.

There Is No Excuse For Ill Health Except Accident

A rational, simple, and natural way of conquering CHRONIC DISORDERS. It is a Certain, Definite and Positive method. NEW SYSTEM of individual treatment —WITHOUT DRUGS OR SURGERY! A postal card with bring this wonderfully interesting book FREE. Write today to Ward-Auders Sanitarium, General Offices, 509 Central Bank Building, Oakland, Cal.

SEEDS AND WORDS.

I dropped a seed beside a path,
And went my busy way,
Till chance or fate—I say not
which—

Led me, one summer day,
Along the self-same path; and lo!
A flower blooming there,
As fair as eye hath looked upon,
And sweet as it was fair.

I dropped a sympathetic word,
Nor stayed to watch it grow,
For little tending's needed, when
The seed is good we sow;
But once I met the man again,
And by the glad some way
He took my hand I knew I sowed
The best of seed that day.

—Selected.

TELL THE TRUTH.

The clock stood on the kitchen shelf in the old farmhouse, where it had stood for many a year. It had always been a good clock until the summer the farmer and his wife adopted Sarah Jane and she came to live with them and be their little girl Sally.

"If we call her Sally," said the farmer's wife, "she may forget that she was nobody's little girl all her life until we went to the Orphans' Home, and loved her!"

The old clock, perhaps because it was filled with wonder, stopped ticking the minute that Sally stepped into the kitchen and with hands behind her gazed upon it and said, "What a beautiful clock!"

"Well, well!" exclaimed the farmer, "I do believe we were thinking so much about our little girl we forgot to wind the clock!" And then he wound it and wound it, and the clock said, "Tick-tock, tick-tock, tick-tock," solemnly, as if it were a church clock and had always done exactly right.

The next time the old clock stopped was the day Sally stood before it and said, "O Clock, why do you send me to bed so early in the beautiful country? Mother says, 'Eight o'clock is bedtime, Sally,' and almost right after supper, it seems to me, you say, 'One, two, three, four, five, six, seven, eight o'clock,' and then, away I go to bed!"

That night, after the supper dishes were washed and put away, the old clock hushed its tickings and would not let its short hand point to V three I's—eight, and would not allow its long hand to point straight up. Instead, the long hand pointed straight down, so that when the farmer's wife thought it was Sally's bedtime and stepped to the kitchen door to look at the clock, she was surprised.

"Why," said she, "the clock says half-past seven! You may sit up half an hour longer, Sally." Such a joyful time Sally had that evening, singing on the porch and watching the golden sunset!

In half an hour, when mother again stepped to the kitchen door and the clock would not tell the time as it should, but still said, "Half-past seven," mother spoke severely. "Clock," said she, "you are not doing right! Father, please look at your watch and then make our old clock tell the truth!"

After Sally kissed her father and her mother good-night that evening, and before she went skipping up the stairs to bed, she threw a kiss to the old clock. After that, the clock behaved worse than ever. It stopped

ticking any time it chose to keep still and hold its hands.

Then came the Friday night after school when Sally looked up at the old clock and said, with tears in her eyes, "Old Clock, Old Clock, what do you think? Melissy Brown is going to have a party tomorrow, a come-in-the-morning-and-stay-all-day party, and I never went even to a short one in my life, because I used to be an orphan. I want to go. But Old Clock, Old Clock, mother is going to take me to the city tomorrow morning on the nine-thirty train, to buy me warm underwear and a new school coat, and so I cannot go to the party. Old Clock, Old Clock, I'd rather shiver!"

"Tick-tock, tick-tock, tick-tock," answered the clock in staid and mournful tick-tocks.

Next morning the farmer's wife arose early and worked and worked, to get the Saturday churning and baking and cleaning done, and dessert for Sunday dinner, before train-time. Once in a while she looked up at the old clock and listened to its solemn "tick-tock, tick-tock, tick-tock," and at half-past eight she called the hired man and said, "You may hitch up now and drive Sally and me to the station."

"Aren't you a bit late in starting?" inquired the hired man.

"No," answered the farmer's wife, "there is plenty of time. Come, Sally, let me see if your shoes are black and your fingernails clean."

But when Sally and her mother reached the station they learned that the train on which they expected to go to the city had been gone seventeen minutes by the honest station clock.

"That old clock of ours was slow!" exclaimed the farmer's wife, and she was so provoked! Then she smiled. "But my little girl shall go to Melissy's party, after all," said she, and she kissed Sally.

There was a change in the weather that day, and it grew so cold by night that when little Sally came home, she was wrapped in Melissy Brown's mother's blue-and-green plaid shawl, and she had to be so careful not to let it drag—had to hold it tight—just so!

"I had a beautiful day," said Sally to the kitchen clock that night, "but really, Old Clock, Old Clock, I do need that warm, new underwear! Mother is right and you were wrong this morning not to tell what was true about the time."

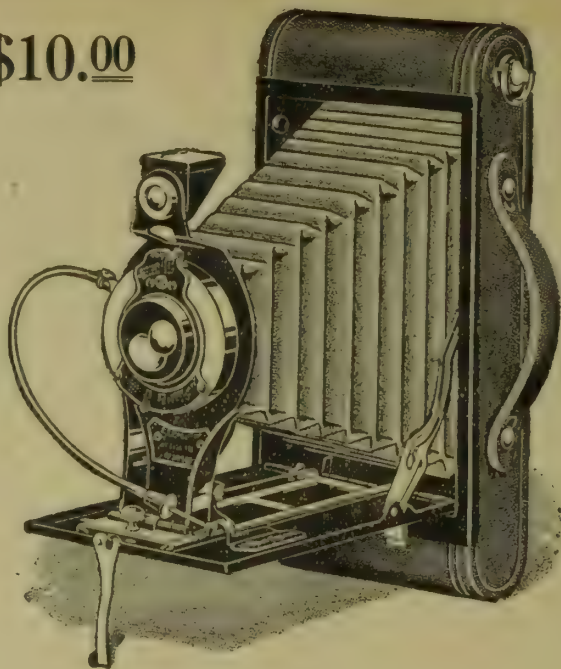
After that, the old clock would not tick a tick. The next Saturday, when Sally and her mother went to the city for warm, new underwear, the farmer went too, and tenderly carried the old clock to a jeweler to find out what was wrong with its conscience; and that kind jeweler knew how to make it tell the truth ever after.

"Old Clock, Old Clock," said happy little Sally that night, "mother loves me and mother loves you, and father loves you and father loves me. I think, after this, that you and I had better be good and always tell what's true."

Sure enough, they did, which may be the reason that in that old farmhouse there lives to this day such a happy family.—Frances Margaret Fox.

Truth is never shame-faced.

\$10.00



The New Model 3A BROWNIE

Here is a new camera for pictures of the post card size, (3¼ x 5½ inches). Manufactured under experienced superintendents by skilled mechanics with whom honest workmanship has become a habit, it has quality. Designed by the men who have helped to simplify photography, manufactured in the largest, best equipped and best organized camera factory in the world it has been possible, through quantity production combined with high efficiency, to produce this camera of real quality at a low price.

It has the new Brownie Ball Bearing shutter, with cable release, having both time and "bulb" actions and snap-shot speeds of 1/25, 1/50 and 1/100 of a second and is equipped with Kodak Autotime Scale as an aid to correct exposure.

Loads in daylight with ten, six or two exposure cartridges, has automatic focusing lock, reversible finder, two tripod sockets, genuine leather bellows, is constructed of metal throughout and is covered with a durable and attractive imitation leather of the finest quality. With its black enamel fittings it is a handsome as well as an efficient camera.

It is autographic, of course, all of the folding Brownies and folding Kodaks now incorporate this valuable feature by which you can date and title each negative *at the time of exposure*.

THE PRICE.

No. 3A Folding Autographic Brownie, meniscus achromatic lens, \$10.00
Do., with Rapid Rectilinear lens, 12.00

All Dealers'.

EASTMAN KODAK COMPANY,

476 State Street, ROCHESTER, N. Y.

HOUSEHOLD HELPS.

A putty knife is useful for many purposes in the kitchen—its wide blade and short handle make it convenient.

A piece of netting basted over a hole makes a good foundation for smooth darning.

Once a week put a handful of salt soda down the drain pipes, then pour several quarts of boiling water down them. This will cut the grease and keep the pipes clean.

*Soak cabbage, cauliflower and artichokes in salted water for a short time, then rinse thoroughly. This removes insects found inside.

I have learned that it is better to mend most garments before washing. The rent is apt to become larger by washing; then, too, in mending fine garments where you wish to conceal the mending it makes a difference in the looks. After being washed the mending "blends in" with the other



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threads of the garments and after being ironed is not so noticeable. It is also hard to mend an ironed garment without giving it a mussy, soiled appearance.—Mrs. J. G., Selma.

Good Health.

[By H. E. Pastor, M. D.]

An Achievement in Sanitation.

The Pacific Rural Press has received an interesting and important circular letter from the California State Board of Health, which we take pleasure in reproducing as far as space limits permit. It may not be commonly known, though it is so generally regarded by the medical profession, that the typhoid fever death rate of any community is a pretty fair index of the sanitary conditions prevalent in that community; and the reduction of typhoid fever mortality in this State from 13.6 per 100,000 population in 1914 to 7.1 per 1000 in 1916 is a highly creditable achievement for our State Health Board, which has much to contend against, here as elsewhere, in the way of ignorance, prejudice, and indifference, and as a rule inadequate funds for prosecuting its work. The circular says, in part:

In 1915 the California State Board of Health declared its intention to reduce the typhoid fever death rate from 13.6 per 100,000 population (the rate for 1914) to 9.6 per 100,000 population in 1918. However, this declaration was nearly fulfilled in the year 1915, when the rate was reduced 9.7 per 100,000 population. And now, the typhoid death rate for 1916 is 7.1 per 100,000 population, lower than the Board hoped it would be in 1918. If the measures employed in typhoid fever control are continued, and if the same co-operation of the people of California is received, the Board hopes to reduce the typhoid death rate to a point below 5.0 per 100,000 population in 1918. This may be accomplished through the prevention of sewage pollution of public and private water

supplies; the insurance of safe milk supplies through the pasteurization and inspection provisions of the State milk law; investigation of outbreaks of typhoid fever, determining and removing their sources; manufacture and distribution to physicians of typhoid vaccine; inspection of hotels, eating places, summer resorts and surroundings, and correcting insanitary conditions that may be present. To secure results, it is necessary that the California State Board of Health shall have the active support of health officers, physicians and citizens. All of the common rules of sanitation, particularly as related to sewage disposal, water and milk supplies, must be rigidly observed.

Syrup of Figs.

Editor Home Dept.: Will you kindly give me formula for making "Syrup of Figs" for purgative purposes?—E. J. H., Vacaville.

Syrup of Figs is a proprietary remedy which makes an appeal to the popular fancy that the fig possesses peculiarly valuable properties as a laxative. It is true that figs have mild laxative powers, but it is not true that "Syrup of Figs" owes its laxative effects to its fig content. The purging action of this nostrum depends upon the senna contained, in the form of an elixir, said to be about 25 per cent of the whole.

Barring its excessively disagreeable taste and odor, senna is a good laxative, and, in common with castor oil, is said to leave no constipation as an after effect—a serious drawback to most cathartics. The nearest official preparation to "Syrup of Figs" is Syrup of Senna, which has of senna 33 parts, sugar 60, alcohol 4 ("Syrup of Figs" contains 6 per cent alcohol), oil of coriander and water enough to make 100 parts. Flavoring with the juice of stewed figs would not be objectionable. The dose is from one-half to two teaspoonfuls.

It may also be said, incidentally, that senna is like castor oil in another particular—given to a nursing mother her milk acquires purgative properties.

Thinks It Is Cowpox.

Editor Health Dept.: We had a cow that I think had cowpox. As I do the milking I got the disease. I have consulted a doctor, also treated it myself, but do not get rid of the trouble. Can you tell me what to do?—M. R., Visalia, Cal.

If you got what you think you got, you were simply vaccinated cheaply and effectively. Cowpox, or vaccinia, is a disease occurring naturally in the cow and some other animals. It is communicated to the hands of the milker by inoculation. This particular form of inoculation is what we call vaccination, which protects the person so inoculated against the contagion of smallpox. Cowpox is a self-limited disease—that is to say, it runs a well-defined course, and ends. Aside from the fever and typical eruption, there is usually little constitutional disturbance, and the scab or scabs that form fall off in about three weeks. If the symptoms you complain of continue beyond this period you have not correctly diagnosed your case, and it would be well for you to consult a first-class physician in your neighborhood, as long-distance treatment is unsatisfactory.



"Young man, the best tonic for you is the right kind of food. I suggest for Breakfast

Ghirardelli's Ground Chocolate

It's easily assimilated — it's extraordinarily nutritious — and it is supremely delicious."

It comes PROTECTED—as all chocolate should—in ½-lb., 1-lb. and 3-lb. hermetically sealed cans.



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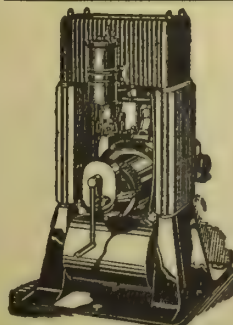
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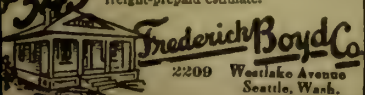
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SAN FRANCISCO.

San Francisco, February 28, 1917.

WHEAT.

Nearly all grades of wheat have been advanced here this past week, with northern varieties leading in the upward movement. The Australian stock landed here the preceding week is reported to have brought \$3 per cental, a figure that will not encourage heavy future shipments. Northern Bluestem and Red were again offered here and sold very readily.

Sonora wheat	.....	\$2.75@2.80
Northern club	.....	None offered
Calif. club, ctl.	.....	2.60@2.70
Northern Bluestem	.....	\$2.95@2.97 1/2
Northern Red	.....	2.95@2.97 1/2

BARLEY.

Heavier spot trading, especially in seed stock, has firmed up local prices this week and fancy seed is bringing as high as \$2.75 per cental.

Seed, ctl.	.....	\$2.50@2.75
Shipping, ctl.	.....	2.35@2.40
Brewing	.....	Nominal
Choice feed, ctl.	.....	2.25@2.30

OATS.

Fresh arrivals of Texas feed stock brought somewhat easier prices on this offering during the week and white oats continue hard to move. The sale of one good sized lot for export to Central America featured this week's market.

Red feed	.....	\$1.85@2.00
White	.....	2.02 1/2@2.05
Red seed (Texas)	.....	2.90@3.00

CORN.

More plentiful supplies of Eastern corn were responsible for easier quotations on California sacked this week and the top price on general trading has been \$2.22 1/2 per cental.

[First-hand prices on strictly first-class grain, San Francisco.]

Eastern Yellow, ctl., bulk	.....	\$2.15@2.22 1/2
California, sacked	.....	2.20@2.22 1/2
Milo Maize	.....	2.00@2.20
Egyptian	.....	2.25@2.50

BEANS.

Everything in the bean list has advanced during the past week and still further advances are to be expected. The East has been the heaviest buyer here although a good export business is reported. A few Lady Washingtons were sent in this week by Modesto growers and the holders realized more than \$1000 for a hundred-sack lot. Interior reports indicate that very heavy planting will be the order this year. Monterey county alone reports 16,000 acres to be planted to beans this year. Local dealers all agree that the maintenance of the present demand will mean further sharp gains, especially on Lady Washingtons, Limas, large whites and horse beans. Blackeyes, about the last variety to join the upward movement, have advanced twice this week.

[Recleaned, f. o. b. San Francisco.]		
Bayos, per ctl.	.....	\$ 8.90@8.25
Blackeyes	.....	6.50@6.85
Cranberry beans	.....	9.00@9.25
Horse beans	.....	5.00@6.00
Small Whites (south)	.....	11.75@12.00
Large Whites	.....	11.50@11.75
Pinks	.....	8.25@8.35
Limas (south, recleaned)	.....	11.75@12.00
Red Kidney	.....	11.75@12.00
Mexican Reds	.....	8.90
Tepary beans	.....	8.50@8.75
Garbanzas	.....	4.25@4.50

HAY.

Receipts of hay for the past week represented all grades of hay and were about 300 tons short of the previous week's total. However, the rains throughout the Northern part of the State have given a much easier tone to the market and prices were without change. Stock hay is scarcer here than is fancy wheat hay, but this is nullified by the drop in the demand for the former, as a result of the showers. It is probable that the rains will result in the placing on the market of the hay which has been held for insurance against a dry year, and just how big a drop in prices may be expected will be determined by the amounts held back. The export trade continues fairly good. Straw is scarce and may advance. Some rice straw of good quality was received this last week.

[Price per ton, carlots, San Francisco.]		
Wheat, No. 1	.....	\$20.00@21.50
No. 2	.....	18.00@20.00
Tame oats	.....	18.00@22.00
Wild oats	.....	17.00@22.00
Barley	.....	17.00@20.00
Alfalfa	.....	16.00@20.00
Stock hay	.....	16.00@17.00
Straw, per bale	.....	.90@1.10

FEEDSTUFFS.

More feedstuff prices were without change during the past week as trading was very slow. The bulk of the local sales came from out-of-State sources and business of this type was responsible for small advances on cracked corn, middlings and rolled barley.

[Per ton, San Francisco.]		
Best Pulp, per ton	.....	\$20.00@21.00
Alfalfa meal, per ton	.....	23.00@24.00
Brn per ton	.....	20.00@21.00
Oil Cake	.....	42.50@45.00
Cocunut cake or meal	.....	31.00@32.00
Cracked corn	.....	48.50@49.50
Middlings	.....	39.50@46.00
Rolls Barley	.....	45.00@47.00
Tankage	.....	47.00@48.00
Rolls oats	.....	44.00@45.00
Rice middlings	.....	31.00@33.00

POTATOES, ONIONS, ETC.

Potatoes continue to hold the center of market interest, the heavy buying of Eastern parties in this market being responsible for considerable activity. Delta stock is bringing as high as \$4.25 here while some special brands are being held at \$4.50. The further offerings of Japanese onions here, and

THE MARKET REPORTS

Figures Given Are Independent and Reliable.
Prices Quoted as Paid to Producers.

a let-up in the Eastern demand, has brought a drop to \$9.50@10.00 per cental on yellows, although it is hardly expected that this low level will be maintained.

Peas, per lb.	.....	6 @10 c
Hubbard squash, per lb.	.....	2 1/2 @ 3 1/2 c
Lettuce, crate	.....	\$1.25@1.75
Celery, Delta, crate	.....	2.50@4.50
do, Southern, crate	.....	2.50@4.30
Tomatoes, crate	.....	Not enough to quote
Rhubarb, box	.....	1.50@1.75
Potatoes, ctl., Delta	.....	3.90@4.25
Salinas	.....	Cleaned up
Oregon	.....	4.00@4.25
Sweets, per lb.	.....	5c
Onions	.....	9.50@10.00
Garlic, lb.	.....	3@5c

POULTRY.

With Eastern markets still so high that the Middle-Western producer refuses to ship to this market, prices on California fowl have naturally been

very firm. Some advances have occurred, although geese and ducks were lower. Not enough dressed turkeys are coming to hand to warrant quoting. Fryers were the scarcest article on the list and registered a very sharp advance. Squabs held unchanged. Hens of average weight were easily disposed of. Belgian hares sold well. Turkeys, live, lb.

do, dressed, large, lb.	.....	22@25c
do, dressed, large, lb.	.....	Not enough to quote
Broilers, 18 lbs to doz and less.	.....	33@35c
do, over 18 lbs. to doz.	.....	29@32c
Fryers	.....	27@30c
Hens, extra, per lb., colored	.....	26c
Small leghorn	.....	25@26c
Smooth Young Roosters, per lb.	.....	27@28c
(3 lbs. and over)	.....	27@28c
Old Roosters, per lb.	.....	15@17c
Geese, per lb.	.....	18@20c
Squabs, per lb.	.....	40@43c
Ducks	.....	24c

Special Livestock Market Report.

San Francisco, Feb. 28.

CATTLE are still in heavy demand although buyers are only purchasing on a hand to mouth basis in hope that some relief from the high prices may materialize. Prices being paid in the country are not warranted by the wholesale price of beef, but holders are taking advantage of the light supply to demand whatever they feel like. Because of the generous rains of the past week, it is thought that the "grasser" supply will not be more than two weeks later than usual.

Steers, No. 1	.....	9 1/2 @10 c
No. 2	.....	9 @ 9 1/2 c
Cows and Heifers	.....	7 1/2 @ 8 c
No. 2	.....	7 @ 7 1/2 c
Bulls and Stags	.....	6 @ 7 c
Calves, light	.....	9 @ 9 1/2 c
Medium	.....	8 1/2 @ 9 c
Heavy	.....	7 @ 8 c

HOGS are in big demand at this market, but with the extremely high price quoted supplies are short. With a \$13.60 top at Chicago today, local packers cannot touch Idaho or Utah supplies and are having to rely solely on California offerings. There is a falling off in the percentage of good grain fed hogs arriving and buyers are having to take some soft hogs to supply the fresh meat demand.

[Rough docked 20 pounds, piggy		
sows, 40 pounds, stags 80 pounds.]		
100 to 150 lbs.	.....	11 c
150 to 300 lbs.	.....	12 @ 12 1/2 c
300 to 375 lbs.	.....	11 1/2 @ 11 3/4 c

SHEEP and LAMBS are little changed from a week ago. The last shipment of Idaho lambs is now in transit and buyers profess an ignorance of any further supplies in California. Utah or Idaho. No improvement is looked for till the spring run of lambs starts.

WOOL is strong, particularly pulled wools. Country buyers report Bakersfield clip about all bought up and very little movement at Red Bluff although sales of Sacramento Valley wool are reported at 40c. There is no activity as yet reported in Mendocino county, but prediction is made that the 40-cent mark will be reached there also.

Sacramento Valley, spring clip.	.....	39@40c
Mendocino, year's	.....	32@33c
Southern, spring clip	.....	28@30c
Southern, 7 months	.....	15@18c
Imperial Valley, 7 mos.	.....	14@15c
Nevada, year's	.....	31@32c

HIDES are in better demand, especially for country hides, but slight activity in packer hides. Tanners seem decided to fill their present requirements in the country in the hope of breaking down packers' prices.

Steers	.....	23 @ 25 c
Cows	.....	23 @ 25 c
Light hides, 25 to 48 lbs.	.....	25 @ 26 c
Kip	.....	20 @ 22 c
Calf and veal	.....	29 @ 30 c
Dry Hides	.....	32 1/2 @ 33 1/2 c
Dry Kip	.....	35 @ 36 c
Dry Veal and Calf	.....	38 @ 40 c
Pelts, long wool	.....	\$3.25@3.50
Short wool	.....	1.25@1.50
Horse hides, wet, large, ea.	.....	5.00@5.50
dry, large	.....	3.00@3.50

No. Portland, Ore., Feb. 26, 1917.

CATTLE—All beef stuff met a very good demand today. It was an active market and sellers disposed of all bid-dings early in the day. Prices on most all good steers were 10 to 15 cents higher, while butcher stuff was 25

cents higher. Several loads of prime grain-fed steers brought \$9.75 with another at \$9.60. There was a considerable spread of prime steers that sold from \$9.35 to 9.60. Medium steers were in good supply and sold from \$8.50 to 8.80; bulk of cows were sold at 25 cents higher basis, good ones sold from \$7.25 to 7.50, while fair and medium killing cows brought \$6.75 to 7.00. A few prime heifers brought \$8.50; the unchecked demand and advancing prices seem to have no end in the bull division. Light bulls brought \$7.50 with the bulk of the good fat bolognas going from \$6.50 to 7.00; medium kind brought \$6.00 to 6.25. A few prime light calves brought \$10.00.

HOGS: There was an even advance of 25 to 35 cents in hog values today, and 50 cents in the bulk of sales compared with a week ago. Demand was very good both from local packers and butchers as well as outside buyers. Several of the prime heavy hogs brought \$12.85 while the bulk of sales were made at \$12.75 to 12.85. Pigs advanced sharply with but a moderate supply, the bulk of sales were made at \$11.50 compared with \$11.00 last week.

SHEEP: The firm tone in the sheep trade continues, prices are advancing almost every time offerings are received on the market. There were but a few loads of sheep on the market today, one car of shorn wethers and one mixed load of ewes and bucks, the shorn wethers were taken at \$10.90, the highest price ever paid here. The mixed load of ewes and bucks, weight straight at \$9.50. There were no lambs available although prices were quoted at \$12.75 to \$13.00.

Los Angeles, Feb. 27.

CATTLE: The market situation remains much the same as a week ago. Very good offerings were had the past week both from California and Arizona and of very good cattle. But with killers all in the market and wanting supplies and the beef market holding up very well, old prices were fully sustained and the offerings were disposed of without much trouble.

Per cwt. f. o. b. Los Angeles:
Beef steers, 1000 to 1100 lbs. \$9.00@9.50
Prime cows and heifers 7.50@8.00
Good cows and heifers 7.00@7.50

HOGS: Receipts the past week were not heavy and the demand was very good. California and Arizona furnished a very good number of very good hogs, though the supply was all wanted; killers bid up full last week's prices for all offerings. But few Idaho hogs in, most of them still being drawn East by the high prices there.

Per cwt. f. o. b. Los Angeles:
Heavy, averaging 250@300 lbs. \$9.75@10.25
Mixed, 200@250 lbs. 10.25@11.25
Light, 175@200 lbs. 10.25@11.25
Rough docked 20 pounds, piggy sows 40 pounds and stags 40 per cent.

SHEEP: With but few coming in a firm market was had the past week. With a good demand for mutton and lamb buyers took all they could get even at present high prices. As of late, what arrived were mainly from Idaho and Utah, but few being had from nearby sections.

Per cwt. f. o. b. Los Angeles:
Prime wethers \$9.00@10.00
Prime ewes 9.50@10.00
Yearlings 9.50@10.00
Lambs 13.00@14.00

CALVES: Arrivals continue good and a slow, weak market was had the past week. Selling at \$8.50 to \$9.50 per cwt.

HIGH POULTRY PRICES STAGNATE BUSINESS

Poultry prices seem to have reached the limit. People are buying substitutes. San Francisco would normally use five cars live poultry per week at this season, but none was received last week and the stocks of frozen poultry are getting light. California normally draws three-fourths of her table poultry from the Middle West; but this supply has recently gone East. This week one company quotes 32 to 35 cents per pound for broilers here; young roasters over 2 1/2 pounds, 25 cents; Belgian hares 12 to 13, young ducks 18 to 20.

Belgian Hares (live)	.....	21@22c
	.....	13@15c

BUTTER.

Butter prices closed at exactly the same level as was in effect on the opening day of the week, with buying for outside shipment responsible for an advance last Saturday. Receipts have been very much larger but the Alaska trade has developed early this season and Seattle is already buying here for northern shipping. The rains promise grass butter very shortly and only abnormal conditions in the East can support this market. The average price on the extra grade for the week just closed was 37.00 cents, as compared with a 36.9 cents average for the corresponding period last year.

Thurs. Fri. Sat. Mon. Tu. Wed.		
Extra	.....	36 1/2 36 1/2 38 1/2 37 1/2 36 1/2 36 1/2
Prime	.....	36 36 37 1/2 36 1/2 36 36
First	.....	35 36 36 35 1/2 35 1/2 35 1/2

EGGS.

The rush of spring receipts and slumping prices in the East have combined to send egg quotations crashing in the local market. During the week just closed eggs have lost 7 1/2 cents in San Francisco; 10 cents in New York, 12 1/2 cents in Chicago and 7 1/2 cents in Los Angeles. Receipts have increased very heavily. Some light shipping is reported. The extras grade brought an average price of 29.4 cents as compared with a 20.3 cents average for the same week in 1916.

Thurs. Fri. Sat. Mon. Tu. Wed.		
Extras	.....	31 1/2 31 30 27 1/2 28 1/2 24
First	.....	30 1/2 30 1/2 28 26 26 24
Ex. Pullets	.....	30 29 27 26 24 21 1/2

CHEESE.

Heavy trading in cheese marked the past week, a good increase in receipts being generally absorbed by buying for Eastern shipments. A sudden flurry sent old style fancy Flats off to 19 1/2 cents on the closing day of the week, but this is not expected to hold. Young America advanced, while Jack cheese was firm at quotations.

Y. A.'s	.....	19 1/2 c
Fancy Calif. Flats, per lb.	.....	22 1/2 c
Monterey Cheese	.....	16@20c

Apples: The receipt of a small export order and the low figure of local holding caused a small advance on Newtown Pippin apples this week. Bellflowers were unchanged.

Bellflower, box	.....	\$ .60 @ .75
Newtown	.....	1.10@1.25

CITRUS FRUITS.

After refusing for nearly a week to name f. o. b. prices, the California Fruit Growers' Exchange has announced prices on oranges that are 40 cents above the eight year average. The new figures mark an advance of 25 cents per box over the last named figure. Fancy navel are held at \$2.25 @2.40 per box, f. o. b. shipping point, and choice at \$2.00@2.15. New prices on lemons, that are expected to be as startling, will be named shortly.

Oranges:		
Navels, fancy, per box	.....	\$2.40@2.75
do, choice	.....	1.85@2.25
Lemons:		
Fancy, per box	.....	3.25@3.50
choice	.....	2.50@2.75
Lemonettes	.....	1.50@2.00
Grapefruit, fancy	.....	2.25@2.50

DRIED FRUITS.

A few deals in futures, made between the packers and the more speculative of the growers, were reported this week, but developments have been principally confined to dickering with nothing closed. Some business in future prunes at 4 1/2 @4 3/4 c per lb. were reported, but the bulk of the growers are holding for 5 1/2 cents. International developments were not favorable for the dried fruit industry.

[Net to growers, bulk basis, f. o. b. shipping point.]		
Apples, new crop	.....	5 1/2 @ 6 c
Apricots, per lb.	.....	15 @ 16 1/2 c
Figs, black, 1916	.....	6 @ 6 1/2 c
do, 1917	.....	5 1/2 @ 6 1/2 c
do, white, 1917	.....	6 @ 6 1/2 c
Calimyrna, 1917	.....	9 @ 10 c
Prunes, 4-size basis, 1917	.....	5 @ 5 1/2 c
Prunes, 1916	.....	5 1/2 @ 5 3/4 c
Pears	.....	6 @ 7 1/2 c
Peaches, 1917	.....	6 c

HOPS.

Sacramento	.....	8@8 1/2 c
Sonoma	.....	9@11c
Mendocino	.....	9@10c

LOS ANGELES.

Los Angeles, Feb. 27, 1917.

BUTTER.

Receipts of week ending Feb. 27, 1917—311,346.
Receipts of week ending Feb. 27, 1916—284,340.

More rain, warmer weather and promise of better pastures and increased milk production caused a decidedly weaker tone to the market the past week. The general feeling was that the time of year is at hand for lower prices, and that values were being held up by the want of cold storage stocks and a continued good consumptive demand. The holdings in cold storage throughout the country, February 1, being 1,157,084 pounds lighter than the same date last year. The result was a break of 2 cents on change up to Monday, Chicago 10 lower and New York 2c off.

Extra creamery	.....	35c
Prime first	.....	34c
First	.....	33c
1917	.....	Wed. Thu. Fri. Sat. Mon. Tu.
Extra	.....	37 37 36 36 35 35
1916	.....	36 36 35 35 34 34
Extra	.....	32 32 32 31 31 31

EGGS.

Receipts (railroads) for week ending Feb. 27, 1917—3499 cases.

CANNING PEACHES HIGH PRICED

Forty dollars per ton for Tuscans and Phillips is the contract of a canning company to growers in Sutter county in consideration of contracts for the succeeding nine years at a lower price. For any canner to contract 10 years ahead as has been done in Placer county for at least 2200 tons, seems reckless in view of the greatly increased acreage to come into bearing. The venture is based to some extent on the tomato famine. Tuscans and Phillips are generally being contracted at \$30 to \$35, though San Joaquin Valley clings are held tight.

Receipts (railroads) for week ending Feb. 27, 1916—3014 cases.

More receipts in the past week and markets East working lower, caused prices to break sharply. The consumptive demand held up very well, encouraged by the lower prices. Shippers, however, were inclined to go slow, the Eastern markets slumping causing them to hold back. While extras went off 2½¢ up to Monday, case count 3¢ and pullets 3¢, still the market is 5¢ higher than this time last year. Tuesday, with all other markets off again and receipts liberal, there was a further break on call of 1½¢ and trading light. Extras went to 23½¢ case count, finished at 21¢ and pullets at 21½¢.

1917	Wed.	Thu.	Fri.	Sat.	Mon.	Tu.
Extra	29½	29½	29½	28	26	23½
Case Ct.	27	27	26½	26	24	21
Pullets	26	26	25	24½	23	21½
1916						
Case Ct.	19	19	19	19½	18½	18½

POULTRY.

A fairly active and higher market was had the past week for all young stuff. No Eastern poultry in and the local receipts only fair, caused dealers to bid up higher for broilers, fryers, heavy hens and roasters. Turkeys, ducks, and geese met with good demand at full prices. The consumptive demand holds up well, even at present high prices.

We quote from growers:

Broilers, 1½ to 3 lbs.	29@30c
Fryers, 2½ to 3 lbs.	26@27c
Hens over 4 lbs.	21@22c
Hens, under 4 lbs.	19@20c
Ducks	22@23c
Geese	18@19c
Roosters, 3 lbs. up (soft bones)	24c
Turkeys, heavy, 12 lbs. and up.	29@30c
Turkeys, light	24@25c
Squabs, live, per doz.	\$1.50@3.00
Dressed	3.75@4.85

CABBAGE AND CAULIFLOWER.

There was a further firming up of the market the past week for both cauliflower and cabbage. The arrivals were light and a good shipping demand was had. The quality of the offerings not so good as the past few weeks and unless better stock is brought in it is thought buyers will hold back and insist on lower prices. Shippers only want fancy stock and for such will pay good prices. Cabbages sold the past week at \$4.00@4.75 per cwt. and cauliflower at \$1.40@1.50 per standard crate.

BEANS.

The market took another upward jump the past week. Limas, whites and blackeyes all higher, while limas made a sensational advance. There being a scarcity of seed and a very good general demand caused buyers to bid unheard of prices heretofore. Pinks firm in sympathy with other varieties.

We quote from growers:

Limas	\$12.50@13.00
Large white	12.00@12.50
Small white	12.00@12.50
Pinks	7.50@8.00
Blackeyes	6.00@6.50
Tepary	5.75@6.25

HAY.

There was very little interest in this market the past week. Not much coming in and not much wanted. The rainy weather interfered very much with the shipping demand while the local trade only took such lots as it had to have. Prices, however, unchanged. Receipts, 169 cars.

We quote f. o. b. Los Angeles:

Barley hay, ton	\$18.00@20.00
Oat hay, ton	19.00@21.00
Alfalfa, northern, ton	17.00@18.00
Alfalfa, local, ton	19.00@21.00
Straw, ton	9.00@10.00

Citrus Report.

Los Angeles, Feb. 27, 1917.

Shipments of citrus fruits from Southern California from November 1 to February 25: Oranges 8236 cars and lemons 1831 cars. Same time last year: Oranges 7323 cars and lemons 1832 cars.

Shipments from Central California from November 1 to February 23: Oranges 4029 cars and lemons 154 cars. Same time last year: Oranges 4179 cars and lemons 135 cars.

There was more life and a stronger tone to the Eastern markets the past week. With clearing weather, general picking and shipping was resumed the past week and more and better oranges went forward. This with milder weather enabled the display of oranges on stands in Eastern cities, helped the demand and encouraged better buying and stronger prices. The Florida crop, too, is pretty much out of the way. Locally the situation is little changed from a week ago. There were not so many culls in and there was a better movement in oranges than for some time. Prices however, show no change from a week

Publisher's Department.

One hundred and eighty-two new paid subscribers were added to our list during the past week. The heavy rains kept some of our men indoors part of the time, but the crop prospects are so much better that the slump of one week will be quickly overcome.

John G. Mee of St. Helena writes: "I shall always bear in mind the good results secured through advertising in your paper."

In remitting \$5 for five years' advance subscription to the Rural Press, S. F. Leib of San Jose writes: "I value highly everything Professor Wickson writes. I think he is one of the best, all-around posted men in California."

"I consider a dollar invested in the Rural Press brings me bigger returns than any other one dollar I can invest." —Luther C. Martin, Selma.

"Feeding of Farm Animals" by W. H. Jordan, Director of the N. Y. Agricultural Experiment Station, Geneva, is a new book just published by the Macmillan Company, 66 Fifth Ave., New York, price \$1.75. The book is divided into two parts covering the principles of feeding and practice of feeding. Gives many valuable tables, is well illustrated and contains nearly 300 pages. It should be in every stockman's library.

CROP CONDITIONS IN CALIFORNIA.

Following is a general summary of crop prospects in this State as reported by a recent observer:

San Joaquin Valley.—In parts of

Tulare county frosts have damaged citrus fruits, especially those delayed in picking; Valencia oranges, not harvested until spring months, have suffered somewhat. Apparently a large acreage of barley and wheat is going in. The alfalfa crop has been pretty well sold and good prices are being obtained by those who held on. Cold weather has delayed the growth of new feed which is working hard-ship on feeders.

Sacramento Valley.—In Sutter county all available land will be used this year. Barley acreage this year is about normal; sugar beets 50 per cent increase; beans 10 per cent increase; raisin grapes 10 per cent increase. Reclamation work is progressing and will give more land for crops.

Contra Costa County.—The usual acreage of crops has been seeded and now are enjoying the warm rains. Prices of hay continue high (\$25) and these prices are likely to continue until new grass.

FRUIT GROWERS' LABELS

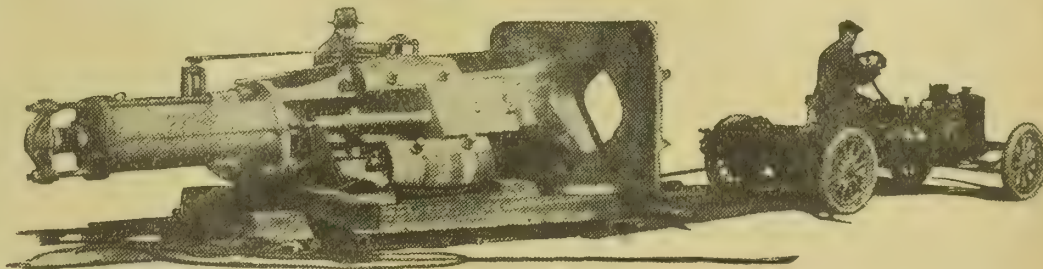
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This proves, more powerful than words, the great pulling power of the Chalmers. A short time ago a big steam hammer arrived at the Chalmers works. It weighed in excess of 30,000 pounds. After it was unloaded from a freight car it had to be moved to a building a quarter of a mile away. A Chalmers chassis, just finished, was taken from the factory and a towing rope attached. Several times the rope broke and the steel rollers placed under the hammer were crushed like eggshells. The Chalmers, however, hauled the load with ease, and the hammer was in place in an hour.

Specifications

Engine—6 cylinders, bore 3¼ ins., stroke 4½ ins., piston displacement 224 cu. ins. Power—45 h.p. (on the brake test.) Starter—Westinghouse 2 unit. Carburetor—Stromberg, horizontal, hot air heated. Clutch—Dry disc, asbestos on steel. Fuel feed—Stewart-Warner vacuum system. Ignition—Remy distributor, Willard 80 ampere hour battery. Tires—32 x 4, chain tread on rear.

Prices

Five-passenger Touring	-	\$1250	Seven-passenger Sedan	-	\$1850
Seven " Touring	-	1350	Seven " Limousine	-	2550
Three " Roadster	-	1250	Seven " Town-car	-	2550

(All prices f.o.b. Detroit)



\$1150F. o. b.
RacineMitchell Junior — a 40 h. p. Six
120-inch Wheelbase**Mitchell**
SIXES**\$1460**F. o. b.
Racine7-Passenger — 48-Horsepower
127-inch Wheelbase

How Mitchells Differ Because of What John W. Bate Has Done

Hundreds of Extras

Factory efficiency has been made a fine art in this plant. John W. Bate, our efficiency engineer, has spent millions to attain it.

This entire plant, covering 45 acres, was built and equipped to secure it. Now our new body plant completes it. We urge you to learn where these tremendous savings show in extra value.

For a Lifetime Car

Part of this saving pays for 100 per cent over-strength. Our margin of safety used to be 50 per cent. It has now been doubled.

Steering parts, gears, axles, etc., are made oversize. Our rear springs are built so that, in two years, not a single spring has broken.

Over 440 parts are built of toughened steel. Parts which get a major strain are built of Chrome-Vanadium. The steel in Mitchells costs us up to 15 cents per pound. And we do not skimp on weight.

The result is safety, freedom from repairs and troubles. And a car which probably will serve men for a lifetime. Time will prove, we believe, that this double strength is worth half the price of the car.

\$4,000,000 in Extras

There are 31 extra features in Mitchells, most of them exclusive. On this year's output these extras cost us about \$4,000,000.

They are things like a power tire pump, an easy control, a ball-bearing steering gear, engine primer on the dashboard, a light in the tonneau, a locked compartment, etc.

Every one is a wanted feature. Yet they are impossible, at a modest price, without Mitchell factory efficiency.

Extras in Luxury

The Mitchell has long been considered by experts one of the handsomest cars on the street. The output is largely sold in metropolitan centers.

Yet this year we have added 24 per cent to the cost of finish, upholstery and trimming. We are giving you heat-fixed finish, extra-grade leather, and scores of new dainty touches.

All this results from another economy. We now occupy our new body plant. All Mitchell bodies, open and closed, are built here now, under Bate efficiency methods. And this added luxury clearly shows the result.

What So Important?

What else is so important?

Extra values like these, without extra price, come only through efficiency. Under other methods, all these values are wasted in the shop.

Mitchell stands unique among fine cars in respect to efficiency. For a dozen years John W. Bate has worked here to attain it. Go to your Mitchell dealer and see the results. Compare it with cars built otherwise. If you can, take an engineer with you, and we will abide by his verdict.

TWO SIZES

Mitchell — a roomy, 7-passenger Six, with 127-inch wheelbase. A high-speed, economical, 48-horsepower motor. Disappearing extra seats and 31 extra features included.

Price \$1460, f. o. b. Racine

Mitchell Junior — a 5-passenger Six on similar lines, with 120-inch wheelbase. A 40-horsepower motor— $\frac{1}{4}$ -inch smaller bore than larger Mitchell.

Price \$1150, f. o. b. Racine

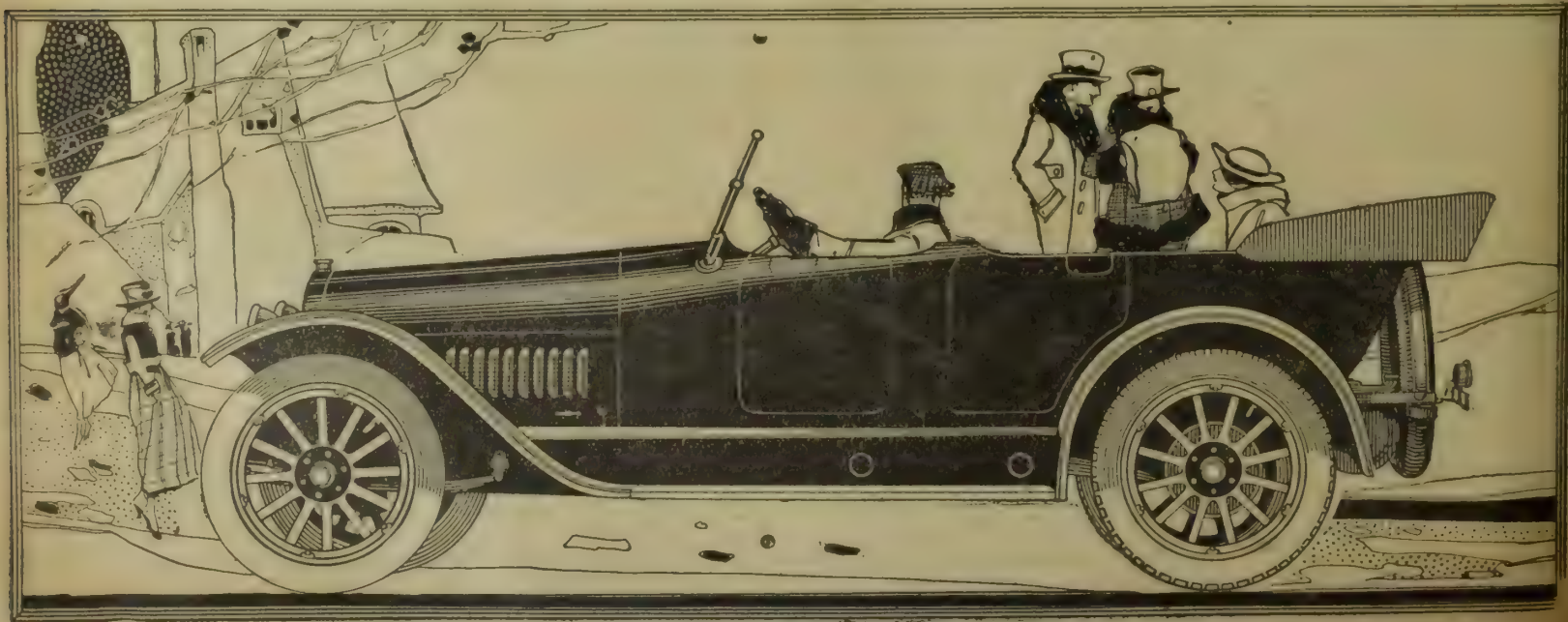
Also all styles of enclosed and convertible bodies. Also demountable tops.

\$1150 Mitchell Junior

Note that this year's line includes two sizes—the Mitchell and the Mitchell Junior. But the Mitchell Junior—for five passengers—is still powerful and roomy.

This is also for efficiency. So the man who wants a 5-passenger car need not pay for more power or more room than he needs.

MITCHELL MOTORS COMPANY, Inc.
Racine, Wis., U. S. A.



THE PACIFIC RURAL PRESS

SAN FRANCISCO

MARCH 10, 1917.

LOS ANGELES

Senator Sorghum, a California Pioneer.

[Written for Pacific Rural Press.]

THE Sorghum family got in wrong with the people of the United States. It was, perhaps, inevitable that such extreme aristocrats should not strike it quite right in a new world. The Sorghums went out with Adam from gardening to field work. They helped his eldest son to make up that batch of hot cakes—an unacceptable burnt offering, from which they gained their family crest, the mark of cane, which they carry to the present day. They were with Joseph when he reigned as the world's first "food dictator" in the court of Pharaoh. Their blood literally flowed in the veins of Confucius and Buddha. They nourished Nebuchadnezzar when the grass failed upon the dry plains of Babylon, and for millenniums they were strictly in it with all races of men in Asia and Africa—maintaining the Sorghum nobility from prehistoric tombs through scores of ancient dynasties of mummy cases to the modern warehouses and flat-boats of the Nile Valley. As, however, often happens with proud ruling clans, the Sorghum family had one branch which trailed its plumes upon the common floor of humanity, groveled around the north Mediterranean countries, and finally reached exaltation in this country at the beginning of the last century, and soon emblazoned a crest of its own upon American heraldry—a broom rampant above a milk-white arm: token of cleanliness, thrift, and the independence of woman, signs in which the new world conquers.

Broom Corn.—In marked contrast with this great achievement by their poor relation, has been the ill-luck, buffeting and deferred appreciation which the titled nobility of the Sorghum family has encountered on this side of the world since their application for naturalization papers in this country about sixty years ago. These decades of misunderstanding and many dishonors have been possibly more the fault of welcoming Americans than their own. The Sorghums were expected to do things here which they have never done elsewhere in the world, viz., to displace tropical sugar—to do this everywhere in this country and to disprove the European demonstration that the beet alone can displace the tropical cane. During more than a quarter of a century, national and state governments, corporations and individuals, expended millions of dollars in vain efforts to install the Sorghum family as northern sugar magnates, until the very name became a by-word and a synonym for all that was fatuous and fallacious in public and private policy and endeavor. Then it was that the region between the Mississippi and the Rockies got

Nineteenth of a series of sketches in which the Editor presents suggestions, drawn from long experience, of what Californians have done and may do for the Advancement of California Agriculture.

around between a battered straw hat and broom-like whiskers. It was also the nickname for any embodiment of wild ideas, wrong reasoning, inaccuracy and prejudice. It was the description of the attitude of the man who first said: "I hain't no use for enny kind o' corn which hez seed whar the tossel oughter be"—an attitude of ignorance of false reasoning and of conceit!

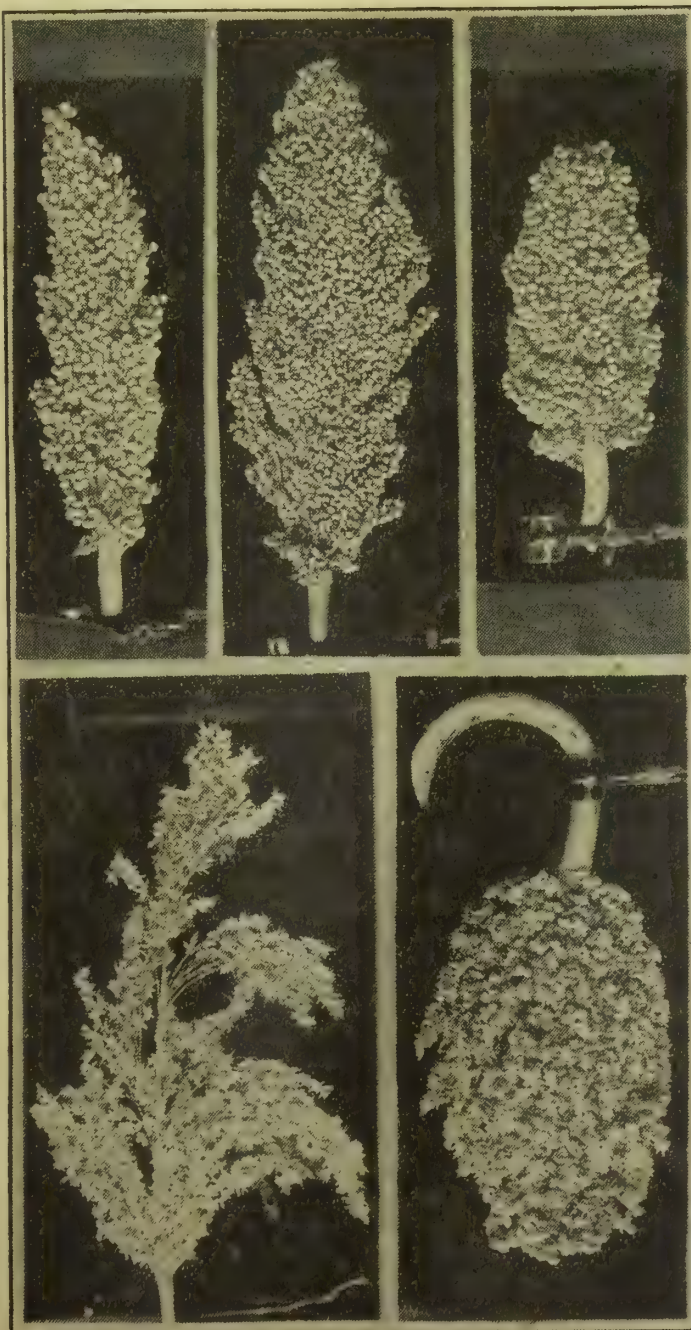
its science of economics and its politics hopelessly confused, and the caricaturist created the sobriquet, "Senator Sorghum," for application to anybody who came out of the West with a brain-storm whizzing

California Confuses Sorghum and Sugar Cane.—Although the early Californians had knocked about too much in the world to furnish many exemplars of Senator Sorghum's traits of mind and body, they did go through nearly all the phases of the sorghum-sugar delusion—excepting the investment of much money in it, and they were spared that because the sugar beet interest arose in time to get the money and apply it to the foundation of a great industry instead of wasting it on sorghum and corn-stalk sugar, as was done in the eastern half of the country. The rise, development and decline of the saccharine-sorghum interest in this State include many interesting details, with which we would like to regale our readers, but we must restrain our predilection to do so at this time and push forward with the main narrative.

In the first place, California welcomed sorghum under wider misapprehension, perhaps, than existed in Eastern States, away from the gulf, because the early Californians had reason to believe that this State could produce true cane sugar while farmers in Eastern States knew that they could not. When the Americans came there was true "tropical cane" growing in Los Angeles, as there has been ever since and for the same uses. It probably came from tropical parts of Mexico or Central America, whence many plants were brought in early days. The demand for sweet cane for dentiflingual extraction of the juice was keen and large among the argonauts. In 1855 Antonio Salazar of Los Angeles sold his crop from five acres for \$1000. He said: "He had formerly sold it for 12½¢ per cane and latterly at 1¢. It was all sold for chewing. It is replanted once in six years"—showing that it was not a sorghum. He said,

however, that "It makes good molasses, but does not granulate readily." At F. P. F. Temple's, at El Monte, there was in 1856 "an acre of cane

(Continued on page 300.)



Typical Heads of Non-saccharine Sorghums.—Above, left to right: Feterita, Kafir, Dwarf Milo; below, Shallu, Egyptian corn. See page 301.

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EDITORIALS

SET UP THE FRUIT INDUSTRY.

THE Legislature now in session is having many gleaming visions spread before its wondering eyes this winter. Unless it shades its sight resolutely against the flashes of sheet lightning from many of the flossy fallacies which are being uplifted it will be blinded so that it cannot discern the real features of the industrial landscape. It may forget that the fundamental condition of prosperity is not a war to force selling cheaply, but to have something to sell. All the fancy phases of distribution of prosperity which are now claiming so much attention seem to be proceeding upon the assumption that ample and increasing production is assured by the nature of things, and all that California people have to do is to cut the melon which is growing itself. Of course, we are not objecting to serious consideration of all the important questions which are arising in our progressive industry and in the interest of our citizenship, because such consideration will make us wiser and fairer in all our dealings with each other and the world, but it should not be forgotten that the fundamental thing to do is to make production prosperous and perpetual.

In writing these platitudes we are thinking of the needs of our fruit industries, which should be adequately met by the Legislature now in session. Let it not be forgotten that the fruit industries are the only one of our producing groups which has done all these things during the last half-century, viz.: (a) going forward without serious depression; (b) practically excluding from our markets all products of its own kind; (c) selling beyond State lines products worth, say, a hundred millions of dollars a year; (d) developing capital, locally and from investments drawn from abroad to serve such production, directly and indirectly, to an aggregate of, say, a billion dollars. This is California's greatest industry; it makes California greatest in its line in the United States, and, as things now are, greatest in its line in the world—for our only rival, France, now outraged and devastated, has her old greatness to regain.

IS OUR FRUIT INDUSTRY DEPENDABLE?

THE first thing the Legislature should do is to resolutely set its face against distraction which might cause the fruit industry to be neglected or inadequately provided for, in the push of other matters which are clamoring for public mind and money. Is the industry dependable? It has shown that it is. The shock of war, which made all our dealers croak and producers shiver, really caused the industry such a little tremor that it almost passed in a night. Though the European demand was instantly fractioned, prices constantly advanced; the industry demonstrated American independence. The whole country recognized its stability and its unclouded outlook. Not only have fruit plantings this year emptied our nurseries of planting stock, but even before this courage came to growers there was the greatest association of men and money in a preserving corporation that the State has ever had

in all its buoyant history. Even while growers were organizing capable control organizations, capitalists on the manufacturing side were confidently extending their own operations and capital-gathering. Even while we are writing, contracts for canning fruits are being made in various parts of the State at very profitable prices for the product of trees hardly yet breaking bloom. Even while events threatening all kinds of industrial disturbance and arousing the most disgraceful political passions, are transpiring, we are planting fruits in California with redoubled energy, our railways are contracting for immense new equipment, our shipyards on San Francisco bay have developed a ship-building capacity greater than any other ship-factories in the country, and promise to be in the foundation of an American marine in the immediate future. All these things are, of course, securely in the safe basis for our future fruit production. There never was a time when its outlook was so fully assured. Producers have reached the earlier achievements of self-consciousness and co-operative action; manufacturers of fruit products never had such courage and capacity; the ways to the world were never so wide open. Our fruit industries were never so dependable as they now are!

HOW THE STATE CAME TO KNOW ITS NEED.

IN A general way it may be said that the fruit industry needs more distinctive and efficient State service and more of it. Executive work in promotion and protection of tree fruit growing was begun about 1800, and vine-work was begun before that. It was undertaken by the Legislature through the conviction that California had a prospect of something great in fruit, and planters ought to be helped by the State. Naturally just what to do was not very clear at that date. We remember an early secretary of the Board of Horticultural Commissioners who considered it his duty to put his feet on his desk and read the daily papers all the morning so that he "would not overlook what needed to be done." After lunch he did it, whatever it was. Of course, others connected with the board did more, and it was of great value, but the point we are making is, that the part of the officer representing the executive branch of the State government was to keep his office cushion flat and his eye on politics. It was rather a prevalent conception of State executive work in those days. There was an awakening after that, and the succession of decades and State horticultural officers brought other ideas of what the executive function, as related to fruit promotion and protection, really was. These ideas lacked not numbers, but they did lack definiteness of purpose and method. Under laws which these functionaries made for their own authorization, this multiplication of ideas increased, and the real executive function became more obscure. It was, however, an evolutionary process in operation, and it was perhaps unavoidable that it should run out into a lot of appendixes which had to be naturally sloughed off or operated upon. We call this unavoidable because the attitude which the State of California early assumed toward the fruit interests had never been previously assumed by any other State. The purposes were new, the methods untried, and the officers fallible men of purposes usually better than their vision of the relation of things and of ambition not always regulated by a proper conception of expert public service in State executive work. Still, there was force enough to do many good and necessary things, honorable to the doers and helpful to the State. More recently

there has arisen a better idea of what State executive work for the fruit industry and the evolutionary method has brought us, now the service of a State Horticultural Commissioner who has a better, clearer, and truer idea than all his predecessors had, of what the State should do in the revision of its horticultural laws and the faithful execution of them for the advancement of the industry they are designed to advance and to protect.

WHAT DOES THE STATE NEED?

THAT is the question which it is now up to the Legislature to judge and to enact, and it is that which we trust they will not allow to be obscured by other claims upon their attention. Our conviction is that the several bills which have been introduced embody the ripest judgment of those who have had most experience in developing and protecting the fruit industry for many years. The bills to which we refer were prepared by a large committee the creation of which was provided for by the Visalia Fruit Growers' Convention of 1915. This committee steamed safely through the submarine zone proclaimed by the San Bernardino convention of February, 1916, began its work under the acting-commissionership of Mr. Weldon, and has been very active ever since Mr. Hecke became State Horticultural Commissioner in October last. Its membership is widely representative of fruit-growers' organizations in different parts of the State, and it has been under the leadership of Frank B. McKeivitt, whose practical achievements in fruit lines have given him much wisdom and influence. The proposed laws are certainly well born and trained, and therefore are entitled to demand much confidence from the law makers.

In the nature of things, we cannot present the details of the revised horticultural laws whose enactment is asked. The text of them would probably fill an issue of this journal. They can be found on file in all public libraries throughout the State, and probably copies can be secured through the office of the State Horticultural Commissioner at Sacramento. They should be carefully studied by all in the public interest and from the point of private growers. They include revision of the laws defining the equipment and duties of the State Commissioner and his staff and the law concerning the appointment duties and powers of the county horticultural officers, and there are other special enactments proposed by others than the committee named above, which should receive careful attention. It will be a misfortune to the fruit industries if the State laws for their advancement and protection do not come upon a basis of greater harmonious, uniform and rational action by the enactment of the present Legislature.

BETTER EXECUTIVE WORK PROVIDED FOR.

IT HAS long been seen that State executive work for fruit growing should be broadly and evenly distributed over the State, and that uniform efficiency should be insured by direct connection with the State capital, and many years ago the State Commissioner was made, ex-officio, member of all county boards. But, though this provision enabled previous State commissioners to do many and important things in co-operation with local authorities, it was physically impossible to fully attain the ends of this reasonable and beneficial unification of State work. No one man can act personally through about a thousand miles of distance when the important things to be done will not arise at stated points in the calendar but have a way of arising as emergencies which determine their importance usually. It is therefore proposed now that this immediate participation by the State office shall be provided by two deputies, one in the north and the other in the south, whose chief duties shall be to co-operate with the counties in each of their districts, and thus represent the State in county action, as was originally intended. This has, of course, a twofold purpose—to assist the counties with their local problems, and to advantage the State also by participation in counsel and action which are seldom strictly local, but nearly always have broader reasons and

California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau at San Francisco for the week ending at 5 p. m., March 6, 1917:

STATIONS	Past Week	Rainfall Data		Temperature Data	
		Seasonal To Date	Normal To Date	Max'm	Min'm
Eureka .....	.60	22.03	33.04	56	30
Red Bluff .....	.21	14.89	18.37	60	36
Sacramento	00	11.48	14.54	60	36
San Francisco	00	13.97	17.13	64	42
San Jose	00	11.34	12.38	64	30
Fresno	00	6.80	6.80	64	36
Independence	00	.....	.....	.....	.....
San Luis Obispo	00	21.99	14.84	70	36
Los Angeles	00	14.84	11.63	76	44
San Diego	00	8.50	7.53	70	42

requirements of action. This participation by the State will not only promote wider uniformity and reason in such action, but it will give local officers greater confidence, and win for them wider local support, without which they must always largely depend for success. It will also incidentally spur them to greater watchfulness and wider understanding of what they see, and the hope or the menace in it, as the case may be.

But it is not alone in protective work that the State Commissioner needs district deputies. He needs them to keep the standardization work, which the law places upon him, true to the right standards. It is rational and right that standardization of products should rest with the horticultural officers as the law provides. It is theirs to have the growers' points of view and requirements. If they are expert and conscientious, as they surely should be, they will have the growers' good will and confidence in motives, without which standardization is hard to achieve. Personal participation in this work the State Commissioner should have, and in Mr. Hecke's case is qualified to have, but it seems rational that the only way he can fully cover it is by such qualified deputies as he should be empowered to select to co-operate with the county officers.

UNIFORMITY AND EFFICIENCY IN QUARANTINE.

CALIFORNIA has probably the best and most capable quarantine against introduction of pests from beyond the State that ever existed in this country, and it is conducted most efficiently by Mr. Maskew, but there are two things decidedly the matter with Mr. Maskew. First, he is too ill paid. He should have money enough to smother a beefsteak in onions at least once a week, and there may be others of the Commissioner's staff who should also be better paid. But there is another thing which Mr. Maskew cares more about, and that is some way by which he can do as well on our east front as he has been long doing on the west. By this we mean that all our quarantine laws should be harmonized and unified, as the committee has agreed in the bills now before the Legislature. So far everyone with honest intent desires regulation to provide real protection for the great fruit-growing interest, but every such one, so far as we know, also desires uniform laws, which can be understood and obeyed, and not irrational and conflicting ordinances which tempt every one to escape if he can and take the risk of such induced transgression.

So far as we can see, this can only be done by displacing scattering and conflicting ordinances with a carefully drawn and guarded law regulating the geographical movement of plants under the horticultural executive of the State and in offering such an enactment to the present Legislature the committee has presented the product of harder work than it has done on any other single subject which claimed its attention.

WE HAVE A MAN TO DO SUCH THINGS.

WE HAVE only mentioned a few of the things which the revision of our horticultural laws now pending at Sacramento proposes to do. There are others hardly less important which a careful student of the bills will discover for himself. Our greatest satisfaction at the moment rests in the conviction that whatever the Legislature wisely directs to be done, Mr. Hecke can do. He believes the State should do it; he will pursue proper executive work and make the State greater and the fruit growers more prosperous by doing it and by leaving other tasks to other people, as the laws provide. He has been from his youth up in California that kind of a man, and he was trained right for it. In June, 1913, we strolled one afternoon from the Rhine-landing at Geisenheim to the practical horticultural school, which is on higher ground, a little above the beautiful river before it reaches "fair Bingen on the Rhine," which the poet has immortalized in English verse as a tribute to home love in a distant land. We were kindly received by the instructors at Geisenheim, shown their work and instructional outfit, and were welcomed by their students, one of whom we unexpectedly found was from California. As we saw the arrangements for student's work, the thrifty trees they were training in various ways, their energy and eagerness in their work, we had the pleasure of telling them what one of the students at Geisenheim a quarter of a century before was now doing in California—for we remembered that it was at Geisenheim that Mr. Hecke laid the foundation for the understanding of horticulture which he has so fully developed in this State. And this is the man who now leads the executive work of California for the realization of ideals of efficiency and directness in work which he learned first, perhaps, at Geisenheim. Would that all the bright young men whom we saw there three years and more ago, following in the footsteps of Hecke, were now following his honorable trail in California!

spread of wings nearly covered with yellow spots of irregular outlines which is very abundant in the gardens, during the heat of the day, in the coast region, hovering over heliotropes and other blooms. We have never seen the larvae on the heliotrope, but they take very freely to the plants you mention, also to various weeds and wild flowers. They go through the winter in active state, massing under a protective web. They have, however, no connection with the web worms which appear on fruit trees after the new leaves appear. The worms also appear in masses or others.

Crane-Fly Larvae Destroying Grain.

To the Editor: Crane fly worms are devouring wheat and barley sown in December and January. The ground is alive with them just under the surface. How long is the life of the worm before developing into a crane fly? Is there any effective remedy for destroying them?—E. T., West Butte.

Crane-fly, or daddy-long-legs, larvae or worms, are tough, grayish, cylindrical, grub-like creatures an inch or more in length and with pointed projections at their rear ends. If you try to crush them their common name of "leather-jackets" becomes reasonable. They feed on the roots of grains, grasses and other plants and when the ground is fairly moist they are scattered through such a depth and live upon outer roots so that their presence may not be noticeable. When the plant and the worms are forced to work near the surface, because the lower earth is full of water, they can kill the plant. This usually occurs in wet places or on upland in a year of heavy and continuous rainfall, and in such a winter complaints of injuries by them usually come. The worm pupates in the spring and are probably now near the end of their active period. There is nothing which can be done to them in a grain crop which would not cost more than the value of the crop. Land can be cleaned of them by dry plowing and harrowing in the summer, which crushes many and dries out colonies as they hatch from the egg-clusters laid by the moth and scatter as they grow. This accounts for the fact that a single stem or plant may seem to be covered with them and others free. If you watch, you can capture and burn a large lot of them by cutting off the stem which has them, or you can reduce them by hand picking. They can be poisoned by spraying with lead arsenate: one tablespoonful to one gallon of water, or by using the arsenate of lead powder described in detail on page 265 of the Pacific Rural Press of March 3 last.

Small Potatoes for Seed.

To the Editor: I have quite a lot of rather small potatoes that I would like to use for seed to raise potatoes for our own use. Some have had worms in them. Would it be safe to plant them?—H. A. D., Oakland.

You surely can. Under good growing conditions and with good soil you will get a good stand and good-sized potatoes, if the small ones are well matured and have ready eyes. Spread them out a few days on the sunny side of a fence or building and start the eyes unless they are already disposed to sprout. Plant them whole. Never mind about the worms. They are probably out of the way now and you will have to protect the new crop by keeping the tubers well covered with earth as they are finishing their growth next summer and then keep them from exposure to the moth when digging by getting them into a dark place as soon as possible. Do not allow them to lie around on the ground nor in sacks in the field without careful covering.

Two Crops of Beans.

To the Editor: What kind of field bean can I grow for profit, and how early should I plant them? Can two crops be grown successfully in one season?—J. F. S., Chino.

Pink and blackeye do best in interior situations. Plant as soon as frost danger is over: that is, when it is safe to plant corn and melons in your place. The second crop will depend upon the moisture you have in the soil in mid-summer and whether fall frosts come late enough to allow the beans to mature.

By
the Editor

QUERIES AND REPLIES

Inquirer Must
Give Full Name
and Address

Dwarf Fruit Trees.

To the Editor: Please advise me what roots to use to dwarf the following trees: Citrus, all kinds; cherries, loquat; persimmon; apricot; fig, and medlar. In view of the fact that so many small ranches in California have a very limited area for a home orchard, I believe that information on growing dwarf trees would be appreciated, also indication of varieties which are superior in quality, also hardiness, irrespectively of whether they were commercially desirable.—A. H. O., Oroville.

Our larger nurseries can supply you some pears on quince and some apples on paradise. This is perhaps as far as California propagation on dwarfing stocks goes. Citrus trees of all kinds are somewhat dwarfed by working on Japanese citrus trifoliata, but there is discussion as to how much. The cherry is usually dwarfed by using the sand cherry (*prunus pumila* Bessy), but probably both the cherry and the apricot can be dwarfed by using seedlings of the Sierra plum (*prunus subcordata*). The loquat is dwarfed on the quince root; the Japanese persimmon on the American persimmon root; the medlar on the white hawthorne root. We know nothing about dwarfing the fig. We do not share your idea of dwarf trees for farmers' small orchards. A dwarf tree is much harder to grow and care for; it requires more complex pruning above ground and below ground it must be kept from striking its own roots and is often advantaged in its dwarf-

behavior by root pruning. Almost any dwarf tree will either die or grow into a standard if left to itself on good soil in California. The best layout for a family orchard on a small farm is a few good standard trees adapted to the local conditions. There is not enough information available to make a prescription of home-use fruits, as distinguished from commercial fruits, to apply to the whole State. Some good in one place would be practically worthless in another. In a district where fruits are grown you can easily get good tips from commercial growers as to which kinds they generally "send to the house," for fortunately California growers do not always feel obliged to "eat what they cannot sell." It is also the duty of the nurseryman to know what is particularly good to eat in his district and such advice is usually good to take.

Black Spiny Caterpillars.

To the Editor: I am sending specimens of black caterpillars which have come in large numbers. They are on daffodils, tulips, carnations, roses, etc.; but are particularly destructive to Kenilworth ivy and penstemon; eating the tender new leaves on new growth of the latter. Is there a spray which will control them?—J. A. C., Ben Lomond.

They are very spiny, black chaps with small orange colored markings—larvae of *Lemonias chalcodon*, a black butterfly with its two-inch

Grape Growing in Imperial Valley.

Grapes on light soils for early shipment are making prosperous growers who have good marketing facilities, do not fight diseases, and have a special Experiment Station to study varieties.

[Written for Pacific Rural Press.]

Grapes are the most widely grown fruits in Imperial Valley, their chief use being for early shipment. There were 1,000 acres of bearing age the past season which produced \$200,000 worth of fruit according to Horticultural Commissioner F. W. Waite. Nearly 200 acres we know are definitely planned to be planted this spring, and there are probably many more. One man has contracted for 200,000 cuttings to plant near Dixie-land. Most of these acreages are small, being scattered in all parts of the Valley, but especially on the soft sandy loams about Brawley.

One big reason for Brawley's leadership is the Government vineyard there, in which 215 varieties have been growing under the management of Francis Heiny to find the ones most adaptable. Much of the soil at this Experiment Station is hard and alkaline. "The softest ground with the least alkali produces the best grapes," says Mr. Heiny. "Most of the dead vines on this place have been weakened by alkali and finished by the hot summer sun." Mr. Heiny, who has been here 12 years, points out that the absolute control of moisture in Imperial Valley permits regulation of maturity of wood at will, and allows the forcing of early grapes. Irrigation from early fall until mid-January, then cultivation to keep the ground fine and warm, are the principal means to get early grapes, irrigation of course being continued throughout the summer at 7 to 10 day intervals.

E. H. Erickson, who made better than \$250 per acre average for nine seasons, is planting 35 acres additional this spring, emphasizing the need of sandy soil. He also states with emphasis that the Brawley Fruit Exchange has always shipped through the California Fruit Exchange, and has always received the best net proceeds to the grower, of any shipper in the valley. Mr. Erickson points out that it is hard to get color on the grapes of the Valley.

Supt. W. E. Packard of the University Experiment Station at Meloland, and P. I. Dougherty, County Farm Adviser, point out that the relative failure of the hard lands for fruit is due largely to the fact that they do not take water well, but run together. They often contain an excess of alkali.

For Drying Purposes, we were able to find only a few growers, and they drying on a rather small scale. M. Manoogian of Mesquite Lake is the most extensive raisin drier, using mostly Muscats for the purpose. He dries some every year, but has to be careful or they dry hard. The grapes are left on paper trays in the sun six to eight days and then rolled to finish curing in the shade. They dry moderately well on the vines if left too long, but soon get hard. A. H. Hevener, not far from El Centro, makes a few fine Muscat raisins by drying on tables with mosquito netting to partially shade them. He notes that some days they will cook in the sun.

Varieties.—The Muscat is little grown in the Valley, because it is late in ripening (about July 20 for Mr. Manoogian) and they do not ship as well as several earlier varieties. Two or three strains of Muscats have shown promise as shipping grapes for Mr. Heiny. The Muscat Albardiens is almost as good a shipper as the Maraville de Malaga which is mentioned below. It has large, firm berries, loose clusters, fine flavor and color, bears quite heavily, and must be pruned long.

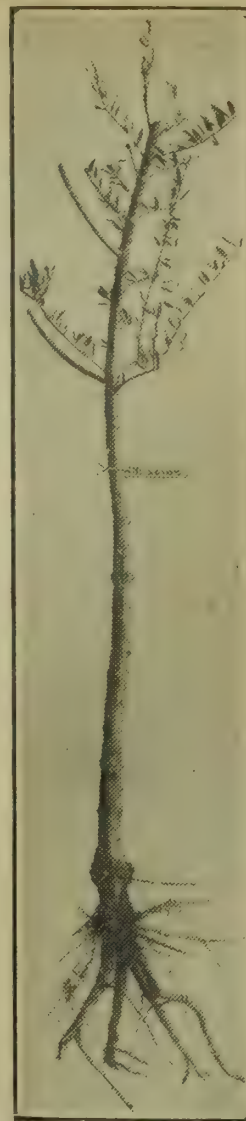
The Maraville de Malaga has shown great improvement over the common Malaga which is perhaps the most extensively grown variety in the Valley. The Maraville, according to Mr. Heiny, ripens early in July, is tough for shipment, colors bluish red when real ripe better than Tokays color, has large loose clusters which pack well, but the flavor is not superior. Mr. Erickson tells of keeping half a dozen varieties on a shelf in San Diego two weeks. At the end of this time, the Maraville de Malagas were in fine condition with perfect color. He also says they are more alkali-resistant than the common Malaga.

The common (Spanish) Malaga on sandy land, according to Mr. Erickson, ripens as soon as the Thompson seedless; and the berries do not fall off so badly in shipping; but the vine is more sensitive to alkali. Mr. Manoogian says it will stand more alkali than the Muscat, and the berries do not dry so soon on the vines. They ripen for Mr. Hevener July 11 to 15. Mr. Heiny notes that the Malaga makes lots of wood; but the fruit on his places is less sugary, does not color well, includes lots of waterberries, and is in compact bunches hard to pack.

Thompson Seedless seem next in favor perhaps, though there is more interest in some of the Persian varieties. The Thompson grows on a greater variety of soils than the Malaga, according to Mr. Heiny; but he and Mr. Erickson shipped Thompsons and Malagas in the same car that sold at 50 cents to \$1 more per crate for the Malagas than the Thompsons. This was a greater difference than usual of course. The Thompsons are sweeter.

Vahan Azhderian, who is working large vineyards of Thompsons and Malagas at Meloland, finds the Thompsons three weeks earlier than the Malagas, because, as he says, they start earlier and the thin-skinned smaller berries ripen first. Bigger yield and better carrying is credited to Thompsons than Muscats by Mr. Manoogian, though they must be picked at the legal minimum of sugar content or they will shatter off. They are 10 to 15 days earlier, and are better colored than Muscats.

The Earliest Variety planted commercially is the Persian 21, which ripens 10 to 15 days earlier than the Thompson, according to Mr. Azhderian. They look like Thompsons, but are softer, thinner-skinned, more watery, and have seeds. "One can eat more Persians than Thompsons,



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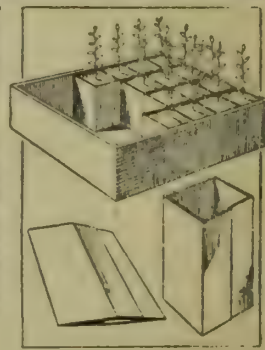
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however," says he. F. D. Hevener, with ¼ acre of long purple Persians, found that they bore well, on long stems, and were fine eating. Mr. Erickson declares that the Persians do not make enough fruit buds for a good crop, and Mr. Heiny advises pruning long to save all there are. The latter thinks they need a trellis but that a trellis would not pay, though the grapes are of fine flavor.

Sultanas bore a heavy sweet watery crop for Mr. Heiny. Zante currants made heavy growth but too small clusters to pay. Dattier de Beyrouth made fine growth and produced large loose clusters. He graft-

ed a lot of Malagas on his private vineyard to this variety, though it was not doing very well on the Station ground.

Diseases.—Phylloxera is not known, and rigid inspection is intended to keep it out. Mildew does not seem to worry the growers, and they have none of the "mysterious" vine diseases that worry growers in other sections.

The American Vineyard Co. recently purchased 1180 acres near Livingston for raisin grapes, principally Thompsons, and the planting is to be completed by the middle of March.

Planting Walnut Trees.

[Written for Pacific Rural Press.]

A man who has a reputation as a crank about the walnut trees he plants and how he plants them is W. D. McCroskey of Los Angeles county, who has a large acreage of all ages in the Chino district.

Having staked the field and selected and cared for the trees as told in other articles, he digs the holes some weeks ahead of the planting, to air out the soil. On 30 acres of Placentias planted late in the spring of 1915 without loss of a tree, hole digging began in January; and the last of the holes were left open nearly a month before planting. This was in an alfalfa field which was allowed to grow the first year.

A 1x6 about six feet long was notched at the center of one side and at the ends. It was laid north and south with the center notch at the stake. Then two stakes were set in the end notches and the hole dug 30 to 36 inches deep and two feet in diameter. Dirt was piled on the east and west sides for reasons told below, and subsoil separate from top soil. J. F. Donly, who dug the holes, says he averaged about 50 holes per 9 hours. The soil is a dark sandy loam about the same all the way down.

Trees were kept heeled in vertically until planted. Care was insisted on to prevent knocking buds off by rough handling. Trees for half a day's planting were taken from the trenches at once. Their roots were covered with canvas to prevent drying out. Every tree was closely inspected for crown gall, broken buds, blight blisters, or anything else that might nullify the expense of planting and culture. Bruised and broken roots were cut off smooth. The tops, which by contract were not less than 12 feet long, were cut back to not more than four feet tall, so their growth would shade the trunks from sunburn after the first year or two. Spindly trees were cut shorter. The cuts were made two or three inches above a bud so that when birds should perch on the cut end, they would not knock off the young shoot. By the time the

shoot was three inches long, the birds wouldn't hurt it. No top buds died in this orchard.

Setting the Trees.—Two men were needed in setting the trees. One shoveled in dirt enough so the tree would not stand deeper than in the nursery. The other held the tree in place until dirt enough had been placed and tamped around the tap root to hold the tree upright. The roots were then spread out like they were in the nursery and top-dirt packed around them, tramping it as soon as tramping would not skin the roots.

If there was any bow in the tree, its concave side was turned to the southwest against the prevailing wind and the whole tree was leaned toward the southwest to prevent the sun's rays from striking the trunk squarely and sunburning it. Heavy sandstorm winds from the south-east are not considered because they are so infrequent and of short duration. The leaning trees will be vertical in two or three years by force of wind.

Yucca protectors 30 inches high were used, and some of them are still on two years later. Corn was grown in the rows to wrap around the trunks to prevent freezing.

The ground was still moist when the trees were planted, and no water was applied until five or six inches growth had come. If the ground had been dry, he would have watered soon; but carefully, not to soak the ground and drive out all air, for Mr. McCroskey has in previous years lost trees by being "drowned out" at the start.

NEWLY SET WALNUTS.

To the Editor: Franquettes on black walnut roots have just been planted on my black sandy and medium heavy soil. Should they be cut down as low as 16 inches above ground and wax over cut? How should they be pruned when a year old, and when is the proper time to dehorn them? Do they sunburn easily? Is whitewash alone enough protection for them against very hot weather?—E. R. B., Santa Margarita.

Walnut trees are generally cut off at planting, about four feet high. The young trunks must be protected from sunburn; and whitewash is generally considered effective. Prune only to keep the tree clean and balanced. Never "dehorn." Wax the cuts or asphalt them if you have time.

CONTROL OF PEACH SCAB.

Self-boiled lime-sulphur and a solution of finely divided wettable sulphur, which is a mixture of superfine sulphur, glue and water, have been proved by experiments to be the best of known sprays in controlling peach scab, according to Bulletin 395 of the U. S. Dept. of Agr. The applications can be made in commercial orchards at a cost not exceeding five cents a tree and in certain experiments such sprayings have resulted in an increased profit per tree of about \$1.50. The spraying for scab can be combined advantageously with treatment for other diseases such as brown-rot and insects such as the plum curculio.

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Imperial Valley Date Culture

[Written for Pacific Rural Press by H. J. Bridges.]

About five miles northeast of Imperial, in the Imperial Valley, is a date grove belonging to Geo. E. Howe of Los Angeles and taken care of by C. H. Strowger of Imperial. Some of the trees are ten years old, and were nearly all started from the seed. Between the old trees which are set twenty-five feet apart are a number of younger seedlings which will be taken up and set in orchard form when old enough to tell whether male or female. It is impossible to tell until they bloom, which usually takes four years. The stems of the male trees are short and blossoms are crowded together, while the stems of the female or fruiting trees are long and blossoms are about one-half inch apart.

When the young female is found to bear good fruit, it is set out in orchard form, and in about two years, will throw out "offshoots" near the ground, which can be removed with the aid of a large chisel and sledge-hammer and thence planted in orchard form. A tree will in most cases throw out three of these shoots each year if they are not all taken off at one time. It is advisable to always leave one of the shoots, thus encouraging others to come out.

The fruit of the offshoots will always be the same as that of the mother tree.

Pruning can be done at any time of the year. However Mr. Strowger does most of his pruning between January and March. After pruning, the grove is plowed deep and cultivated thereafter three times during the year. They are irrigated once each week, the water being run down furrows on either side of the trees. According to Mr. Strowger, the date palm cannot get too much water.

Trees five years old will bear some and will continue to increase a little each year up to ten years when they will average two hundred pounds per tree. One tree bore five hundred pounds this year, but this is unusual and when such is the case, they almost always take a rest next year.

According to Mr. Strowger blooming starts in March and continues until June. During that time he must pollinize the blossoms at least twice every three days as there are only three days that each female blossom is open and can be pollinized.

When the pod which incloses the blossom starts to burst on the side, Mr. Strowger will cut a small piece from the top and insert a few male blossoms which he has carried from the male tree.

One male tree will furnish enough pollen for twenty-five female trees. The pollen from the male blossom inserted at the top of the pod will drop over the female blossoms below, thus fertilizing them.

Most of the fruit ripens in September and the bunches or clusters are so heavy that they must be tied up to keep from breaking off. After picking, the dates are spread on slat trays for three days, then packed in cartons and shipped to Los Angeles.

Mr. Howe has both the soft and dry varieties, and received forty and sixty cents per pound respectively at wholesale. Alkali is abundant in Mr. Howe's grove, but it does not affect the trees. There are hundreds of acres of similar land surrounding this grove.

The Control of Codling Moth.

[Written for Pacific Rural Press.]

"One to two per cent of our apples in the Yucaipa district had worms last year where the growers followed instructions about spraying. Fifty to sixty per cent were infested where instructions were not followed." That is the success of Horticultural Inspector J. B. Hundley's way of controlling codling moth in Yucaipa valley last year where over 5000 acres of apples and 200 or 300 of pears carpet the beautiful mesas. Only a small proportion of these bore fruit last year; but the success in spraying them has determined the growers and the county to give Mr. Hundley almost dictatorial powers on the 2000 acres that will bear this year.

A close inspection of the trees will be made by Mr. Hundley in the middle of March to forecast the number of worms and learn where they will be thickest. The larvae are overwintering in cocoons in protected places under bark or trash in orchards or in packing houses and boxes used last season. They will pupate about three weeks in the spring and emerge as moths which lay semi-transparent whitish eggs singly on the leaves. These are thin as tissue paper and smaller than a

pinhead; so it is hard to see them. Fifty or sixty trees per ten acres will be examined from several directions in order to catch the light just right to see them.

The eggs hatch in five to nine days, and Mr. Hundley wants the first spraying done before they hatch. The blossom petals are usually falling when the worms are hatching. The worms at once go to work on the young apples, almost entirely at the calyx end, whose leaflet lobes are then wide open. The calyxes must have some spray shot into them before they close a few days later; but it is not effective unless applied before the worms get there.

The first spray generally consists

of 2½ pounds dry arsenate of lead and 12 pounds atomic sulphur per 100 gallons of water. Dry arsenate is considered easier to handle. The sulphur is intended to stop mildew; and one application is usually enough. If it is bad, the sulphur is used with the later arsenate sprays. No scab is known on the Yucaipa fruit.

"It is not the brand of spray, but the method of its use that counts," says Mr. Hundley, who with an assistant this year, must inspect the spray rigs working. He aims to be with each rig twice a day. There were 24 power rigs in the valley last winter and several more were being bought by associations of growers. Only power sprayers at high pressure are allowed for this work, and the hose men must walk all around a tree to get every side and every apple. Spraying from one or two

sides only is not effective.

A second spray 10 days after the first takes care of the holdovers from the first brood. After that, the fruits only are watched for eggs of the second brood. Spraying must be repeated when they are found in numbers, for this brood and the next often get a crop on which all the expense of production is lost for lack of the extra spraying. Eggs of the third brood are then hunted, on the fruit. Last year some spraying had to be done Sept. 1. The third brood has been found ever since Mr. Hundley has been in the Valley—four years.

Fresno Horticultural Commissioner F. P. Roullard says that many fig nursery stock growers are not keeping careful record of the cuttings they are planting. Purchasers of trees not true to name can prosecute as long as seven years after buying the trees.

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FRUIT THRIPS EMERGING.

[Written for Pacific Rural Press.]

Now is the time to look out for thrips. It is time for the adults to be emerging from the ground ready to lay eggs in the soft tissues of developing buds. They may damage prunes, pears, plums, cherries, or peaches. Almonds and apricots are less damaged.

To tell easily when they are emerging, lay sheets of cheese cloth on the ground under fruit limbs. The insects can be seen crawling on the under sides of the sheets. If in great numbers, they are likely to do considerable damage. Eggs are laid through a period of several days. They hatch about five days after being laid and begin to feed, damaging and sometimes destroying the blossoms and more often damaging the fruit.

The good result of spraying was shown in an orchard near Campbell where the team on a spray rig ran away leaving 10 or 12 trees half sprayed. Six trees at the ends of those rows were sprayed. There was a striking difference on the sprayed halves of the 10 or 12 trees over their unsprayed halves.

W. H. Stuart finds larvae before he sprays. A hoop covered with black cloth is held under branches while they are tapped to shake the white pink-eyed worms out. He also looks for leaves crimped like frost-bitten or burnt which show the larvae are working.

Then a 3 per cent distillate emulsion mixed with a pint of Blackleaf 40 per 200 gallons of spray is applied with at least 175 pounds pressure and a Bordeaux nozzle. The force of such a nozzle knocks many thrips to the ground, the oil emulsion pierces the oily covering of the thrips' bodies, and the tobacco kills them. Stronger emulsion might injure the blossoms.

Spray should be applied from the bottom of the tree upward in order to touch all larvae, many of which otherwise would drop unharmed into cracks in the ground, to come out again next year.

SAVED BADLY SPLIT TREES.

[Written for Pacific Rural Press.]

A whirlwind split a young apricot tree to the ground for C. J. Oswald of Kern county, and laid the pieces flat in four directions, but all connected to the stump by strips of outer wood and bark. The trunk was about four inches in diameter. All the pieces were straightened back into place, the top cut back severely, and a $\frac{1}{2}$ -inch bolt put through the trunk where it seemed most useful. Holes were bored in the limbs big enough for a 3-16-inch wire to reach across. The wire was fastened by using washers on the outsides of the limbs and making the ends of the wires into knots to fit against the washers. Where the pieces did not fit the trunk closely because of splinters, the latter were cut out smoothly and all surfaces and cracks varnished. The cavity trimmed out is now partially covered with new growth, but must be filled in with cement and waterproofed with asphalt. The healing was not quite so smooth and strong as desirable on account of the work having been done by lantern and also because of the limbs working somewhat in the

wind; and one limb died; so another scheme was tried when another tree split off in two directions leaving the center too thin to hold the remainder of the top erect. It had considerable fruit, for these little whirlwinds come there only in summer.

After cutting back the top and refitting the split-off surfaces, the whole trunk was wrapped tightly with rope and the limbs braced as before. The rope was not loosened until the bark showed a tendency to grow between its coils. Then it was loosened slowly and the tree is in

good shape. This is much better than to lose the tree and have a long struggle trying to get another to grow in its place. The same system has saved several limbs also, that had been split off, and results demonstrate its success.

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"Less than 40% of the land in the country is reasonably well cultivated; less than 12% yields maximum returns. We had better frankly face the fact that we are relatively inefficient, take stock of our shortcomings and earnestly seek the remedy," says Sec'y Houston, U. S. Dept. Agriculture. And, the remedy? Better tillage. Liberate plant food, conserve moisture and aerate the soil, by thorough pulverizing with

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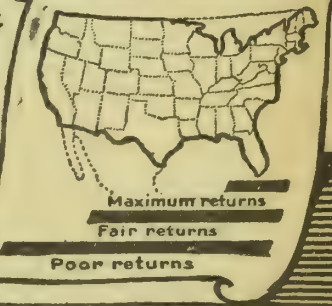
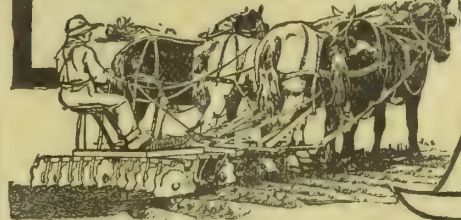
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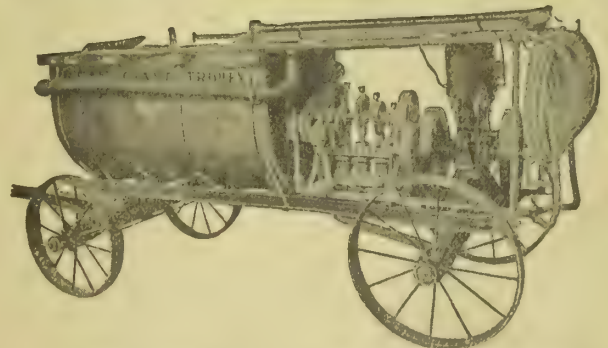
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SAN JOSE, CAL.

Cutworms in Vineyard.

To the Editor: Have you anything new for the cut worm in vineyards? I have always been against the use of poison mixtures; but when I lose 15 or 20 cars of grapes I need something. They tell me that after a few days the poison bait becomes harmless to chickens. One man tells me he used tanglefoot at \$1.25 per gallon successfully (cost \$40 for 15 acres). We turn up quite a few cutworms now around the base of vines. Blackbirds get lots of them.—J. G., Clovis.

Nothing is known better than poisoned bran applied at the right time and in the right place. We have never heard of chickens eating poisoned bran with impunity. Notice the economical way a grower uses tanglefoot for his fruit trees as told in a current issue of Pacific Rural Press. De Lano Bros. of Fresno use poisoned bran effectively while the buds are still hard, for the worms are working when buds swell. About

40 pounds of bran fixes six acres—a good tablespoonful per vine. One man applies it to four acres of vines per day, distributing the required amount by a swing with the hand on two sides of the vine so it will encircle the base of the vine, and putting some on top of the vine for the worms which stay all day under shaggy bark or in protected places. De Lano Bros. figure that the loss of two buds per vine would cost them more than the poisoning. Mix 40 pounds of bran dry with two pounds paris green. Mix about two gallons of molasses or sugar syrup in six gallons of lukewarm water and add slowly, mixing it well to get some poison on every flake. Since the bran is not attractive to worms if dry, some people mix in a little cheap glycerine to keep it moist and seductive.

Nurserymen's Association Notes.

Leonard Coates of Morganhill, president of the California Association of Nurserymen, issues an appeal to the membership thereof to get busy in these lines:

There has sprung up an organized effort to have appropriated by our State Legislature a sufficient sum of money for the establishment of an

experiment station (to be located at some point in California best suited for experimental and research work) in relation to deciduous fruits. The movement has been inaugurated after a careful consideration of the necessity and practicability of such an institution, and the equity of the use of State money for the purpose, in the light of the importance of deciduous fruit growing as compared with other branches of California agriculture. Will you write your representatives at Sacramento at once, just a line, urging them to support a bill for this purpose?

Dr. J. Eliot Coit has consented to address the Nurserymen's Convention in San Jose October 11 to 13, on "Selected or Recorded Fruit Trees," and Prof. E. B. Babcock will co-operate. Dr. Coit wishes the convention to go in a body to Berkeley from San Jose on Saturday, October 13, 1917, to be present at the Hilgard Hall dedication exercises, and Dr. Babcock would like us to take up the above subject with Dr. Coit at Berkeley on that day, instead of San Jose. Decision will be announced later.

MOVING BIG ORCHARD TREES

[Written for Pacific Rural Press.]

A dozen orange trees six inches in diameter, moved in February, 1909, by Otto Eisebraun of San Bernardino county, bore some fruit two years later and their tops are now nearly the size of the other trees of the same age and are bearing a good crop. The heads were entirely sawed off where the cuts would not be over two inches in diameter. A trench two feet deep was dug around each tree about three feet from the trunk. The main roots were chopped off and a long chisel was shoved between the roots to cut off the tap root. Mr. Eisebraun then loaded the tree on his back and carried it across the orchard. Each tree was marked so it was reset with its southwest side to the southwest, just on general principles. After planting, each tree got a barrel of water and a coat of whitewash to prevent sunburn.

The British Government has graciously consented to our exporting dried, preserved and canned fruits to Norway.



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The Most Generally Used Spray.

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"There is a Rex for every orchard trouble."

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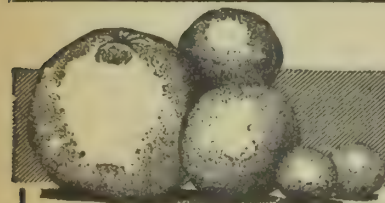
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PROFIT comes from fruit, not foliage. On Citrus fruits use immediately available

Nitrate of Soda

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Peaches:

Tuscan cling	1300
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Cherry:

Royal Anne	2500
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Apricots on Cot:

Royal	4500
Blenheim	3000
Tilton	2000

Prune on Myro:

Sugar	1300
Robe de Sargent	640
French (on Almond)	700

Plum on Myro:

Santa Rosa	330
Chinas	270
Satsuma	1000

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Yorba Linda, Cal.

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Visit our Sale Yard—542 South Hill St., Los Angeles, Cal.

Growing Quality Tomatoes Economically.

[Written for Pacific Rural Press.]

S. Dalforno of Merced county shipped 3500 20-pound boxes of tomatoes last year, having set out 14,000 plants on his adobe soil. He expects the same this year. His system of culture is worthy the attention of everyone who cares for quality in tomatoes.

The plants were transplanted in mid-February from hotbeds to cold frames, being set an inch deeper than they were in the hotbed, but not over the seed leaves. They were transplanted to the field in April when about 12 inches tall, having already in some cases had their laterals taken off. The plants were put one foot apart in trenches three feet apart and were set about six inches deep. A light irrigation was given at planting, the ground being cold. A stake about four feet high was placed beside each plant which was tied to its with coarse string. About 10 to 15 days after the first water-

ing, a heavier irrigation was given, as the ground was warmer then. Through the hot weather water was given every three or four days; since lack of water would permit sunburn. After the first irrigation, ground was cultivated toward the vines to keep water away from them.

As they grew, they were suckered three times in the season, leaving only one leader to grow up beside the stake. Its terminal bud was pinched off at four feet high and the energy of the plants went mostly into producing fine, big, smooth, clean fruit. If the plants were not tied to the stakes, they would be lying in the water, the tomatoes would be rotting, the vines tramped on in picking. The stakes and staking more than paid for themselves in increased quantity and quality of crop, as well as labor saved in picking. The tomatoes set in three distinct crops a foot apart on the vines.

BEANS FOR MADERA.

To the Editor: Which beans would you plant in the Madera district and how many pounds per acre? The soil is good and has been flooded, but there is no irrigation. Do black-eyes stand hot weather? How far apart do you plant seed in the row? Will April 1 be too early to plant?—Subscriber.

[Answered by J. E. Hawley, Madera.]

I have tried to raise pinks, little whites, and bayo beans, but did not have any success with any of them. Some of the neighbors, however, planted a little later than I did (about June) and raised a fair crop of pink beans by irrigating them; but the frost would sometimes catch a part of the crop before they had fully matured. About twenty-five pounds was planted to the acre here.

I have not seen the Tepary bean tried out in this locality yet. The blackeye is the best that I have tried or seen tried in this locality. Under favorable conditions they will mature excellent crops; will stand a great deal of abuse and yet mature something.

Plant the rows about thirty inches apart and three to four inches apart in the row, sowing about twenty-five pounds to the acre. Do not sow before May 15. The soil must be thoroughly warmed up before they should be planted, as they are a warm weather plant.

SOWS ALFALFA IN MARCH.

To the Editor: What is the latest date this spring that alfalfa can be planted on the high, red adobe, land near Nicholas, Sutter county?—L. M. G.

[Answered by E. A. Noyes, Sutter City, Cal.]

Have never sown alfalfa on such land as you describe. Have sown on sandy and black adobe lands. I always sow on this land when possible any time from Mar. 1 to Mar. 15. Have seeded land as late as April 12 and got splendid stand. Think your question best answered by saying it all depends on the lateness of the spring rains.

The great traveling exhibit of the Home Industry League of California will first be shown at San Jose Apr. 13 to 22. It will then be shown at Sacramento May 4 to 13.

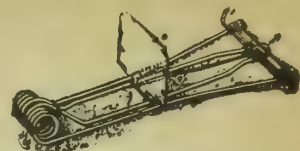
DISINFECT POTATOES BEFORE CUTTING.

To the Editor: In your issue of Feb. 17 you gave a formula for dipping potatoes to prevent scab. I have 10 sacks of seed potatoes ready to cut and intend to dip them after cutting. How many days after cutting are they dry enough for dipping? Can I seed them right away after dipping?—D. S., Marysville.

It will do no practical good to dry the pieces before dipping, and you can seed them as soon as you take them out of the formalin. But don't expect results if you won't follow directions. Our directions were to cut the seed after dipping and drying them dry. In cutting infected potatoes you will likely spread infection to cut surfaces which will stick together in the bath and not be disinfected.

A movement for dissolution of the Sacramento and San Joaquin Valley Drainage District was given impetus recently by organization of farmers in the Gridley district.

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Small, simple, sure. At all dealers. If your dealer does not handle it, send 20 cents in stamps and mention your dealer's name and get sample by mail postage paid. Write for prices in larger quantities delivered free by parcel post.

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Box P, Los Gatos, Cal.



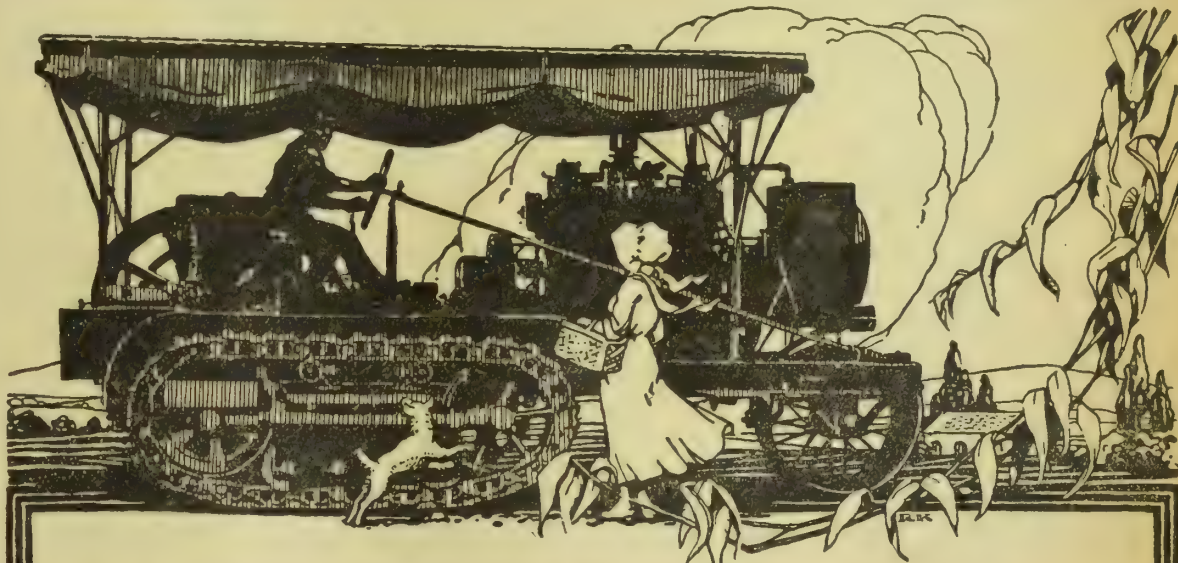
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Only trap having free passage. Will entirely rid your place of gophers in one season. Will catch all sizes. If you want a trap that will give results, try this one. If your dealer can't supply you, you will be sent postpaid for 50c; 3 traps, \$1.00. Circular free. A. SALOF & CO., 39140 39th Ave., Oakland, Cal.



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Grain Sorghums in California.

[Written for Pacific Rural Press by Prof. B. A. Madson, University of California.]

The rapid development of the livestock industry, together with more intensive methods of farming which have taken place during the past few years, has created a demand for crops which will produce a dependable quantity of feed and forage during the summer months. The crop which thus far has shown the most promise in filling this demand is the grain sorghums. Experience has shown that as a class they are excellently adapted to our climate, and are quite resistant to drouth. In a like manner they permit a considerable latitude in the choice of soil types so long as the seed bed is well prepared and the soil kept in good tilth throughout the early part of the growing season. Obviously, however, extremely heavy soils, because of the poor physical condition, or extremely sandy soils, because of their low water holding capacity, are not as desirable as the more free-working loam types.

In order to answer more fully some of the questions which have arisen regarding the adaptation of the various varieties, as well as the best methods for their production, a series of experiments with the grain sorghums were begun at the University Farm in 1914. While the information thus far obtained cannot be regarded as conclusive, the results may be of value to the farmer who is looking to the grain sorghum as a partial solution of his feed problem.

Varieties.—The variety test with grain sorghums included not only the common varieties but some of the more recent introductions as well. The average yields obtained for the past three years are given in the subjoined table.

Variety.	Yield per acre, lbs. Av. 3 years.
Durras:	
Dwarf Milo	3898
Standard Milo	3557
White Milo	3176
Brown Durra (Brown Egyptian)	3261
White Durra (White Egyptian)	

tian)	1279
Feterita	2491
Kafirs:	
Dwarf Black Hulled Kafir ..	2296
Early Black Hulled Kafir ..	1818
Black Hulled White Kafir ..	1676
White Kafir	1342
Red Kafir	1001
Pink Kafir	1883

Kaoliangs:	
Brachets Black Hulled Kaoliang	2520
White Kaoliang	698
Manchura Brown Kaoliang ..	2404
Brown Kaoliang	2962
Shallu	3542

Characters of the Groups.—It will be observed that the group headed "Durras" has, on the whole, given higher yields than either the Kafirs or the Kaoliangs. As a grain crop the Dwarf Milo has been far superior to any of the other varieties, being followed by Standard Milo, to which it is closely related.

The White and Brown Durras, which were the first grain sorghums to be introduced into California, both gave lower yields than the Yellow Milo. The extremely poor yield of the White Durra is due largely to the fact that it shatters badly and is also badly attacked by birds.

Feterita, a rather recent introduction, has created considerable interest during the past few years, but in this test has been inferior to both the Milo and the Brown Durra. Its seed is rather soft, and difficulty is often experienced in securing a good stand unless the conditions for germination are ideal, and this fact may account for the poor yield obtained.

All the varieties of Durras have been grown commercially in this State. As a class they are excellent grain crops, being early maturing and extremely drouth-resistant. Because of their dwarf stature, however, and dry, leafless stalks they cannot be recommended highly as forage crops, though the milos are better in this respect than the other types.

Of the Kafir group the only variety which has been grown to any

extent is the Black Hulled White Kafir, a rather large, leafy, later maturing variety. As a grain crop it is not as good as the Durras, but because of its leafy character and larger growth it is often preferred where both grain and forage are desired. The Dwarf and the Early Black Hulled Kafir are both selections of the former variety. They are earlier maturing and somewhat more drouth-resistant, and for this reason are usually more prolific in their yield of grain, but as forage crops they are little better than the Milos.

The Kaoliangs, or Chinese sorghums, have not been grown commercially in California as yet. As a class they are early maturing and are usually believed to require less heat than either the Kafirs or the Durras. If this is true, they might be of value at higher elevations or in sections where the growing season is too cold for the other types. Limited trials, however, are recommended before their production on a large scale is attempted.

Shallu, more commonly known as Egyptian wheat, has been grown to a considerable extent in various sections in the state. It is a large, relatively late maturing variety with very loose open heads. Where the moisture supply is abundant Shallu will usually produce good yields of grain. It has been found that on soil of poor physical condition it is usually easier to secure a stand with this variety than with the other types, which appears to be due to the high degree of vitality possessed by its seed. For this reason it is usually recommended for the more unfavorable soil types, but under favorable conditions, cannot compete with Milo.

Culture.—Though the grain sorghums are drouth-resistant we should not lose sight of the fact that the yield which will be obtained will usually be in proportion to the condition of the soil and the amount of moisture available. For this reason too much emphasis cannot be placed upon the storage and conservation of the moisture supply for the use of

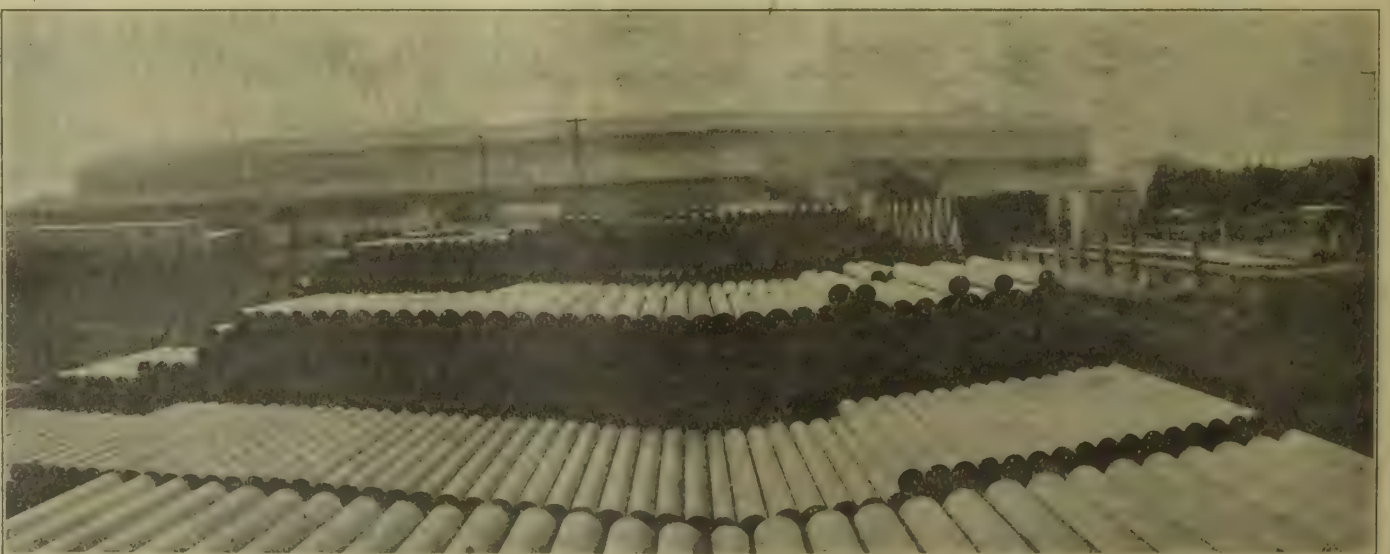
the crop during the growing season. When possible the land should be plowed in the fall or early winter to a depth of eight or ten inches and allowed to lie rough until spring. In this condition it will absorb a large proportion of the winter rainfall and will also be materially benefited by the weather action. Unless the field is very weedy no further treatment will be necessary until the seed bed is to be prepared, which can be done with a disc and harrow. If spring plowing becomes necessary it should be more shallow than fall plowing, otherwise too much moisture will be lost by evaporation and difficulty will be experienced in preparing the land for seeding. The seed bed itself should be firm with a smooth, uniform mulch of about two inches on the surface. This condition is imperative as the seed of the grain sorghums is rather soft and rots easily if the soil is too cold or porous, or the moisture supply insufficient for prompt germination.

The time of seeding varies to some extent with the location and the character of the soil, but it should not be done until the soil and atmosphere are quite warm. Results obtained at Davis indicate that it is seldom wise to attempt to plan before the middle of April, not later than the middle of May unless irrigation can be provided.

The common method of planting is to use a corn planter fitted with sorghum seed plates, the seed being drilled in rows three and a half feet apart, and spaced from four to eight inches in the row. The rate of seeding should always be in direct proportion to the supply of moisture, and the amount usually required will be from five to seven pounds per acre. In some cases the grain drill has been used for planting the crop by stopping up enough of the holes to give the proper spacing. This implement, however, is not to be recommended as it seeds both too heavily and too shallow for any but the most favorable conditions. The seed must be placed below the surface mulch in contact with moist soil where it will quickly absorb the water necessary

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for germination. This will usually be at a depth of from two to three inches. If the seed bed is rough and open, however, as is often the case on spring plowing, deeper planting may be necessary, though the maximum depth on normal soils is approximately four inches.

The attention necessary after the crop has been planted will depend upon the condition of the field and the season. While the plants are small any weed growth which may occur on the field can best be destroyed by the use of a harrow without severe injury to the crop. This implement may also be used for breaking the crust, but a better implement to use for this purpose is the corrugated or Dunham roller, the action of which will be less injurious to the plants. As soon as the plants are large enough so that the rows can be plainly seen, the field should be cultivated to a depth of four inches with a common two-horse corn cultivator. For this purpose an implement with rather small shovels is to be preferred since it is more effective in destroying young weeds, and leaves the mulch more uniform. Two to three similar cultivations should be given at intervals of two to three weeks, or until the plants begin to head, after which no further attention will be necessary.

When the seed is ripe the crop is usually harvested by hand, cutting off the heads and spreading them out in a dry place to cure before threshing. A good practice in curing the heads is to spread straw on the ground to a depth of six to eight inches and then to spread the heads on the straw to a depth of not more than one foot. This curing process is necessary to prevent the seed from heating when placed in sacks. When taken from the curing beds the straw may be run through the machine with the grain, thus preventing the usual loss due to shattering.

Grain Sorghums in the Rotation.—The use of the grain sorghums in the rotation has been a rather perplexing problem to some, especially as they have the unsavory reputation of being "hard on the land." Just why this is true is not definitely known, but it has often been observed that when the sorghums are followed by a rapid-growing crop such as barley, that the yield of the latter will not be as good as if preceded by some crop other than sorghums. Tests at the University Farm, however, have shown that if a couple of months elapse between the time the sorghum is removed and the seeding of the barley, no detrimental results will follow. It is usually advisable, however, to plow up the sorghum stubble as soon as the crop has been removed as aeration will then be more thorough and the injurious effect more readily overcome.

Another system of cropping which is finding some favor where irrigation can be practiced is to utilize the grain sorghums as a second crop following grain hay. The hay crop is removed in May or early June and the land irrigated and plowed and planted to sorghum. For this purpose an early maturing variety such as Milo, White Egyptian or Feterita should be employed to avoid the danger of the crop being injured by frost in the fall before maturity. If these varieties can be planted before

June 15th they will usually mature in most sections of the State before fall frosts occur.

Value as Feed.—But little information concerning the feeding value of the grain sorghums is available, especially as compared with the more common cereals. Such experiments as have been conducted, however, indicate that whether fed as grain or in the form of fodder, stover, or silage, they compare favorably with corn. As a grain feed it is pretty well understood that there is some difference in value between the various varieties. Brown Durra and Kafir are prone to have a constipating effect on the digestive system of animals unless fed with a more laxative feed such as oil meal or alfalfa. With the White Durra and the Milos, however, no effect of this character has been noted, a fact which renders these varieties especially desirable as poultry feeds.

The utilization of the grain sorghums as a feed for farm animals is of the utmost importance as it will unquestionably prove to be the most profitable disposition which can be made of the crop. From the results thus far obtained there is every reason to believe that as the use of the crop becomes better understood it may in time hold the same place in the semi-arid West as that held by corn in the corn belt.

COAST POTATO GROWING.

[Written for Pacific Rural Press.]

While potatoes are not his main crop, in fact are only incidental to his dairy operations, J. D. Williams of Bodega, Sonoma county, always has a few acres planted to that crop despite the fact that commercial potato growing on a large scale was abandoned in the section years ago because of decreased fertility from continuous cropping.

Potato planting with Mr. Williams begins in May or the first part of June according to the season, after the land has been put in first-class condition by two plowings and liberal harrowing. If the ground is a little rough it is gone over with a roller to break up all clods.

Before plowing in the spring, usually about February 1 or a little earlier, the land is treated to a heavy coating of barnyard manure. This enriches the soil but does not damage the tubers as it would if applied immediately before planting. To further increase the fertility commercial fertilizer has been used in the hills at planting time some years.

Golden Coin is the variety which has produced the heaviest and most desirable tubers under Mr. Williams' conditions, good clean seed being purchased each year.

Thorough cultivation is practiced as soon as the plants are above the ground till such time as they cover the ground, the tubers ripening in October or November.

The yield the past year averaged about 87 sacks to the acre and owing to the high market prices that have prevailed most all of them were marketed. Ordinarily, however, they are graded in the field into two sizes, the smaller ones being used for cow feed in years of low prices, as Mr. Williams has found them to be an excellent feed for dairy cows in connection with other feeds.

SUPPORT UNIVERSITY FARM.

After careful consideration of all the facts available with reference to the University Farm, the Sacramento Valley Development Ass'n strongly recommends appropriation by the Legislature of \$250,000 substantially as recommended by Dean Thos. F. Hunt of the College of Agriculture. The items are given below:

Creamery	\$100,000
Building and Equipment for Animal Husbandry	60,000
Water supply, irrigation, distribution, sewerage disposal and fire protection	15,000
Minor structures and repairs	15,000
Agricultural Engineering	50,000
Green houses	10,000
Total	\$250,000

Says the Development Ass'n: "We believe that the importance of the work at Davis warrants the large amounts asked in these bills. This work is educating the farmers of this State and the young men of the State who are going to be farmers. The increased appropriations for which



A Yuba Tractor

coasts like a sled. Most of the power generated by the engine is delivered at the draw-bar—where you need it.

The rigid steel frame travels over highly polished steel balls. The track is rigid—and there's no slack to take up—the force isn't wasted—it's conserved.

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ALFALFA
250 lbs. of Mococho Superphosphate per acre will increase the yield of alfalfa enormously. "In some cases the alfalfa growth has been tripled," writes Mr. F. F. Lyons, San Joaquin Co. Farm Adviser. Write for particulars.
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we ask are principally designed to benefit the dairy industry and the poultry industry and to provide adequately for construction and research work in agricultural engineering. These are among the most important elements of California agriculture and they affect practically every farmer in the State."

Wyoming is following California by starting a movement for the State to provide a revolving fund to make necessary improvements for settlers on irrigation projects.

1842 The Seventy-Fifth Anniversary of 1917



LIGHT DRAFT PLOW

Built for the Field Test.

Three-Quarters of a Century of "Knowing How" Hammered Into Every One of Them.

The product of the Parlin & Orendorff Co. has always been noted for simplicity of construction, great strength and ease of operation. It was upon such a basis that the founders of this business made their implements, established their reputation, and built their factory. It is upon the same foundation that the business has been carried on to this day, and in 1917 we celebrate our Diamond Jubilee; 75 years of practical experience gained through constantly striving to provide for the exacting requirements of three generations of American farmers.

For an even three-quarters of a century we have met the demand, and today we operate the largest and oldest permanently established plow factory in the whole world. "It's the way we build them."



Light Draft Plows, Harrows, Planters and Cultivators are made in all types and sizes, to meet the conditions in all sections, and are Backed by an Unqualified Guarantee.

We also make the most complete line of Tractor Engine Plows produced, and we have a special catalog devoted to these famous plows.

The P & O Little Genius Engine Gang Plow

was the most popular plow shown at all points on the 1916 National Tractor Demonstration.

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solves the garden labor problem. Takes the place of many tools—stored in small space. Sows, covers, cultivates, weeds, ridges, etc., better than old-time tools. A woman, boy or girl can push it and do a day's hand-work in 60 minutes. 88 combinations. \$3.25 to \$15.00. Write for booklet.

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KANOUSE & FORTY, General Agents,
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Senator Sorghum, a California Pioneer.

(Continued from first page.)

better than Salazar's—granulating well and making an excellent quality of white sugar," but nothing is said about the process which made it white! True sugar cane has been growing in small quantities in many parts of the State since that time, but has never reached commercial standing except for chewing. Incidentally, it should be noted that in 1857 a small exhibit of beet sugar was made at the State Fair and thus began the long and interesting experience in winning for California priority in this country in the commercial use of the beet for sugar—but that is another story.

The "Chinese Sugar Cane" Tragedy.—It was probably due to the fact that early Californians had eye and heart on true tropical sugar cane, for the reasons just stated, that the State fell so precipitately into the saccharine-sorghum delusion. There was in 1855 a large introduction by the U. S. Patent Office of sorghum seed from China under the name "Chinese Sugar Cane." Wide distribution was made in this State, for California even then had a reputation as the place where everything wonderful came through to perfection. For this reason the country expected more from Chinese sugar cane in this State than in other parts of the country where free distribution of seed was also made. So far as the growth of the plant is concerned this anticipation was fully realized. In his address at the State Fair in September, 1857, William Garrard, president of the State Agricultural Society, said this:

Of the Chinese sugar cane, out of many packages of seed distributed by our society, not an instance is known where the crop failed to mature whether irrigated or not, and in some localities, as at Mr. Campbell's on Kings river, it has reached a perfection unknown in other States.

In September, 1858, the California Culturist, a pioneer journal, generalized and specified as follows:

The Sorgho or Chinese sugar cane so widely distributed within the last three years, so highly valued by many and condemned as worthless by not a few, at least in the Atlantic States, has had during the last two years very fair trial in California and from every section of the State the most flattering reports have been received. As far north as Tehama county, Newell Hall has grown the plant to perfection and with a very simple arrangement for expressing and concentrating the juice has made a very good quality of syrup, fully equal to any molasses of commerce.

In that year also B. D. Wilson grew in the San Gabriel valley forty acres and was credited with being "entirely successful in making syrup and sugar from Chinese sugar cane." Also at the State Fair of 1858, J. C. Fall, president of the society, said this:

Successful experiments upon the growth of sorghum justify the qualifying expectation of those who have turned their attention to that praiseworthy and remunerative branch of husbandry, the manufacture of sugar.

The wish fathered the thought, for California was then importing about five million dollars' worth of sugar a year from Central America, Hawaii and Manila, and from the Eastern refineries also. It seemed to be game worth bagging. Ordinarily prizes were given for cane

samples at the State fair, and in 1859 there were "several kinds of cane crushers on sale in San Francisco." Evidently heavier guns must be used to get the game! The State legislature in 1863 passed a law to see if home-grown sugar could be legislated into being. The first thing mentioned in this law was this:

For 100 bags, of 100 lbs. each, of sugar from sorghum the State will pay a bounty of \$500; for the second year, \$250; for the third year, \$150; for the fourth year, \$100. For the first 200 bbls. of molasses from sorghum, \$200. The same awards are for sugar from the sugar cane and from the beet; for 200 bbls. of molasses from sugar cane, \$500.

None of these bounties were ever claimed and the law was repealed in 1871. Before that, however, viz., in 1867, the game was counted up, for in that year H. D. Dunn wrote:

Chinese sugar cane or sorghum has been cultivated to a comparatively large extent in previous years. The difficulties attending the making of syrup by new hands and the large expense entailed by way of machinery and pans has been a great drawback to its culture. So far as known no sugar of consequence has been made and as a general rule, from the ignorance of those making it, the quality of the syrup offered in this market has been quite inferior and slow of sale at unremunerative prices.

There was a revival of interest in sorghum molasses during the latter '70s and early '80s when Peter Collier's quest for sorghum and corn stalk sugar was causing large expenditures for laboratories and factories to secure sugar for 1c. per lb., improved varieties were introduced and some sorghum molasses was made with little profit, as in fact there has been scattered small production ever since, but the life really went out of sorghum as the basis of a sugar industry for California nearly half a century ago.

Sorghum for Forage not Sugar.—But though the play of sorghum sweets for mankind turned out to be an industrial tragedy sooner here than elsewhere, it was early seen that for other purposes California had made a great gain by securing the plant; and to note that, requires turning back over the years which denied the sugar. In 1857, in the midst of the sweetest anticipations, in his State Fair address Henry Eno of Campo Seco, Calaveras county, voiced this foresight:

If Chinese sugar cane cannot be successfully cultivated for the making of sugar and molasses it is believed it will prove of immense value for forage and that if cultivated for that purpose alone it will well repay the labor of the farmer. At least two crops can be raised in a year. I have known it this year, planted May 10, to have reached a height of 10½ feet by August. It was then cut down and a second growth started which was six feet high in September. It was irrigated.

And a year later Elam Brown of Lafayette, Contra Costa county, declared that he had "found no other known plant at present grown in California that can equal Chinese cane. Whether profitable as a plant to be converted into syrup or not, its value as food for stock will secure it a permanent place in our list of valuable farm products." And in the same year B. D. Wilson of Los Angeles county, who had forty acres

790 Bushels of Potatoes

**PER ACRE, THE LARGEST CROP
ON RECORD IN THE U. S.**

Were grown in California and awarded Grand Prize by International Jury, P. P. I. E. Not only was this the largest crop, but the quality was especially fine, bringing a price considerably above the market. The grower attributed a good part of his success to the use of

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The average crop of California is about 150 bushels. What do you get?

W. V. Shear, Potato Expert, says: "Don't try to save money by adopting cheap methods to cut from cost of production. Is it not good business practice to spend enough money to produce a good crop and make money on the investment rather than use cheap methods and lose money?"

Fertilizing is not an expense, but an investment, yielding immediate returns.

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and is credited above with making sugar from it, adds this: "The produce of the cane is abundant beyond anything ever experienced, either as to its yield as cane, as fodder for cattle or seed which fowls eat with avidity."

The Non-Saccharine Sorghums.—During the sugary struggle above outlined, Californians had acquired about all the sorghum varieties which made any claim to saccharine standing, from the original Imphee, renamed in this country like the Early Amber of the great sorghum apostle Cyrus Kenny of Minnesota to the Early Orange of Collier, etc., and it is upon these and other offshoots from the old "Chinese sugar cane" that the foregoing conclusions on forage and seed values were based and are to some extent still predicated. But since they passed the zenith of their fleeting fame, as sugar producers, another and quite different branch of the sorghum family has come into greater prominence than the earlier branch ever reached, and is now advancing into still greater public service and importance. From their having neither record, ambition nor prospect in sugar lines they have been called the "non-saccharine sorghums." Their value is in grain and forage—the latter green, dried or siloed.

California Priority with Durra.—Prof. E. G. Montgomery in his book, "The Corn Crops," says: "The cultivation of non-saccharine sorghums dates from the introduction of white durra and brown durra into California in 1874 and the introduction of kafir in 1876, but they were not generally distributed until about ten years later."

This concession to California of priority in the introduction of the variety which we have always affectionately called "gyp corn," is based apparently on the fact that in its issue of September 19, 1874, the Pacific Rural Press described Egyptian corn as grown by R. J. Trumbull of San Rafael from seed which he, as a dealer in seeds, had introduced at the suggestion of Dr. J. S. Silver, "who had tested the grain in Egypt." We remember Dr. Silver as a picturesque old Californian of globe-trotting propensities who was always ransacking the earth for things which might be good for California. It is perfectly natural that he should have prompted this introduction. In our account of September 19, 1874, the plant is spoken of as an "agricultural curiosity" and described in detail, including its "bunches of grain hanging downward."

But we are not absolutely sure that the above mentioned introduction was really the first. Upon the publication of detailed accounts at the date stated, with full description of the plant, "gooseneck" and all, the San Diego News said that a party in that county has been growing it in a small way since 1863, and considered "one acre of Egyptian worth 25 acres of barley because one can irrigate that much from a well and keep two or three horses and several milch cows every year independent of drouth." It is possible that he had one of the old saccharine sorghums—but perhaps he really had durra. However that may be, it is not the first of its kind. A sturdy pioneer, Stephen Cooper, who was honored by his contemporaries as

the man who broke the first trail from the East over the Rockies to New Mexico in 1822, was resting from such labors on his farm near Colusa in 1858 and we have the record that he said in that year: "I grow Chinese sugar cane and Egyptian millet. They are much alike, but I prefer the latter both for grain and fodder."

We have also a statement of September, 1871, that Gorman & Sweet of John Day river, Eastern Oregon, had been growing "English rice corn, with grain growing not in the ear but on the tassel" which was good for stock and "yielded 80 bushels per acre where Indian corn yields but 30 bushels." They received 21 seeds in a letter from the Eastern States to start with. Now "rice corn" is an old name for durra and perhaps this is what they were growing in the later 60s.

In fact it seems likely that Prof. Montgomery was in error in dating the growth of durra from its introduction to California, for we have before us Killebrew's "Grasses, Cereals and Forage Plants," published at Nashville in 1878, in which, speaking of durra, he says: "About 25 or 30 years ago it could be seen on the plantation of almost every farmer in Tennessee. It gave very general satisfaction and yet it went out as suddenly as it came into popularity. This was due to the cry that it impoverished the land; a verdict which was accepted without question, and its culture was abandoned." It is possible that all the introductions to California and Oregon previous to 1874, which we have cited above, came from this discard in the Tennessee-Missouri region, which Col. Killebrew noted much earlier than the California direct importation of seed from Egypt; also that its killing the land for a following crop, of which the Imperial valley growers made such loud outcry some years ago, is not very new either; nor very true, if the crop and the land are skillfully handled.

California Gives Grain Sorghums a New Start.—It is, however, more important and true that California gave the non-saccharine sorghums a new start and a winning start—just as it did that other royal plant, alfalfa. This new start in California in the '70s was quick and strong. Before the end of the decade it was widely grown and appreciated. Isaac A. Grout, in January, 1878, wrote:

I was first to introduce Egyptian corn to the Central California Colony, but farmers outside planted it on small scale with great success. I consider it the best crop for the valley as it requires but little water.

It was then at this pioneer colony of the Fresno district that grain and forage sorghums first demonstrated adaptation to the needs of small farmers in our interior valleys, which is conspicuous to this day. And it was upon the demonstration by the colonists that large production was later undertaken and found profitable. But in California the planting of sorghums has usually been for temporary needs, the land soon going into alfalfa or fruit growing. For this reason the crop in this State has not reached the large figures of Kansas, Oklahoma and Texas—the four States indicated constituting nearly the whole grain and forage production of this country—largely because in the southern extensions of

We Manufacture Levelers for any Power

A Schmeiser Leveler of the "Giant" Type will work wonders on your farm



MOVING immense amounts of dirt daily, and working on ground too tough for horses and Fresnos to tackle, **SCHMEISER POWER LAND LEVELERS** are now being used with utmost success by a great many ranchers, large and small—also by contractors—saving their owners time, labor and money.

So extremely simple, a child could operate one, as a simple twist of the wrist raises and lowers the bucket or holds it stationary as the case may require.

SEND TODAY FOR FULL INFORMATION AND OUR LATEST CATALOG OF EARTH MOVING MACHINES.

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This is one of the best-known forage crops used in the Southern and Middle Western States. It grows from 5 to 10 feet high and will produce four crops of hay under irrigation and usually two crops without irrigation. It thrives in the valley and foothill sections of California. It yields more to the acre than any forage crop we know of, and the quality of the hay is excellent. The stock of this seed is short and we anticipate higher prices in the near future.

BUY NOW—lb. 50c; 10 lbs. \$4.00; 100 lbs. \$35.00.

Alfalfa Seed

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This is our best grade of common Chilian alfalfa seed. On every test this brand of Alfalfa Seed has surpassed all others. We do not believe its equal can be had elsewhere. When buying this grade you are not paying for any weeds or chaff. It is the cheapest to plant because it is the best. Send for price and sample.

We also offer superior stocks of **GRIMM, HAIRY** and **SMOOTH PERUVIAN** and **TURKESTAN** Alfalfa Seed.

SEED POTATOES

Splendid stock of **OREGON GROWN** American Wonder, Early Rose and Garnet Chili Seed Potatoes. These are all good early varieties. Write for prices and quantities desired.

1917 SEED CATALOG—IT IS FREE—SEND FOR IT.

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the Indian corn belt into regions where peat is high and the air scant of moisture, sorghum is more dependable and productive than malze.

Present aspects of the grain and forage sorghums in California are sketched by Prof. Madson, of the University Farm in article on page 298.

Prominent bankers of Sacramento are urging the establishment of a

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58 SUTTER ST., SAN FRANCISCO, CAL.

beet sugar factory in that city. They state that the country adjacent is well suited to sugar beet culture and urge farmers to experiment with that crop.

WHAT EVERY FARMER WANTS

Cheap and Efficient Transportation His Great Need—How It Can Best Be Assured.

THE present situation of the railroads presents two alternatives, efficient federal regulation or federal ownership.

The experience of other countries proves conclusively that government ownership of railroads is more costly and less efficient than the system of private ownership in this country. The railroads of the United States have the lowest freight rates, the smallest capitalization per mile, the highest operating efficiency, and pay the highest wages of any railroads in the world.

High Rates on Government Roads

The charge for hauling a ton of freight one mile on the government owned roads of various countries and on privately owned roads of the United States is shown in the following table:

	Average Freight rate per ton mile
Germany (Gov't Railways)	1.24 cent
France "	1.30 cent
Australia "	
New South Wales "	1.59 cent
South Australia "	1.75 cent
Switzerland "	2.63 cent
Canada (Private ownership)	.76 cent
United States "	.73 cent

No railway system under government ownership can show a record for cheapness and service approaching that of American Railroads under private ownership. What the railroad situation needs is the adoption of a system of national regulation that will encourage initiative and investment and enable the carriers to meet the growing requirements of American business.

Keep Railroads Out of Politics and Politics Out of the Railroads

It is to the interest of the railroads and the interest of the whole country that the railroads keep out of politics and that politics be kept out of their management.

Government ownership under our political system would make the control of the railroads a partisan issue at every election. It would bring political and economic disaster.

No man in the country stands to lose more by the adoption of a political system of railroad management than the farmer. None will profit more from efficient national regulation that will do away with the present conflicts and waste of local control and enable the railroads to make the extensions and improvements necessary to keep pace with the business progress of the nation.

We invite discussion of this question and shall be glad to answer questions and to supply information on request.

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General Agricultural Review.

OF GENERAL INTEREST.

Fresno Fair October 1 to 6, 1917.
Fresno Pure Food and Household Show Mar. 21 to 31.

Butte county farmers and business men have been seeking a farm adviser.

Potash production in U. S. in 1916 was 10 times as great as in the preceding year.

Kings County Fair is to be held at Hanford during the week beginning Sept. 24.

Machinery for a potash fertilizer plant is on the grounds at Mayfield, Santa Clara county.

The Healdsburg High School Agricultural Club recently formed will contest in potato growing.

Boycotts of high-priced provisions have sent the prices tumbling not only in Eastern cities but also in the West.

A total of 2780 vessels with cargo of 11,652,405 tons passed through Panama canal between Aug. 15, 1914, and Jan. 1, 1917.

The State experimental dry farm in Elko county, Nev., is to revert to the county if a bill passed by the senate becomes a law.

The Nevada State Legislature has asked Congress to build a military-commercial highway through Feather River Canyon from Nevada.

An appropriation of \$5,000 per year is asked for State weed control work under direction of the State Horticultural Commission.

Public subscriptions to the twelve district federal farm loan banks was \$130,000, leaving \$8,870,000 to be taken up by the Government.

A ten-acre experiment farm near Calipatria is to be planted with every kind of tree or plant likely to show promise of profitability.

Chico business men have guaranteed the Butte County Spring Exposition up to \$5,000 in case they stand a loss due to weather, fire, etc.

Ninety-three per cent of all the water for which the State Water Commission received applications in the past two years was for agricultural purposes.

San Joaquin Valley assessment values of agricultural products were increased 40 to 100 per cent as agreed by assessors in a meeting at Fresno recently.

The proposal to divert the waste water of the Alamo for use in District 3 of Imperial Valley is being opposed by growers in the north and who get this water free of charge.

The Reno, Nevada, Rotary Club is boosting for the bill before Congress to prevent railroads charging more for a short than for a longer haul on the same line in the same direction.

A district fair for Southern California will be staged at Exposition Park, Los Angeles, next fall if a bill in the Legislature providing a revolving fund of \$100,000 for the purpose is passed.

"It is just as important for the farmer's wife to understand something about agriculture as about domestic science," says Dean Thos. Forsythe Hunt of the California College of Agriculture.

It is said that there are in Los Angeles county 65,000 colonies of bees and that the output of honey and beeswax is worth \$175,000. Profitable and healthful employment is given to 2500 persons.

Bonds of the Alpaugh Irrigation District to the amount of \$180,000 have been validated by the State Bonding Commission and the securities have been sold to Aronson-Gale Company of Los Angeles.

At the California Wild Flower Show to be held in San Francisco April 24 to 28, 1000 different kinds of wild flowers are expected, and they will all be labeled with their com-

mon and scientific names. Last year there were 900 kinds.

The State Agricultural Society has elected these officers for the ensuing year: President, J. M. Perry, of Stockton; vice-president, Ellis Franklin, of Colfax; secretary, C. W. Paine of Sacramento; treasurer, I. L. Borden, of San Francisco.

Pests were intercepted by the State Horticultural Quarantine office in January, 1917, from the following countries: China, Hawaii, Japan, Java, Holland, Sydney, and Mexico, and from the States of Ohio, Idaho, Oregon, Texas, and Kansas.

It is proposed to line 100 of the 145 miles of ditches in the Orland project with cement, the Government to pay the bills and charge the cost to the property to be paid back in 19 annual installments. This would make the cost of the total irrigation project \$55 per acre.

The Western Pacific Railway is authorized to buy a controlling interest in the Tidewater Southern Ry., which will let the Western Pacific still farther into San Joaquin Valley. There are also rumors that they expect to extend to Mendota and thence through Panoche Pass to Hollister and Monterey.

Where moisture is the limiting factor, the conservation of one inch of rainfall is equal to about 2½ bushels of wheat per acre or its equivalent in other crops, says Henry Holtz of the Washington Experiment Station. Early spring disking and plowing and harrowing are the first means of saving the moisture.

The disgraceful, degrading, and humiliating gambling wheels, teddy bear outfits, etc., that teach children at our State and county fairs the way to get something for nothing, are not to be allowed at the traveling expositions of the Home Industry League of California to be held in all big cities of the State this summer.

The Chamber of Commerce of Santa Ana at a meeting last week passed a resolution opposing the bill now before the State Legislature to put all commission merchants under the jurisdiction of the State Market Director, unless the measure makes it plain that co-operative associations, such as the walnut and citrus interests, are exempt.

The Reclamation Protective Association was organized in Sacramento recently by representatives of 14 counties in the Sacramento and San Joaquin Drainage District. Its executive committee is working for the bill in the Legislature which would permit an election in the 14 counties to determine whether the District will be abolished. The Ass'n opposes the assessing powers of the State Reclamation Board and is circulating petitions to that effect.

The Southern Pacific Land Company of San Francisco has applied to the State Water Commission for 2½ cubic ft. per second of the waters of Millard Canyon near Cabazon in Riverside county for the irrigation of 550 acres. It is proposed to construct a concrete weir dam four hundred feet across the wash with its top level with the stream bed and the bottom extending 10 feet below to impervious strata underlying the stream, for the purpose of cutting off the percolating waters. The estimated cost is \$26,000.

GRAINS AND FIELD CROPS.

An increase of 300 per cent is reported in the acreage of potatoes planted this year around Ventura.

News comes from Van Nuys that packers there are offering to contract tomatoes at \$10.00 per ton the coming season.

Several hundred acres of grain were flooded recently by the breaking of the Lovelace levee in the Tulare Lake region.

Bean buyers are in the field in Sutter and Butte county offering to contract for 1917 crop of Lady Washington beans on a seven-cent basis.

A thousand sacks of Australian wheat were recently unloaded by the Sperry Flour Co. Part of this will be planted on their experimental farm at Farmington.

Spraying is recommended by U. S. Dept. Agr. for sugar beet thrips. Apply nicotine sulphate 6 oz.; fish oil soap 4 lbs.; water 50 gallons—to both sides of the leaves.

The demand and price of rice is improving for both paddy and cleaned. Past prices have discouraged large plantings and it is said that this year's acreage will be much less than last.

It is said that the importations of sugar-beet seed exceed any previous season by 50 per cent. Allen G. Freeman, of San Francisco, says 175,000 bags of seed have been brought into the country so far.

Oxnard reports a recent sale of a car of lima beans there by a grower at \$11.25 per cwt. One rancher who needed more seed than he had saved was asked \$11.50 per cwt., but said that he would plant his land to beets before he would pay that price.

It is said that potato growers around Monrovia are rolling in wealth. One grower is said to have made \$5,000 on a twenty-acre patch. Most of the growers sold their crops in the field at \$2.25@2.50 per cwt., while those that held got \$3.50 per cwt.

Howard K. Pendleton, a Sutter county farmer, allowed an orphan boy working for him to farm a little over two acres on his own account the past season. He planted it in potatoes. He marketed the crop the other day and presented the proceeds, \$1,500, to the boy.

It is reported from Ventura that C. E. Riley of Tulare county, conducting large rice fields near the Tulare Lake bottom for some years past with great success, is investigating land in the Point Magu district which is thought particularly adapted to rice growing.

It is said that growers have contracted with the American Beet Sugar Company for 36,000 acres of beets this year, an increase of 6,000 acres over last year. The acreage in the Oxnard district is 15,000 this year, against 12,000 last year. To this must be added 1500 acres at Newhall which is a new field for beet growing. Much replanting has been necessary this year because of the cold weather. In the San Fernando Valley replanting has been especially heavy.

A peculiar suit coming from the present excitement in the lima bean market has come to light from Oxnard. The J. M. Waterman Selling Agency at Oxnard is seeking an order restraining a local bean rancher from selling his estimated crop this year, put at 9,000 sacks, to any other than the Waterman Agency. It is alleged that on January 30 a contract was closed for his coming crop at \$6.60 per cwt. But since the recent jump in lima bean prices, he has notified the Waterman Agency that he will not live up to his contract.

CITRUS, OLIVES, FIGS, ETC.

The Santiago Orange Growers' Ass'n in Orange County has decided to put up a new packing house, ice-plant, and precooling plant.

Citrus Convention Riverside June 4 to 9 under auspices of State Horticultural Commission, University of California, and the Citrus Experiment Station.

The Lindsay Ripe Olive Co. is considering an addition to its plant so that tomatoes may be canned. Final plans await the signing up of the necessary acreage.

Orange Day March 10. Eat oranges! The Salt Lake Route is giving its patrons orange and lemon recipe books to stimulate consumption by describing a multitude of uses.

A State Fig Growers' Organization seems nearly assured. Many local associations are being formed to hold up contract prices for this year. In Stanislaus county they are holding for 12½ cents.

Because the power of appointing directors of district agricultural fairs is in the hands of the Governor of the State, and the further fact that agricultural district fairs are supposed to be perpetual, State Corporation Secretary Robt. Jordan refused to grant a request for the incorporation of the Napa Agricultural Ass'n.

What is the actual value of a good orange grove? Is a question that is just now agitating the San Dimas community. When B. F. Woodford purchased his fourth orange grove the other day, paying \$22,000 cash for a ten-acre grove near Charter Oak, there was much comment. Mr. Woodford said that in 1915 he paid \$21,000 for a seven-acre grove and since then he has picked \$16,000 from it. The day after Mr. Woodford bought his ten-acre grove O. S. Tillman of San Dimas sold a ten-acre grove near the Charter Oak school house for \$30,000, taking in the deal a residence valued at \$8,000. Two days later Mrs. J. P. Keith sold her ten-acre grove, which lies just west of the San Dimas packing house, to J. A. Crane of Santa Paula for \$20,000.

There was a meeting of orange growers last week at Pomona to discuss heating of orchards. There were nearly fifty ranchmen present. R. S. Vaile of the citrus experiment station at Riverside expressed the opinion that growers light up too early and too often. Instead of lighting up at 30 degrees, wait until 28 degrees are registered. J. D. Culbertson of Santa Paula, where 900 acres of lemons are grown and 65,000 orchard heaters are in use, came out flatly in favor of abolishing the smoke, although F. J. Smith and W. S. Jones of the Pomona district declared themselves in favor of the smoke. R. O. Price of Upland said that the smoke is an essential element in orchard heating. Geo. Laidlaw of Ontario declared when he was a greenhorn at the business he made \$2,000 in one night of Dec., 1912, by burning 1,000 gallons of oil in 1,000 pots.

DECIDUOUS FRUITS, NUTS, GRAPES.

Over 2,000 acres of Thompson Seedless grapes are now planted around Terra Buena, Sutter county.

Placer county strawberry acreage is reported to be short. Most of these berries are grown by Japanese.

A mass meeting of San Luis Obispo county bean growers has asked the State Insectary for ladybugs to control aphids.

It is reported that Phil Baier expects to plant Tragedy plums on a large part of 220 acres recently acquired near Exeter.

The New York Food Supply Committee has wired State Horticultural Commissioner G. H. Hecke asking prices on potatoes and onions f. o. b. N. Y.

The Corralitos Fruit Growers' Ass'n has been packing out about 21,000 boxes of Newtowns which were in storage. Prices are \$0.95 to \$1.05 f. o. b. Watsonville.

The rains while apricots were in bloom in Pajaro Valley were no particular damage as reported by a grower, though moist weather now might seriously reduce the crop.

San Juan Capistrano walnut growers in Orange county have formed an association and will put up a packing house. The district has a normal crop of more than 400 tons of nuts.

Heavy smudging was the rule last week in the almond district south of Chico and it seems probable that the crop has been seriously damaged in orchards where no smudging was done.

Reports from Bryn Mawr say that thousands of apple, peach, pear, and apricot trees are being set out in

upper San Bernardino Valley. It is thought that fully 400 acres will be set out to new orchards.

Apple shipments from Watsonville district for 1916-17 up to March 3 were 212 cars greater than to the same time the previous season. Some 3289 cars had been shipped, of which 1537 went East and 600 to Europe.

Fruit buyers have been busy in the Gridley district of Butte county contracting for cling peaches at \$40 a ton and one report late last week was to the effect that \$42 a ton was offered by one buyer. Prospects are for a good crop in that district.

Contracts for canning peaches were made about the first of March at the rate of \$42.50 and \$45 per ton in the Sutter county district, where the fruit seems to be considered superior, since representatives of most of the big canneries have been competing for it. The crop is estimated at 40,000 tons if about normal.

County Horticultural Commissioner G. W. Harney of Yuba county states that there has already been enough nursery stock shipped into that county to plant 2,000 acres. Mostly this has consisted of Thompson Seedless grapes, French prunes, and Bartlett pears. The nurserymen of Sutter county, he says, have put out six and a half million cuttings of Thompson Seedless vines.

MISCELLANEOUS NOTES.

Bean straw is being used in Ventura county for paper manufacture.

It has been recommended that instead of passing a standardization law for oranges at the present Legislature, a commission of 11 citrus growers be instructed to investigate and report two years later to the Legislature.

According to W. R. Wiles, squirrel inspector of Fresno county, over 90 per cent of the farmers there are now co-operating with him in an attempt to exterminate squirrels in that section. He states that the cost of extermination is about 10 cents per acre.

A large rice grower of Butte county reports making purchases of beef cattle in Shasta and northeastern Tehama county as low as \$35 a head to be carried through the balance of the winter on rice straw, bran, and polish. He states that many cattle in that section are too thin to stand the trip out of the mountains on account of the shortage of feed which he describes as acute.

Because practically all of the Thompson Seedless and Sultana raisins have already been sold by the Associated Raisin Co. they will pay \$1,200,000 to growers of those varieties on last year's crop this month. This makes the total amount paid per ton to date 1120, which amount will be increased by a further payment later in the year.

California lumbermen cut two hundred fifty million feet more of lumber in 1916 than in 1915, according to District Forester Coert DuBois. To date forty-five mills, each cutting ten million or more per year, have reported an output of 1,234,000,000 feet. The cut of forty-three of these mills was 1,221,742,000 in 1916, while in 1915 the same mills cut 976,410,000 feet.

Classified Advertisements

MISCELLANEOUS.

GROCERIES WHOLESALE—Our prices are the Lowest and our quality the Highest. Dollars saved on every order. Freight paid within 100 miles. Send for catalog. Fresno and Company. Mail Order Grocers, 1264 Divisadero street, San Francisco.

SECOND HAND WATER PIPE and Screw Casing. New threads and couplings dipped in hot asphaltum. All guaranteed. Send us your inquiry. Spector Pipe Works, 306-8 Howard St., San Francisco.

EVERY SIZE BROUGHT IRON WATER Pipe and screw casing water pipe, guaranteed as good as new. Prices right. Send for catalogue. We beat no one; everybody gets a Square Deal. Weissbaum Pipe Works 160 Eleventh St., San Francisco.

WANTED—Second-hand Feed Cutter for filling silo. Also engine, pump and surface irrigating pipe. A. H. McHuron, 149 New Montgomery St., San Francisco.

AT LAST THE PERFECT SILO—The Star Round: No hoops. No bolts. No experiments. Any one can erect. Close price. Address D. O. Lively, 215 Hobart Bldg., San Francisco.

FOR SALE—One Johnson Tractor in running order. Good orchard engine. Correspond with Rancho De La Higuera, Yountville, Napa Co., and get particulars.

PATENTS THAT PROTECT are procured through Pacific Coast Patent Agency. Savings and Loan Building, Stockton, California. Established fifty years.

ASK FOR SNOW'S GRAFTING WAX—In use all over the State. If your grocer does not keep it, send to D. A. Snow. E. D. Box 548, San Jose, Cal.

TO REDUCE THE HIGH COST OF LIVING, send for our Wholesaler to Consumers Catalog. Smiths' Cash Store, 108 Clay St. San Francisco.

FOR SALE CHEAP—A 2-unit Sharples Mechanical Milk in good condition. Mrs. Lena D. Snyder, Thermal, Cal.

JOE MILLER'S WHOLE WHEAT BREAKFAST FOOD. Miller Milling Co., Alpaugh, Cal.

SEEDS, PLANTS AND TREES.

FREE 1917 PLANTING GUIDE and "Pure Seed Book" 96 pages handsomely illustrated in many colors. Describes latest, best varieties vegetables, flowers, field crops, fruits, shrubbery, etc. A dictionary on gardening! Flower lover's delight! Field crop guide! An orchardist's manual! Berry-grower's book! A postal gets it. Don't buy seeds until you read it. Galloway Bros. & Co., Pure Seed Specialists, Waterloo, Iowa.

WHOLESALE PRICES TO PLANTERS—Plums, Prunes and Apricots on Myrobalan, 15c; Cherries, 15c; Peaches, 10c; Nectarines, 12½c; Almonds 15c. All 4 to 6-foot trees. Grafted Walnuts, 25c up. Grafted Pecans and full line of other stock. New surplus list ready. All stock guaranteed. Tribble Nurseries, Lodi, Cal.

ALFALFA SEED—Common variety and Smooth Peruvian, good quality, excellent color, high germination test, grown in Arizona under ideal conditions. Do not buy until you have compared my samples and prices with seed others offer. E. F. Sanguinetti, Yuma, Arizona.

HAIKY PERUVIAN ALFALFA SEED—We have less than one ton of Haiy Peruvian left. Very high grade and no dodger. Send your order at once at 32c. We have the best common alfalfa seed on the market at a very low price. Bomberger Seed Co., Modesto, Cal.

CITRUS TREES—all leading varieties. Large line Lisbon and Villa Franca Lemon, and Washington Navel Orange Trees. First-class stock and clean. Special prices to dealers or to growers in carload lots. Randall Brothers' Nurseries, Whittier, Cal.

ALFALFA SEED—There is a difference in the varieties and strains of alfalfa seed. Send your address for sample and our low price, and we will tell you just how our seed is selected—and why. Bomberger Seed Co., Modesto, Cal.

STRICTLY FANCY SEEDS—Alfalfa, Scarified Sweet Clover, Red Clover, Timothy, Rye Grass, etc. Free Bulletin—"Sweet Clover in the Northwest." Write for samples and prices. Ralph Waldo Elden, Central Point, Oregon.

WALNUT GRAFTING WOOD—Genuine Franquette. Same strain as Vrooman orchard was planted from. Willson's Wonder, grown by originator, F. C. Willson, Encinal Nurseries, Sunnyvale, Santa Clara Co., Cal.

FOR SALE—I have about 100 sacks of Oregon American Wonder Seed Potatoes. Good stock. H. A. Hyde, Watsonville, Cal.

QUALITY TREES—Seedlings, 5c. Prunes, 10c. Walnuts, 30c. Cash Nurseries & Seed Store, Sebastopol, Cal.

FOR SALE—Walnut Trees. Magnolia Nurseries, Whittier, Cal.

WANTED.

DAIRMEN WANTED—About April 1st, a married man, who is a good milker and who has some help, to rent dairy of about 30 good cows, do the milking, feeding, put up the hay, fill silos and do all work connected with dairy, for a share of income. Good recommendations required. Give all particulars first letter. Address P. O. Box 31, Separto, Yolo Co., Cal.

WANTED—Young men and women to attend the Western Normal Courses—Normal and Academic. The Normal Course gives an adequate preparation for teaching, at a great saving in time and money. Academic course gives practical finish to education. Write for Bulletin "A." Western Normal, 524 E. Market St., Stockton, Cal.

WANTED TO HEAR from owner of good ranch for sale. Send cash price and description. D. F. Bush, Minneapolis, Minn.

COUNTRY LANDS.

FOR SALE—948-acre stock ranch in Napa county. Price, \$17,000 net. All modern improvements. Living creek. 125 acres hay, grain and alfalfa land. Free range adjoining. 175 head of cattle can be purchased if desired. Liberal terms. Owner, Box 363, Napa, Cal.

WANTED TO RENT—Alfalfa ranch. Dairyman with small herd registered Holsteins wants to rent 40 acres of good alfalfa. Don't answer unless you have a good stand and good water. References furnished. Address, Box 470, Pacific Rural Press.

\$5,450.00—Andrew Linquest, 20-acre Peaches and Grapes ranch, two miles west Kingsburg, California. Improvements. Half interest. Pumping plant. See Linquest, C. E. Robertson, 105 Montgomery St., S. F.

30 ACRES irrigated bean, potato and onion land in Sacramento Valley for rent on shares to farmer with teams and implements. B. E. Priem, 529 Phelan Bldg., San Francisco.

B. S. COELHO, CORCORAN, CAL., Owner.—150 acres improved, subdivided alfalfa dairy, Stratford. Keeps 85 cows. C. E. Robertson, 105 Montgomery St., San Francisco.

FOR SALE CHEAP—320 acres good level land in Klamath County, Oregon. For information, address owner, W. H. Johnson, 22 Maple Ave., Watsonville, Cal.

FOR SALE, RENT, OR LEASE on reasonable terms. Creamery in good dairying section for summer business. For particulars, apply Box 64, Quincy, Cal.

SALE OR RENT—Paying apple orchard. Crop or cash rent to right person. Sale easy terms. H. C. Rawlins, Willows, Cal.

FREE NEW BLUE BOOKLET—State, Government and Indian Lands. Bargains overlooked. Joseph Clark, Sacramento.

640-ACRE MONTANA HOMESTEADS—New law. Circular free. Bureau 27 Boulder, Montana.

BLACK Percheron Stallion

9 Years old, Weight 1900 lbs.
Broken to Harness.
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A Good Breeder.

PRICE, \$350.

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Plant Morse's
Alfalfa, Clover, Beans, Peas,
Grass, Tomatoes, Onion, Corn,
Mangold, and all farm, field
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Mechanical Power on the Farm.

Users of tractors, engines, pumping plants, motor trucks, automobiles, electric motors, and other mechanical farm power are invited to make this department an exchange of their experiences and troubles.

EXPLOSIVES AND FARM INSURANCE.

[Written for Pacific Rural Press by A. J. Pillsbury, Chairman Industrial Accident Commission.]

In my recent communication to you regarding insurance rates for farm products I did not go into the matter of the use of explosives through fear that it would make the communication too long.

If the blasting is in connection with the breaking up of subsoil and other incidental work, the employer is required to keep a separate record of the payroll of all persons engaged in the storage, handling or use of explosives, including loading, capping, connecting, and firing, and the insurance rate for that kind of work is \$21.82 per hundred dollars of payroll. If the blasting payroll is larger than the general payroll a minimum premium of \$25 is charged. It is obvious, of course, that, while the rate is extremely high, the time spent in such work is generally short and the payroll not large, so that the insurance does not ordinarily run into a very large sum, but the risk is very great and comes mainly from two sources:

1. That the person handling the explosives is not thoroughly trained in their use, and

2. That such persons have become so thoroughly used to handling explosives that they cease to fear them and become careless.

Whenever a handler of dynamite gets so that he is not afraid of it it is time to set him to herding hogs or pitching hay and to keep him entirely away from dynamite until he gets to be afraid of it. Strange as it may seem, the history of the use of such explosives is characterized, not infrequently, with the habit of lighting matches and smoking cigarettes while handling dynamite caps and of fixing fuses with a box of dynamite within easy reach. In such cases they sometimes find enough of the remains of the farm worker to justify a funeral.

Less Expensive for Stump Clearing.—When explosives are used in connection with the clearing of land for agricultural purposes and not in connection with the operation of a farm, the rate for such clearing of land, including removing of stumps, is \$3.63 per hundred dollars of payroll and no separate record of the blasting payroll is required, such hazard being included in the average rate of \$3.63 for all persons engaged in the work and thereby in any degree subjected to the hazard. The minimum premium, however, for clearing land is \$10.00, but this minimum premium is not charged if the work is done in connection with clearing a part of a farm in operation and where such operation is covered by insurance and the payroll for the farm operation is the controlling payroll, that is, is greater than the payroll for the clearing of land.

It will hardly be necessary to add that, where blasting operations are carried on for breaking such soil, all workers except those actually

engaged in handling the powder should be far away from the scene of the blasting. I call to mind one case where stumps were being blown out and one ranch hand was watching the operation at a distance of a hundred yards or more and yet was killed by a flying portion of the stump. There have been many cases where rocks have been thrown with fatal effect several hundred feet from the scene of the explosion.

There are few instances where the Safety First rule is more necessary of application than in using dynamite as an implement in farming; and it is a task to which no inveterate cigarette smoker should be put lest he forget where he is and what he is doing and automatically proceed to light a cigarette with his hands full of dynamite caps. So likely is such a thing to happen that I know of an instance where a man whose entire occupation is connected with a powder plant found himself complacently smoking a cigarette with a double handful of caps in his possession. Although nothing happened, he has not gotten over being frightened over the incident to this day.

PUMP SUPPLIES LATE ORCHARD IRRIGATION.

[Written for Pacific Rural Press.]

Many orchards suffer for lack of water late in the season when the crops are off and the leaves seem deadened and dormant, says C. H. Schmidt of Fresno county. That is just the time they need water, especially on light soils like Mr. Schmidt's, being careful of course not to encourage growth so late that it will be frozen back.

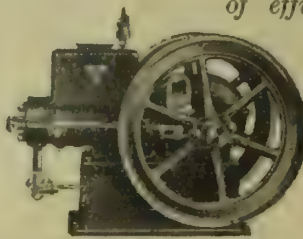
But late in the season is when many irrigation systems fail. It was to forestall such failure that Mr. Schmidt put in a pump when he planted his peach orchard in 1908. Not always does he need it; for ditch water is usually plentiful; but he does not take any chance of exhaustion and death of the trees late in the fall, nor does he fail to get plenty of strong fruit wood for next year's crop.

The pump is a little one run by a 5 h.p. electric motor and throwing 300 gallons per minute; but with it he irrigates an acre in ten or twelve hours. He insists on the water reaching the lower root strata.

The last irrigation comes in October after the Phillips are off. The Tuscan are watered as soon as they have been picked. If the trees were not vigorous, says Mr. Schmidt, they might start new growth under such late irrigation without being able to finish it before winter. With the heavy manuring and alfalfa cover crop in his orchard, however, the trees start new leafage all over, which is supplied with necessary food by root and leaf action without exhausting the tree in any way. Of course such additional food must be furnished or the new growth will do nothing but exhaust the tree of its stored-up food. With Mr. Schmidt, this new growth matures satisfactorily and he considers the fall irrigation absolutely necessary.

Economical Pumping

—Can only be accomplished by the use of efficient Pumping Equipment.



Alpha Distillate Engine.

AN EFFICIENT ENGINE is one that will not only continue to develop the full amount of power required on the smallest consumption of fuel, but will also require practically no attention during operation. It must be free from repair expense and the possibility of a breakdown during the pumping season.

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VIKING ROTARY PUMPS

—an ideal irrigation pump

VIKING PUMPS will deliver more water per minute for the same amount of power used than any other type. Its very high efficiency is due to its positive delivery, its simple design and careful manufacture. It is SELF PRIMING, requiring no foot valve or priming pump and easy to install. Investigate the Viking Pump.

Built in all capacities from 20 to 1600 gallons per minute.



Viking Rotary Pump.

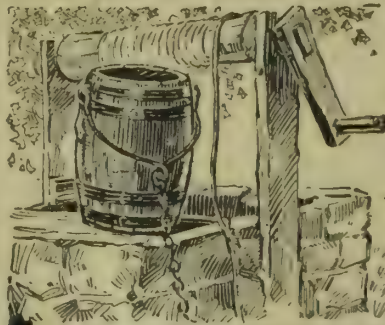
Send for complete catalog of both Alpha Engines and Viking Rotary Pumps. They are yours for the asking. Now is the time to consider pumping equipment.

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Agencies in all Pacific Coast Territories.



How Old was The Old Oaken Bucket?

THE "iron-bound" bucket that hung in the well was covered with moss but the hoops were always tight and the bale was always secure. Time left its impress on the wood and on the metal but rust did not eat through the iron although the bucket was subjected to the severest of exposures. The iron was pure iron and pure iron resists rust.

"ARMCO" IRON CORRUGATED CULVERTS

By chemical analysis these are purer iron than were the hoops of the old oaken bucket. Under similar conditions "Armco" Iron should outlast even the old-fashioned iron. Under highways and railroads all over the country, "Armco" Iron Culverts give service like that of the old oaken bucket. They are the only metal culverts that can be counted on to outlast the generation that installs them.

For full information on "Armco" Iron Culverts, Flumes, Sheets, Roofing, and Formed Products, write the manufacturer in your vicinity, or

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WITTE High Grade Engines—Gasoline or Kerosene—2 to 22 H.P.—all styles—stationary or on trucks, saws, etc., with or without magnetos—Cash or Payments.

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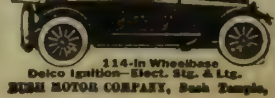


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Write stones for my 48-page catalog and all particulars. Address J. H. Bush, Pres. Dept. SEN.

114-In Wheelbase
Delco Ignition—Elect. Sigs. & Ltg.
BUSH MOTOR COMPANY, Bush Temple, Chicago, Illinois



PITLESS PUMP FOR 20 ACRES.

To the Editor: I wish to put up a pump and the question with me now arises if a pitless pump would be just as good and cheap as a centrifugal pump. It is 20 or 22 feet to the water and the well is about 100 feet deep. What size of pump would it require to irrigate 20 acres of land, and what size of engine would it take to run it? Would it cost more power and money to run a pitless pump?—H. K., Bakersfield.

[Answered by S. H. Beckett, University Farm, Davis.]

The size pump necessary to irrigate 20 acres depends mainly on the crop to be irrigated. If alfalfa is to be seeded, a pump with a discharge of not less than 400 gallons per minute and preferably 700 gallons per minute is desirable. This would call for a 4 or 5 inch pump. If on the other hand an orchard crop is to be irrigated, a 3 or 4 inch centrifugal could be used.

Under the conditions stated, the type of pump to be used is going to depend on the "pull-down" or lowering of the water level in the well while the pump is in operation. The deep well turbine or pitless pump is best adapted where the lift is in excess of 50 feet. For lifts of less than 50 feet the centrifugal type is preferable. On a 40 per cent efficiency basis a 3-inch centrifugal pump will require 0.14 h.p. per foot of lift of water, a 4-inch centrifugal at 4.5 per cent efficiency requires 0.22 h.p. per foot lift, and a 5-inch on a 50 per cent basis requires 0.34 h.p. per foot lift.

I would advise your correspondent to secure University of Cal. circular 117 on the Selection and Cost of a Small Pumping Plant. This may be obtained by applying to the College

of Agriculture, University of California, Berkeley.

POWER NOTES.

The Farmers' Automobile Detective Ass'n has replaced an anti-horse-thief association in Indiana.

The California Automobile Association has eight automobiles mapping and signing roads and securing information for its Touring Bureau.

Join the California State Automobile Ass'n and help their work of making roads more tourable and less terrible. Dues are only \$6 a year with \$2 initiation fee.

A pressure gauge and safety valve permanently fixed in the automobile tire valve, is now on the market. It registers the pressure at all times and releases air if the tire is pumped too hard or becomes too hard due to expansion of the air.

A tail light is being made now which turns up a big red sign "Slow" whenever the brake is applied. This is to avoid read-end collisions. People who slow up without using the brake are seldom endangered.

The Riverside Portland Cement Co. have sold the horses and hay on their 100-acre lemon orchard near Whittier and are putting in tractors.

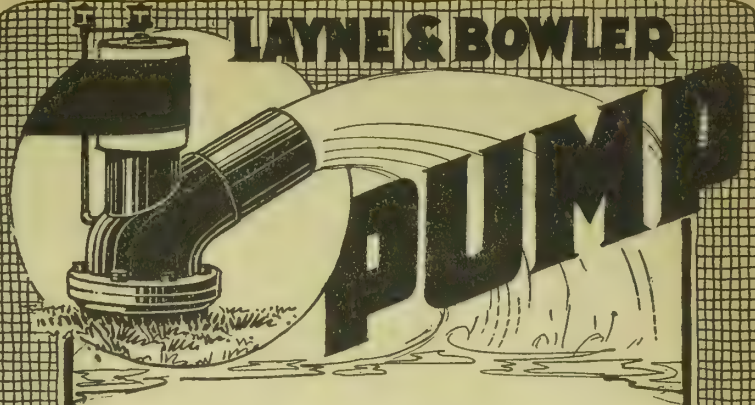
No more Avery orchard tractors will be available for California for some time, according to advices recently received by C. S. Anthony, the Avery distributor for the State. A carload was recently shipped; but the output of the factory, which is in Illinois, will be used locally as fast as made.

The Gillette Ranch of Lindsay has two new tractors in addition to the two already used on their 280 acres of citrus and olive orchard. Fast work is required to get the ground in good condition before it shall have dried too much to work at all.

AUTOMOBILE NOTES.

After the puncture in the inner tube has been repaired the tube should be rubbed with soapstone and allowed to lie for some time in a cool place.

In cities, never stop your machine unless you are headed to the right of the street. Never pass other cars at the intersection of streets in the business district. Wait your turn.



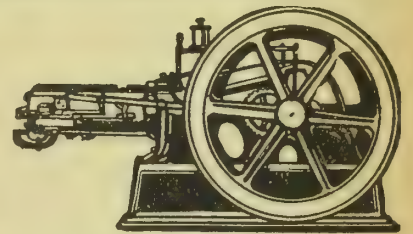
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PUMP

The severe duty of Western irrigation service requires a pump designed to operate at low cost without danger of a breakdown or trouble. Its construction must be extremely simple and of such a character as to meet widely varying conditions. Layne & Bowler Pumps meet these requirements perfectly. Over 5000 in actual operation testify to this. Let the World's largest water developers solve your pumping problems. Our interesting catalog No. 25, on irrigation and pumps is yours for the asking. Write for it.

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 WORLD'S LARGEST WATER DEVELOPERS.

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There are many makes of pumping engines on the market. The best will survive the test of time by virtue of their superiority—the others will drop out and cease to be.

Commercial Engines embody all that is best in pumping engine construction. They are built for strenuous service and have established marvelous records for power, endurance and economy in operation and upkeep.

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An ironclad written guarantee protects the purchaser of every Commercial Engine.

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IRON AGE

GARDEN TOOLS

Answer the gardener's big questions! How can I grow plenty of fresh vegetables with my limited time? How can I avoid backache and drudgery? Use

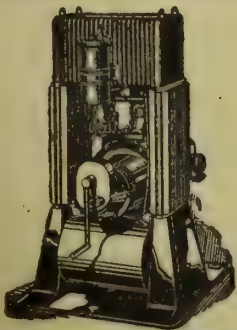
IRON AGE

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Do the work ten times faster than the old-fashioned tools. A woman, boy or girl can push one. 24 combinations—easily adjusted. Light, strong and durable. Prices, \$3.25 to \$16.00. Will help you to cut the high cost of living.

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 GASOLINE-ELECTRIC UNIT
 LIGHTING SYSTEM

Electricity for Farm Homes

At one-third cost of juice from Power Company (this includes interest on cost of plant). It is the simplest and most economical plant on the market.

No Batteries - No Switchboard - No Rheostat

Will operate 50 lights 7½ hours for 11c. Will also operate electric fans, irons, small motors, etc. If your buildings are not wired, send us plans and we will give you full instructions so that you can wire them yourselves. Material furnished at lowest cost.

Karl A. Hedberg

ELECTRICAL ENGINEER.

104 Clay Street,

San Francisco, Cal.

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For Every Purpose
 NEW
 Threads & Couplings
 Hot
 Asphaltum Dipped

Second Hand and NEW

Fittings and Screw Casings Valves Guaranteed for Pressure

Pacific Pipe Co.

Main and Howard Street, San Francisco, Calif.

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ELECTRIC APPLIANCES in the household, not only add to the convenience of all members of the family, but they are economical and time-savers.

ELECTRIC APPLIANCES include CHAFING DISHES, COFFEE PERCOLATORS, VACUUM CLEANERS, ELECTRIC IRONS, and every other appliance that is needed in the modern home, not forgetting ELECTRIC FANS.

We carry these appliances in many of our branch offices, and will be glad to have you call and inspect them. Where we do not carry them we will be just as glad to give you our expert advice.

"PACIFIC SERVICE" is always "At Your Service."

Pacific Gas and Electric Company

HEAD OFFICE, 445 SUTTER ST., SAN FRANCISCO.

Branches in all principal cities and towns of North Central California.

Desirability of Larger-Sized Dairy Cows.

Does the future welfare of the Jersey lay in the direction of larger-framed and more rugged cows, or will it remain with the delicately built small cow that has come largely as a result of intensive Jersey Isle breeding?

While there are advocates of both types it is a significant fact that the majority of experienced grade dairymen, at least in California, are demanding the more rugged animal and the greater number of our prominent breeders seem to be working toward that end also.

That a larger Jersey may be developed in this State than we have been accustomed to in the past is quite generally admitted, but there is some confusion as to how best to secure the additional size.

Although he has bred purebreds because of the increased revenue they produced in butterfat, as well as because of the satisfaction in owning good stock, T. B. Roy of Marin county has demonstrated a feasible plan of increasing the size of Jersey cattle that may well be considered by those interested along this line.

It is now over 30 years since Mr. Roy secured his first purebred Jerseys and during all of that time it has been a hobby with him to breed and keep large cows.

The practical working out of this hobby has been hinged on two controlling factors: good feed and development of heifers before breeding. Of course he has used discretion in selecting herd sires, demanding at all times big, rugged fellows with tested dams back of them. Some of these have not been as prepotent as he would have liked them to be, but on the whole they transmitted their size to the offspring.

Size without production, though, has never been considered proper by Mr. Roy, and through the use of the scales and the Babcock tester he has intelligently selected the heifers from the best cows for his own herd, disposing of the poorer ones regardless of the price they would bring.

Situated as he is on a hill ranch,

with spring pasture and grain hay as the main feed supply, a good deal of mill feeds are purchased, as well as some alfalfa hay, for a butter trade of long standing is enjoyed that requires a year-round supply.

After selecting the heifers that are to be retained they are carried along on good feed, with the idea that lack of feed will retard development of any animal. A rough board shelter also protects the entire herd from the cold and wet winter weather, which is another aid in development.

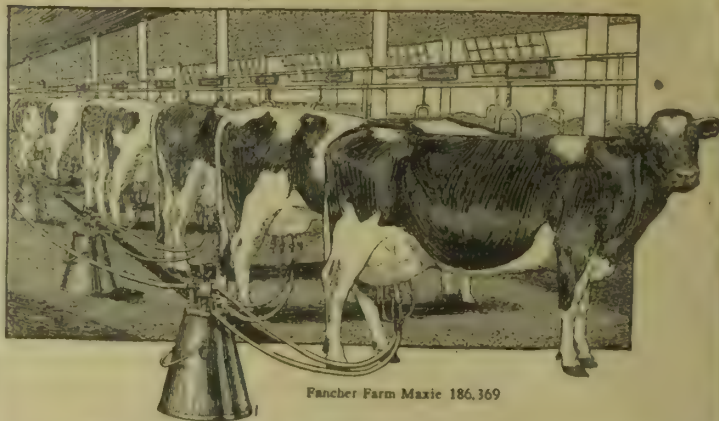
Breeding is usually practiced so that the heifer will come in with her first calf right around three years of age, and this, in Mr. Roy's mind, is the most important consideration in larger framed cows.

It sometimes happens that a heifer gets bred sooner than she should, and always they are around 200 pounds lighter than those bred later. The writer was shown several such heifers alongside of others which had been bred later, and the difference was sufficient to convince anyone of the correctness of Mr. Roy's theory.

While it is true that these smaller cows oftentimes produce as heavily as the larger cows in the herd, care is exercised against selecting heifers from those cows, as that would tend to reduce rather than increase the average size of the herd.

The exact weight of Mr. Roy's cows is not known, but as a whole there is an appreciable difference between them and the ordinary Jersey in the State. While one can only theorize as to the size that would have been attained had this herd been developed on an alfalfa ranch instead of on hill land, it is logical to suppose that the size would have been materially increased, because of the more plentiful supply of good feed.

The Farmers' Protective League has recently launched a campaign for more members in Southern California by holding a meeting in Los Angeles. C. C. Teague was appointed chairman of the organization.



Fancher Farm Maxie 186,369

Breaks World's Record

Fancher Farm Maxie—a four-year-old heifer, owned by Senator A. T. Fancher of Salamanca, New York, recently broke the world's four-year-old record, producing 46.84 pounds of butter in seven days.

This places her in second place among the world's dairy cows of all breeds and ages.

During the test period and at all other times since she first calved, she has been milked by



The best recommendations for Empire Milkers that we have seen have come from users. They will interest you. Send for our illustrated pamphlet "What Dairymen Say."

Mr. M. C. Hubbell, Superintendent of Fancher Farm, gives full credit to the Empire for the important part it has played in establishing the records that he has made.

EMPIRE Milking Machines are simple and efficient—gentle and natural in their action, and above all, they milk the SAME WAY EVERY DAY, more uniform in action than even the calf. They are a safeguard to the condition of valuable cows.

Let us tell you ALL the benefits they offer you. Write for Catalog 45—and also ask for information regarding EMPIRE Cream Separators, Gasoline Engines and Electric Plants.

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Golden Goods, Jr., Herd Sire.

Our 1916-17 offering of yearling bulls is small but select. They are all heavy boned, solid red in color and of Scotch and Scotch-topped breeding. Suited for either the range grower or breeder.

DUROCS.

Our Durocs are of the big type, with big bone, well-arched backs and carrying good hams.

We have a few head of service boars, now ready for service, solid red in color and out of prize-winning animals.

Every Animal Positively Guaranteed

Whether you buy or not, visit our ranch, 7 miles from Palo Alto on Woodside Road. We welcome inspection. Prices and pedigrees on application.

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Duroc-Jersey Swine

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Cattle selected from best Imported and Advanced Register Stock.
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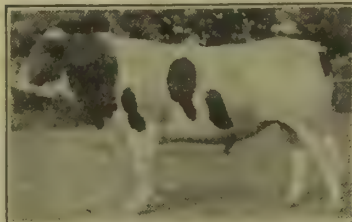
C. S. RASMUSSEN,

Loleta, Calif



GRANDSONS OF TILLY ALCARTRA

We now offer two young bulls for sale that are old enough for service. No. 1—Born Sept. 12, 1915.



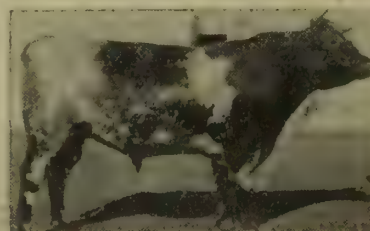
Prince Alcartra Korndyke,
Best bred son of Tilly Alcartra.

Write for prices, or better come and see them.

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INNISFAIL DAIRY SHORTHORNS



GLENSIDE ROYAL 408155.

Our herd of registered Shorthorns has been carefully selected from the leading milk producing strains of the breed and is being developed along the same lines in our hands. The herd is headed by

GLENSIDE ROYAL

a prize-winner at the 1913 International and grand champion at Panama-Pacific Exposition. Sired by him and out of large cows of good milk production we offer for sale a few choice young bulls. Our entire herd is tuberculin tested. Alexander & Kellogg, Suisun, Cal. Farm on Grizzly Island.

102 "Indiana" Service Stations in the West!



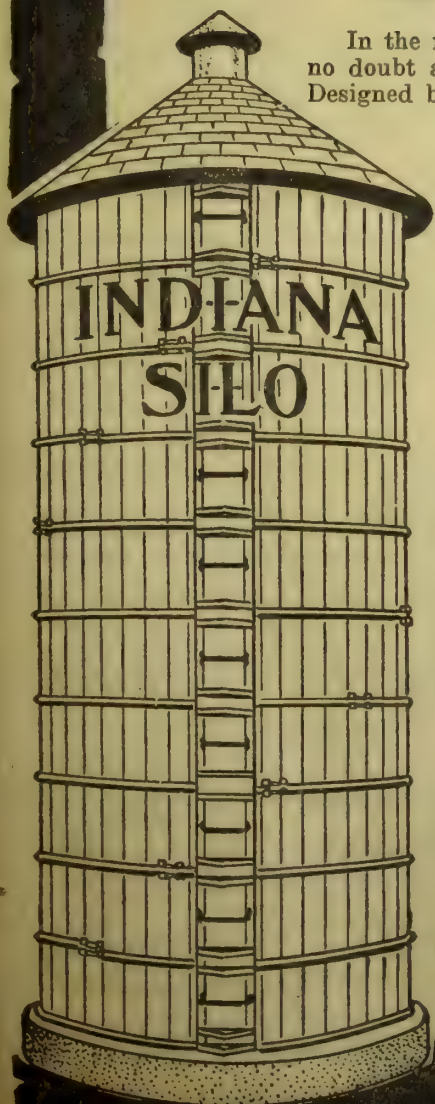
"Our duty to a customer does not end with our delivering to him a silo that is all we represented it to be; we must also assist him in learning to use it so as to get the best possible results."

Chas. K. Spaulding Pres.

THIS statement, from the man who outlines the policies of this company, explains why we strive so hard to make Indiana Silo Service equal Indiana Silo Quality! It also explains why Indiana Silo owners get such splendid results from the very first. They do not have to experiment.

Every silo representative we have in the field is a "service station," so to speak. Their mission is to give information and assistance, as well as to sell silos. Each man is also an "information-gathering" station, from which source we gather much of the experience, etc., set forth every month in our Silo Service Bulletin—"The Watch Tower of Prosperity." This data, carefully edited by our own agriculturist, will save thousands of dollars annually to users of the

INDIANA SILO



In the minds of thousands of men who read this, there is no doubt as to the superiority of Indiana Silo construction. Designed by the world's largest silo company, and tried out in actual use for over fourteen years, its clean, efficient record has been established on **OVER 60,000 AMERICAN FARMS**. Add to this our **ABSOLUTE GUARANTEE**, and we are sure you must realize your money is much safer invested in an Indiana Silo—known and sold in every state in the Union—than invested in any one of the unproven types to be found in every locality.

Indiana Silo prices have not advanced as yet, for we protected your interests as well as ours by contracting for a number of cars of steel early last Fall. Our business so far this year is breaking all records, and we may be forced to advance our prices, just as prices on your farm products have advanced. So our advice is—**ORDER YOUR SILO EARLY!**

Monthly Silo Bulletin FREE

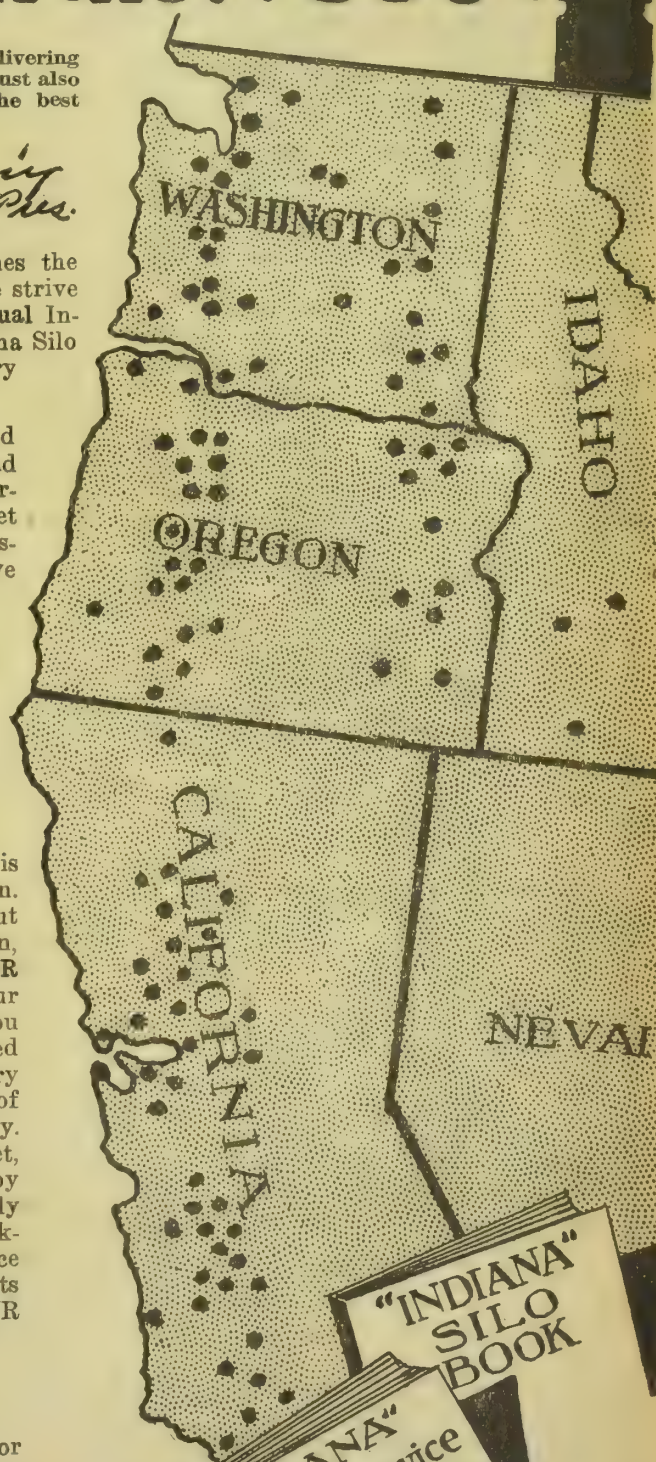
Whether you have an Indiana Silo now or not—regardless of what silo you are interested in, we will be glad to send you this silo bulletin each month. We'll also mail our complete free Silo book. Fill out the coupon, or send a postal. Address all inquiries to our Salem office.

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"INDIANA" SILO BOOK

"INDIANA" Monthly Service Bulletin

The Chas. K. Spaulding Logging Co.,
Dept. B. Salem, Oregon.

Am interested in knowing more about your service to help silo owners get biggest profits from silage. Send me Monthly Bulletin and Silo Books, both free.

Name

Address

Objections to Hide and Brand Law.

[Written for Pacific Rural Press by F. L. Gordon, Suisun.]

This bill is being advocated by, and is plainly in the interests of, very wealthy cattlemen who wish to be protected from theft and are not willing to make the effort and bear the expense as others in all lines of business are required to do. Instead of asking the aid they are entitled to from the county authorities, they see an easier way by shifting the whole responsibility on the very generous State of California. The legislation they propose is very annoying to small cattle men and more particularly so to the thousands of farmers that are not cattlemen but keep five to twenty-five or fifty head of cattle who run them in small, well-fenced fields and are very able and willing to protect them from thieves.

Annoying Details.—These thousands of farmers and small cattlemen will be compelled to brand and ear mark all their cattle (that are not actually used as milch cows or are registered stock) at the time of weaning from their mothers, with a

registered brand and a registered ear mark and pay 50c and \$1.00 according to the size of their herds, for registering such brand and ear mark, and pay such fee yearly for renewal. They will not be allowed to kill and offer for sale any of their calves they wish to dispose of for veal or any other of their cattle without first getting a license for conducting a slaughter house at the yearly expense of \$6.00 and they must notify their district inspector when they will kill any of their own cattle and he must come and inspect ear marks and brands, etc., before they can kill; and then said inspector must charge them a jitney for tagging the hide. They will not be allowed to sell and deliver any of their cattle without first notifying the inspector and he must come and inspect ear marks and brands and charge another jitney per head for such inspection. They must also give a bill of sale for any cattle sold, describing the cattle in detail, and said bill of sale must be acknowledged before some officer authorized to acknowledge signatures, and said acknowledgment must be paid for, of course. They will not be allowed to skin a dead cow and sell the hide until the inspector inspects the hide nor can they allow another party, even be he their own son, to handle and gather their cattle without a written permit to do so. I contend that all these regulations are radical in the extreme, a decided inconvenience, annoyance, and expense to the small cattlemen and thousands of farmers keeping a few cattle. Where it will benefit one, it is a hindrance and annoyance to a hundred; and those that will be benefited by senate bill 159 are very well able to take care of their cattle at their own expense with the aid of their county government.

[A copy of the bill is on file in our office for convenience of anyone desiring to study it.—Eds.]

HOG PROFITS AND FEED PRICES.

To the Editor, I would like to know whether it is more profitable to sell hogs at 9 cents with feed at present prices or at 6 cents with feed a little more than half as high.—W. P. A., Modesto.

[Answered by Prof. J. I. Thompson, University Farm, Davis.]

You do not state what feeds you are using for pork production at the present time, nor what they are costing you. With barley at \$2.50 per 100 lbs. it is doubtful if you can make a profit on hogs at 9c no matter how you figure it or how well you feed. It might be done, but the chances are very slim.

With feeds half their present price your chances of coming out even with hogs at 6c would be better than with feeds twice that high and hogs at 9c. If the price of hogs was in proportion to the price of grain, then you would ordinarily figure that there was a greater profit when both hogs and grain were high. This is due to the fact that the selling price is what you get for the gain that you put on. If in each case the gains cost you within 1c a pound of the market price you receive for them, there would be no difference in profit.

SILAGE FOR HOGS.

[Written for Pacific Rural Press.]

G. R. Cloes of San Diego county was feeding silage to hogs; but after quite a thorough test was not satisfied with it. Both milo and Indian corn had been fed. The milo was dry and pithy when siloed, the leaves all dead and the grain plump and plenty. Water from a ¾-inch hose, under medium pressure, had been run in with the chopped milo. Be-

cause it has such a large proportion of grain to stalk, Mr. Cloes says that if he ever feeds silage to hogs again it will be milo, for the stalks are wasted.

So it was with Indian corn, which was being very largely wasted except the grain, although it was fed on a clean wooden floor. Mixing ground barley with it seemed no more effective in getting the stalks cleaned up, which were still ignored by the hogs and left as litter.

CARRUTHERS' FARMS FIRST ANNUAL

Shorthorn Sale

MAY 2nd, 1917
MAYFIELD, CAL.

Watch this Space for Later Announcements.

Hillcrest Stock Farm.

Shorthorn Cattle, Shropshire and Merino Sheep



Shorthorn Bulls for Sale, sired by such noted bulls as King Lancaster, Knights Perfection, Greenwood Knight and Greenwood King. Nearly all offsprings of the famous King Edward.

These Bulls are conceded to be the best offering ever made from the Hillcrest Stock Farm.

For Particulars Apply—

T. S. GLIDE
Proprietor.

Davis, California

King Lancaster, sired by King Edward, grand champion bull State Fairs, 1909-10-11.

Paicines Ranch Co.



San Francisco,

Offers for sale a select lot of weanling registered bulls, sired by such bulls as Fond Lavender, College Count 3rd, Bes-sie's Council and Whitehall of Orange. For prices and particulars apply to

DAVID J. STOLLERY

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California.

BULLS - Shorthorns - HEIFERS

REGISTERED AND TUBERCULIN TESTED.

Animals of either sex ready to deliver in car lots or singly.

H. L. & E. H. MURPHY, Perkins, Cal.

HOPLAND STOCK FARM

REGISTERED SHORTHORN BULLS

A fine lot of individuals. Ready for service on the range. Registered Berkshires, Holstein Bulls from high-testing cows.

San Francisco Office,

1210 Flood Bldg.

SHORTHORN Sale and Show

by the

**Northwest
Shorthorn Association**

86 head—52 bulls and 34 cows and heifers—of choice Shorthorns, from the best herds in the Pacific Northwest will be shown and sold.

**TUESDAY
April 3rd, 1917**

**At the Portland Union
Stock Yards, Portland, Ore.**

Opportunity for the bull buyer, and the man who wants to buy foundation females, that will prove a profitable investment.

See the show the day prior to sale. It affords opportunities for comparison of bulls and females that will be appreciated by buyers, and valuable lessons may be learned therefrom.

A sale under the same auspices will also be held at Spokane Union Stock Yards, Wash.,—consisting of 55 head of Shorthorns—on April 5, 1917. Plan to attend one or both sales.

For catalogues and particulars,
Address

FRANK BROWN, Sales Mgr.
CARLTON, OREGON

MONTELENA HERD

Large Yorkshire Swine

THE IDEAL HOG
FOR THE
PROGRESSIVE FARMER.



MONTELENA BIG DICK,
First Aged Boar and Reserve
Grand Champion.

Won 9 Prizes
With 8 Entries
at Sacramento.

Young stock
for sale—both
sexes.

A. L. Tubbs Co.
Calistoga, Calif.

DUROC JERSEYS

Cherry Red Color.

HERD SIRES:

Tulare Boy

and

E. N.'s Colonel

Tulare Boy was Sweepstakes
Winner at 1915 Fresno Fair.
Weighed 276 pounds at six
months of age.

**Choice Breeding
Stock for Sale**

John P. Walker

Visalia,

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Rhoades & Rhoades

Expert Live Stock Auctioneers.

Purebred Stock Sales a Specialty

Sales Conducted in All Parts of Calif.

Ben A. Rhoades, Auctioneer.

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Crawshaw's Poland Chinas

The best blood of the best breed
on earth. 25 choice young boars,
six months old. Sell your sub-
solder scrub and buy a money-
maker for \$25.00.

DR. J. A. CRAWSHAW,
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TAMWORTHS

(The Bacon Hog)
Largest Herd in the State

DUROC - JERSEYS

Mature Stock and Weanlings of both
sexes. Sure to please.

SWINELAND FARM,
W. O. Pearson, Prop. Woodland, Cal.

Brood Sows Handled Conveniently.

[Written for Pacific Rural Press.]

Convenient farrowing pens at low cost can be seen on the Paulin and Wilson Duroc-Jersey ranch near Imperial, where about 1000 head are usually kept. There are 44 pens on two sides of a lane through which feed can be hauled and distributed into troughs and onto feeding floors along the lane. Each pen is 8 feet wide and extends 19 feet back from the lane. The floor extends back 10 feet, and the rest is sheltered under a galvanized iron roof whose lower edge is six feet above ground.

"High roofs are essential here to catch wind and get air circulation," say the young men. But the outer side of the pens is boarded up solid about 3½ feet to keep the sleeping hogs and pigs out of drafts, especially in winter. Partitions between sleeping quarters are also solid to

prevent wind sweeping lengthwise through the shed where it would blow on the animals.

Alternate partitions are removable, so the space for each group of sows and pigs can be doubled at will. The fixed division fences each have a water-trough set centerly underneath so it serves the pens on both sides even when the pens are doubled.

Having boarded floors, convenient to the alley or to the rear end of the shed, it is so easy to clean the pens that this work is done two or three times a week.

A dipping vat fixed in the lane is accessible to all pigs without much driving. An effort is made to dip them by hand at 1½ weeks old, and to drive them all through the tank at about three weeks.

Chopping Coarse-Stemmed Hay.

When the dairyman is compelled to pay as much as \$22 a ton for alfalfa hay as has been the case the past season, it stands him in hand to waste as little feed as possible.

In the dairy sections of Marin and Sonoma counties more alfalfa hay has been purchased this year than ever before in the history of those districts, and, as might be expected where baled hay was purchased, much of it was of a very poor quality—so bad, in fact, at times that there was little to it except stems. On the LeBarron Estate Com-

pany's ranch near Valley Ford there is very little loss from this coarse hay owing to the fact that they have a feed cutter in the barn through which all such hay is run before being fed.

The practice on that dairy is to feed all good hay just as it comes from the bale, but all bales containing hay from which the leaves fall off badly when the wires are loosened are run through the cutter. The expense is very small and there is practically no loss of coarse stems in the feeding troughs or mangers.

PREMIUM HOG PRICES.

[Written for Pacific Rural Press.]

Two cars of hogs were sold in mid-January by Geo. W. Paulin and Geo. H. Wilson of Imperial at 40 cents above the prevailing prices. They averaged 196 pounds and one carload was solid red and of uniform size and finish. The other car was spotted in color but uniform otherwise. Since Paulin and Wilson depend on local buyers to take their small lots, they give the local buyers a chance on the carlots, by inviting several to come to the ranch and bid on them.

COW-TESTING DAIRYMEN SELL COWS.

[Written for Pacific Rural Press.]

Probably the best argument why the majority of our dairymen should either aid in organizing a cow-testing association or join the one already operating in their district is the large percentage of association cows that are disposed of by their owners.

In talking with the secretary of an association recently he remarked that his chief trouble was to keep the number of cows up to requirements because of the heavy culling that had been done by members after they tested awhile. He told of one dairyman who had just sold 14 cows from his herd because the scales and tester had shown them to be costing more than they produced. It is interesting to know that he had only been testing five months.

It is further interesting to know that this same association had to suspend operations for a time last

year because of the heavy chopping of boarders by members as a result of the figures furnished them by the association tester.

If, as is generally contended, the man who tests his cows is more pro-

gressive and therefore more likely to have heavy-producing cows than his neighbor, it would be doubly interesting to know how many cows are costing more than their keep in non-members' herds.

Do not overwork the team during the first week of spring and thereby impair their efficiency during the rest of the season.



Bad-Tempered and Why?

Cows are sensitive animals and form habits easily. Many a good cow has become 'mean' through some irritating udder sore left to heal itself. Save the cows' disposition and serious danger by using Bag Balm, the great healing ointment, at the first sign of caked bag, inflammation, chafing, sore, chapped or injured teats. A great antiseptic healer for any scratch, bruise or cut.

Sold in generous 50c packages by feed dealers and druggists. Write for useful free booklet, "DAIRY WRINKLES."

DAIRY ASSOCIATION CO., Lyndonville, Vermont

BAG BALM
MADE BY THE
NOW-KURE
PEOPLE

GERMAIN SEED & PLANT CO.,

Los Angeles, Cal.

Portland Seed Co., Portland, Ore.

Spokane Seed Co., Spokane, Wash.

Hog Cholera Serum

I represent one of the greatest Government Inspected Hog Cholera Serum Plants in the whole country.

NO BETTER SERUM MADE.

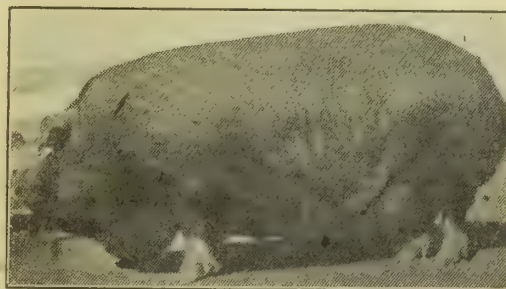
An ounce of prevention is worth a pound of cure. Find out about this serum today. Price Right.

For particulars address.

CARRUTHERS FARMS,

MAYFIELD, CALIF.

BASSETT'S POLAND CHINAS



GRAND CHAMPION SOW,
P. P. I. E. 1915; Sacramento, 1916.

For many years at widely separated show rings, under many different judges of varying type ideals, my Poland Chinas have been consistent prize-winners. My herd is large and I cull closely. The animals sent out as breeders are the very tops of a large number. I KNOW that my kind of Poland China is a profitable farmer's hog, for I send carloads of them to the packer every year—uniform in size, high in quality, quickly and economically matured and finished.

Young stock, \$30 Up.
M. BASSETT,
Box 1, Hanford, Cal.

Digester Tankage

Send for Sensible folder on feeding hogs

Western Meat Company

Animal Food Dept. 704 Townsend St., San Francisco

CATTLE FEED FOR SALE

I have both wild feed and hay to be sold together, and fed out by owner. Write me at once for prices, etc.

JAS. McCORD,

Hanford, Cal.

Cotton Seed Cake and Meal

Lowest in cost considering the high percentage protein and fat as compared with other feeds. Sold in carlots of 15 to 20 tons each.

WILLITS & PATTERSON, No. 1 Drumm St., San Francisco.

Agents Imperial Valley Oil & Cotton Co.

Live Stock and Dairy Notes.

[Livestock breeders all over the State are invited to send on postal cards, notes regarding their sales, State and County Fair intentions, new stock, etc.]

DAIRYING.

T. B. Purvine reports the sale of registered Jersey bulls to the following dairymen: Walter Foster and Albert Martin of Sonoma county and James Fallon of Glenn county.

Over 300 dairy cattle have recently been entered in the Gridley Cow Testing Ass'n from the river district north of Chico. This brings the membership in the association up to the required quota.

The World's Grand Champion cow of all breeds, the Ayrshire Kilnford Bell 3rd, owned in Wisconsin, has just died, according to J. G. Watson of the Ayrshire Breeders' Ass'n, Brandon, Vt.

Stockton is getting some undesirable notoriety due to certain unclean dairies. State Dairy Inspector J. H. Severin is taking measures to have them cleaned up in a practicable way as shown by certain other dairies in the vicinity.

A. R. Magruder of the Gotshall Cattle Loan Co., Ripon, advises us of the sale of eight high grade Holstein cows and the registered bull, King Lunde Blacken De Kol to G. Haubruck of Thalheim. The bull was sired by a grandson of King of the Pontiacs.

F. L. Morris of Woodland reports that Aaggie Acme of Riverside is making the highest butter records ever made in California. She is on official test. In the 100 days preceding Feb. 27 she produced 8015 pounds milk containing fat to make 444.36 pounds butter.

The Holstein cow Wandermeere Belle Hengerveld has produced 32,465 pounds fat in seven days, having freshened at 4½ years. She is owned in Michigan; and is the 18th Holstein to exceed 32 pounds fat. This makes her butter equivalent to over 40 pounds in a week.

The Gridley Cow Testing Ass'n contains seven grade cows and one purebred which produced over 50 pounds butterfat in February, 1917. Sixteen cows produced over 45 pounds. H. E. Wickman's grade Holstein produced 78.1 pounds fat from 4.3 per cent milk. Five of the highest eight cows belong to J. H. Guill. George Clark, Tester.

The Solano-Yolo-Colusa Cow Testing Ass'n contains 14 cows which produced 50 pounds or more of butterfat in February. D. Beeman's Holstein produced 75.51 pounds. He had the highest record for a herd of less than 20 cows, his five Holsteins averaging 1.69 pounds. P. Gillian had the highest herd average for over 20 cows with 1.08 pounds daily. J. A. Weldon, Tester.

SWINE.

Hogs sold at \$14 to \$14.25 in Chicago Mar. 5.

Hogs are reported bringing pro-

ducers 12 cents at El Centro.

H. P. Eakle of Yolo is sparing no expense to build up a fine herd of Durocs.

Dr. J. B. Cady commends Kings county's improvement in conditions affecting swine cholera control.

About 150 hogs were sold around Meridian, Sutter county, for 10½ cents to go to Portland recently.

Porterville hog growers have marketed the past week 2500 hogs valued at over \$55,000, the prevailing price being \$11.00 per cwt.

A couple of Solano county feeders are buying hogs from the farmers and putting them to a hog-cafeteria containing Indian corn and milo.

A thousand hogs valued at \$18,000 to producers were shipped from Visalia Mar. 1 to Los Angeles. Shipments from Visalia have amounted to over \$5,000 per week for the past four months, according to buyers.

The Henderson Co. of Sacramento have recently sold 190 of their purebred Chester White and Duroc Jersey hogs to H. C. Guigg and T. R. Cooper. This reduces the size of the Henderson herds to about 10 of their choicest brood sows.

F. M. Johnson of Napa has recently bought a sow from Ohio. She is a daughter of the International grand champion Joe Orion 2nd. He has also bought a Cherry Chief sow bred to Critic D, which had more winners at Omaha than any other boar. Two other recent purchases are a daughter of Burke's Good Enough bred by Economy Stock Farm and a gilt from a University of California granddaughter of Col. Protection.

The Glenn County Farm Bureau, through its market agent, O. L. Leachman of Orland, shipped its first carload of hogs to San Francisco this week and has several other carloads of hogs and cattle to ship at once. They were a heterogeneous bunch of many sizes, ages, and colors. Farm Adviser W. H. Heileman says there has been a bigger increase in membership since this feature was started than ever before.

BEEF CATTLE, SHEEP, HORSES, ETC.

First cutting alfalfa hay has been contracted at \$12 a ton baled and on board car in the Los Molinos district.

Ruby and Bowers, extensive horse breeders and dealers, propose to handle purebred Herefords and Holsteins.

A trainload of cattle was recently received at Chualar from Nevada and 300 head are coming from Oregon to King City.

Wheat hay has found a ready sale at \$16 on board car at Tehama the past month; but supplies are about exhausted.

D. E. Richards, manager of the O. A. C. livestock farm, has been appointed secretary of the Oregon Station Registration Board.

That J. W. Yocum of Calipatria has sold his wool clip, yet to be cut, at 33c per pound is a good sign for sheepmen. This is said to be nearly twice as high as last year.

Prices of cattle and calves in the Coast counties hit bottom just before the rain, and bounced quickly as the spring pastures were assured. Buyers are having trouble to fill orders.

R. D. Mayes and A. J. Hillhouse of Dixon report their sheep in Nevada in fine condition. They expect \$40,000 worth of lambs; and their wool is contracted at 30 cents per pound.

Benj. Quigley of Linne, San Luis Obispo county, is looking for purebred Herefords to replace the 100 grade cows and heifers he expects to sell soon at auction in Paso Robles.

Consular advices from New Zealand dated in January showed fat wethers selling \$5.50 to \$10 per

Revada Guernseys

BRED IN THE PURPLE



Every animal on this farm is imported, and carries the blood of such noted sires as Governor of the Chene, Sequel's Monogram, and Governor of the Gree.

HERD BULL IMP, Ricardo of Edgmoor 34367

Some Fine Young Bulls FOR SALE

See Our List of Winnings at the California State Fair

REVADA FARM

B. E. NIXON, Proprietor.

Yountville,

Napa County, California

355 lbs. Butterfat in 100 Days 8000 lbs. Milk

Average 4.44% Fat

This is the official record just made by Aaggie Acme of Riverside 2d. This great production is the result of concentration of producing blood, and still further demonstrates the prepotent qualities of her great sire—

KING MEAD OF RIVERSIDE.

A few of his sons are now available from high record dams, several of which carry more than 60 per cent the same blood as this noted cow. We can also offer some great bargains in sons of the proven sire and show bull—

SEGIS PONTIAC DE KOL BURKE,

whose two-year-old daughters are doing remarkably well in A. R. 9. work, one having already exceeded 23 pounds butter in seven days. Also a few exceptionally good sons of the great

PRINCE GELSCHIE WALKER,

whose two-year-old daughters have broken several State records as well as one world record.

WRITE FOR INFORMATION, PEDIGREES AND PRICES.

A. W. Morris & Sons, Woodland, California

MILLBRAE DAIRY HOLSTEINS

Herd established 25 years. Every cow a proven profit-maker. Every sire a proven getter of profitable dairy cows.

Bulls from high record dams for sale at all times. Here's a good one:

KING PONTIAC NETHERLAND BARRILOS

Born March 18, 1915. Sire: KING PONTIAC MUSA NETHERLAND 89775. Dam: SLEEPY BARRILOS OF MILLBRAE 161752. Official records 675.4 pounds milk and 30.88 pounds butter in 7 days; 2023.2 pounds milk and 122.56 pounds butter in 30 days. A wonderful producing cow who has a 31.86-pound 4-year-old daughter and a 24.95-pound 3-year-old daughter. Bull is a good individual.

Prices and Pedigrees on Application.

MILLBRAE DAIRY,

Millbrae, San Mateo Co.

844.8 lbs. of BUTTER FAT in ONE YEAR or 983 lbs. of butter is the record of

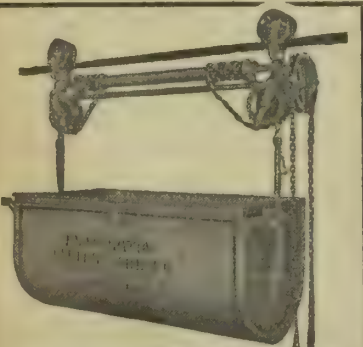
This Grade Guernsey Cow

Her milk production for the year was 16286.1 lbs.

GUERNSEY PRODUCTS HAVE THE HIGHEST NATURAL YELLOW COLOR OF ANY BREED

Write for our free booklet "GRADE GUERNSEYS"

THE AMERICAN GUERNSEY CATTLE CLUB
BOX P. P. PETERBORO, N. H.



LOUDENCARRIERS SAVE MONEY

Full Stock Feed Carriers
Litter Carriers

California Hydraulic Engineering & Supply Co.

68 Fremont St., San Francisco.
AMERICAN PUMP COMPANY,
424 East Third St., Los Angeles.

head; lambs \$5 to \$7.40; fat steers \$73 to \$100; with all prices on the increase.

A large number of brood mares and youngsters purchased by Louis Titus at the Woodland Stock Farm dispersal, have been sent to New York and will be sold at the mid-winter auction next week.

The public sale of registered Shorthorn cattle to be held at Mayfield May 2, 1917, from the Carruthers Farms herd ought to interest every lover of the red-white and roan. The twenty mature cows have all been in California 2 years and are perfectly climatized to California and Coast conditions. Every one will either have a calf at foot or will be well along in calf to guarantee them breeders. The twenty head of yearling bulls and heifers are California bred, a large per cent of them having been bred and raised at Carruthers Farms. The eight two-year-old bulls are of the richest Scotch breeding. They have been in California a year and are climatized and are ready for hard service.

POLAND CHINA MEN FROM STATE ASSOCIATION.

At a big get-together banquet Tuesday night at Hanford, just preceding the auction sale, Poland-China men from all over the State organized a State-wide association for the purpose of systematically boosting the breed as well as to assist in the development of the swine industry in the State. Feeling as they do, that the Poland-China hog is particularly adapted to meet the conditions existing in the State, these men propose to proceed to advertise this fact to the end that there shall be an ever-increasing demand for the "truly American hog."

The following officers were elected, and the first meeting is called for the Farmers' week at Davis, in May: President, Wm. Bernstein, Hanford; Vice-President, O. L. Linn, Modesto; Secretary-Treasurer, R. H. Whitten, Los Angeles. Directors: Nate Hauck, Alton; C. R. Hanna, Riverside; H. J. Marsh, Modesto; M. Basset, Hanford.

HIGH-PRICED HOG SALE.

One of the most successful auctions that have ever been conducted in Imperial Valley was that of J. Frank Walters of Brawley, Feb. 26. D. L. Zinn proved himself some auctioneer, and Chas. Johnson an able ring manager.

The herd boar, Col. Crimson, sired by King the Col. and out of Crimson Lady II, was taken for \$165 by Paulin and Wilson of Imperial. The brood-sow, Ed's Model, and her litter of five was sold to R. N. Miller of Brawley for \$175. She was sired by Taxpayer. Ten gilts by Pathfinder averaged \$59 per head. One gilt by Illustrator topped the gilt sale at \$112.50.

LIVESTOCK DIRECTORY.

SWINE.

Poland Chinas.

SEND FOR FREE CATALOG—Finest ever issued. Tells of the famous Whitten Ranch money-making strain of Big Type Poland-Chinas. Make greatest weight in shortest time at lowest cost topping market at 225 lbs. in 6 months. 600 head both sexes, all ages, reasonable prices. Satisfaction guaranteed. Ranch in Tulare County, but address owner, R. H. Whitten, 610-A Security Building, Los Angeles.

GRAND CHAMPION SUPERBA POLANDS—A few choice spring Superba boars ready for service. Sows bred to Superba for fall litters. Prices reasonably low. Rough's Greenfields, Arlington Station, Riverside, Cal.

BOARS of serviceable age all sold. We have a few choice gilts bred to John Henry; an exceedingly choice boar. Also have a fine lot of Fall pigs, either sex. Bar N Ranch, E. A. Noves & Son, Props., Sutter, Calif.

POLAND-CHINAS—Bred gilts, \$15; young boars, \$10 and \$15; bred sows, \$25. Weanlings, either sex, \$6. Registered and crated, purchaser to return crates. E. A. Hall, Watsonville, Cal.

REGISTERED POLAND CHINAS—Young boars ready for service. Weanling pigs, both sexes. Prices attractive for quick sales. J. H. Cook, Paradise, Cal.

LAKEVIEW STOCK FARM POLAND CHINAS are money-makers. Satisfaction or money refunded. Geo. V. Beckman & Sons, Lodi, Cal.

POLAND-CHINAS—Big type combined with quality. Choice bred sows, gilts, boars. W. D. Trewitt, Box 82A, Hanford, Cal.

POLAND CHINAS—Big type. Shoats, either sex, or in unrelated pairs. O. L. Linn, Linview, Route A, Modesto, Cal.

REGISTERED POLAND CHINA SWINE—Prize-winners. Finest stock in the State. \$20 up. M. Basset, Hanford, Cal.

POLAND-CHINAS—Stock for sale at all times. We please you or refund your money. W. A. Young, Lodi, Cal.

BIG-TYPE POLAND CHINAS—Stock from the best herds of the Middle West. N. Hauck, Alton, Humboldt Co., Cal.

REGISTERED POLAND-CHINAS and Duroc Jerseys. Cholera immune for life. T. H. Beckman, Lodi, Cal.

POLAND-CHINAS—Large type. The Browning Stock Farm. W. H. Browning, Woodland, Cal.

DEACON RANCH POLAND CHINAS—Prize winners. Young stock reasonable. Box 27A, Davis, Cal.

KNOB HILL STOCK FARM—Registered Poland-China Swine. A. M. Henry, Farmington, Cal.

AMAWAGE FARMS—Poland-China hogs and Holstein cattle. G. H. Loughery, Visalia, Cal.

POLAND-CHINAS—Prize-winners. Money-makers. W. Bernstein, Hanford, Cal.

REAOAKS RANCH herd of registered Poland Chinas. W. J. Hanna, Gilroy.

REGISTERED POLAND-CHINA HOGS—J. A. Clark, R. 4, Lodi, Cal.

Berkshires.

GRAPEWILD FARM BERKSHIRES—World's Fair Grand Champion Grand Leader 2nd heads our herd, not only himself a champion, but the sire of Champions. At the 1916 California State Fair his daughters won first in all of the senior sow classes, including the Grand Champion Sow. At the 1916 Oregon State Fair a Grand Leader sow was Junior Champion. We are offering a number of choice boars of exceptional breeding and are also booking orders for Fall pigs. A. B. Humphrey, Escalon, San Joaquin Co., Cal.

CHOLERA IMMUNE BERKSHIRES—August Masterpiece boars September values. Bachelor boars and November Ames Rival boars, \$20 to \$35 each. Fall gilts, \$25. All registered and from choice dams. Prices for March only. W. H. Waugh, Riverside, Cal.

REGISTERED BERKSHIRES—Progeny of Improver B. Young stock now ready for sale. Start your herd with breed and strain of established reputation for California conditions. Geo. G. Meckfessel, Berlin, Cal.

BERKSHIRES—I have one of the best herds on the Pacific Coast, including Grand Champion Sow, Reserve Grand Champion Boar under one year. Third Aged Boar, etc. Frank A. Brush, Santa Rosa, Cal.

IMMUNIZED NORMANDY BERKSHIRES. Good type. Breeding stock, any age, for sale at all times. Cast iron guarantee. Arlington Smith, Visalia, Cal.

BERKSHIRES—Bred sows and weanling pigs. Write for prices and pedigrees before buying. Butte City Ranch, Box P, Butte City, Glenn Co., Cal.

REGISTERED BERKSHIRES—Special offering. Three service boars at prices to move them quick. Write us. Imperial Stock Farm, Morgan Hill, Cal.

ROSE CREST BERKSHIRES—Rivals Champion Best blood. Open and bred gilts. Service boars. F. L. Hall, Perris, Cal.

CARRUTHERS FARMS BERKSHIRES—Cholera immune. Second annual sale August 2, 1917. Mayfield, Cal.

30 REGISTERED BERKSHIRES—Boars and gilts for sale. J. H. Benedict, Lemoore, Kings county.

HOPLAND STOCK FARM—Registered Berkshires. Prices on application. Hopland, Cal.

REGISTERED BERKSHIRES—Geo. M. York, Modesto, Cal.

Duroc-Jerseys.

LARGE NUMBER of excellent young boars ready for immediate service. Weanlings of either sex. Sired by Joker, first prize boar at Wisconsin State Fair, 1915. Sows and gilts, sired by Iowa Wonder, and bred to Joker and Sunnydale's Chief. For prices and further information write, Geo. A. Smith, Corcoran, Cal.

FIRST PRIZE HERD—Headed by Uneeda Wonder, 2nd prize boar at Nebraska and a winner at Omaha, 1916. Grandson of Crimson Wonder, Arian and H. A.'s Queen. Entire offering of Spring pigs will be from 1st or 2nd prize-winners. Inquiry solicited. Haden Smith, Box 84D, Woodland.

REGISTERED DUROC-JERSEYS—Service boars from prize-winning stock are money-makers. They grow faster. New England California Corporation, Ripon, Cal.

CROLEY'S BALANCED HOG FEED—the cheapest feed to fatten hogs. Write Geo. H. Croley Co., Inc., Live Stock Supplies, 631-637 Brannan St., San Francisco.

DUROC JERSEYS—Herd boars. E. N.'s Colonel and Tulare Boy. Sweepstakes winner at Fresno, 1915. Choice breeding stock. J. P. Walker, Visalia.

RANCHO RUBIUS DUROCS—All sold except a few July and September gilts. Extra good. Write for prices. Elmer Lamb, Ceres, Cal.

DUROC JERSEYS—Sow and boar pigs from Registered Stock. Low prices. Delta Farm and Live Stock Co., Colton, Cal.

REGISTERED DUROCS of guaranteed breeding. All ages. Weaned pigs, \$10. H. E. Boudier & Son, Napa.

HEAVY BONED DUROCS—A few service boars for sale. Ormondale Co., Route 1, Redwood City, Cal.

DUROCS—Defender, Cantic B and Golden Model strain. The big type. Allen Thompson, Tulare.

REGISTERED DUROCS—Crimson Wonder stock. Young stock, both sexes. L. D. Collins, Denair, Cal.

REGISTERED DUROC-JERSEY SWINE—Both sexes. Big-boned type. B. F. Kendall, Hardwick.

WINTON DUROC-JERSEY FARM, Winton, Cal.—High-class pure-bred hogs both sexes, any age.

BIG TYPE DUROCS—Quick maturing. Easy keeping. Frederick M. Johnson, Napa, Cal.

DOS HERMANOS REGISTERED DUROCS—Duveneck & Pickersgill, Ukiah, Cal.

DUROC-JERSEY REGISTERED HOGS—River Bend Farm, St. Helena, Cal.

CURTIS DUROCS of either sex at all times. E. C. Curtis, Napa, Cal.

DUROCS—Big type, both sexes for sale. Ed. E. Johnson, Turlock, Cal.

REGISTERED DUROC-JERSEYS—S. S. Southworth, Napa.

Yorkshires.

LARGE YORKSHIRES—Choice spring boars, gilts, and weaned pigs from Champion sow P. I. E., or from breeding of champion boar and sow, Sacramento, 1916. If you see them grow you will like them. Riverina Farms, Paradise Road, Modesto, Cal.

LARGE YORKSHIRES—The ideal hog for the progressive farmer. Young stock for sale. A. L. Tubbs Co., Calistoga, Cal.

Chester Whites.

BILLIKEN HERD OF CHESTER WHITES—The type that is ready for market in 7 months or less. The easiest feeders of all. Buy now before prices advance. The price of market hogs is going out of sight. Twenty bred gilts due to farrow in May and June. Forty pigs, both sexes, four months old. Write for Circular and Booklet today. C. B. Cunningham, Mills, Cal.

REGISTERED IMPROVED CHESTER WHITES—Two service boars, one brood sow. Write for price. G. H. DuBois, San Martin, Cal.

REGISTERED IMPROVED CHESTER WHITES—Grizzly Bear Ranch, East Auburn, Cal.

Essex.

LITTLE BLACK ESSEX—Service boars and weanlings. Only herd in the State. Limited supply. Yolo Essex Herd, L. W. Millsap, Yolo, Cal.

Hampshires.

BELLA VISTA HAMPSHIRE SWINE—From prize-winning stock. J. W. Henderson, First National Berkeley.

DAIRY CATTLE.

Holsteins.

FOR SALE—From 1 to 100 extra fine, straight, well-marked, light colored, highly bred, registered Holstein heifers from 6 to 18 months old. They are rich in the blood of King of the Pontiacs, Pontiac Korndyke, Hengerveld De Kol, Rag Apple Korndyke 8th, King Segis and other most celebrated sires of the breed. Prices very reasonable. Write Geo. A. Smith, Corcoran, California.

ONE REGISTERED HOLSTEIN BULL, four years old, for sale. Raised him ourselves. Must sell or exchange on account young stock. Guaranteed free from trouble of any kind. Frank L. F. Jausand, Rt. 2, Box 113, San Diego.

REGISTERED HOLSTEINS—Herd sire King Korndyke Hengerveld Ormsby 7th, 86623. His full sister as Junior 3-year-old made 32.04 lbs. butter in 7 days. The record of his dam and his sire's dam averaged 30.98. George Kounias, Modesto, Cal.

CHOICE HIGH GRADE Holstein cows and heifers—Springers and open, 15-16ths pure. Heavy producers and of correct dairy conformation. Priced right. In calf to 31-lb. Bull. Write or wire Kenmoor Farms, Oconomowoc, Wisconsin.

REGISTERED HOLSTEINS—Grandsons of King Segis and of world's record cow Creamelle Vale. Will build up the production and value of your herd. Write or call and see them. F. H. Stenzel, San Lorenzo, Cal.

TULARE GUERNSEY AND HOLSTEIN Farm is offering young bulls of both breeds. Excellent breeding. Prices reasonable. W. J. Higdon, Tulare, Cal.

THE MCLOUD RIVER LUMBER CO., McCloud, Cal.—High-class thoroughbred Holstein bulls for sale. Write for prices and pedigrees.

J. H. HARLAN, WOODLAND, CAL.—Breeder of Registered Holsteins. Sold out at present. Watch for announcement on King Valdessa.

FOR SALE—Two registered Holstein cows with A. R. O. records. Write for particulars. J. W. Benoit, Route C, Modesto, Cal.

THE HENDERSON CO.—Breeders and importers. Registered Holsteins. Sacramento Bank Bldg., Sacramento.

BREEDERS OF REGISTERED HOLSTEIN cattle and Berkshire pigs. Whittier State School, Whittier, Cal.

REGISTERED HOLSTEINS—A. W. Morris & Sons, Corp., Importers and Breeders. Woodland, Cal.

CREAMCUP HERD—Registered Holsteins Pontiac calf calves. M. Holdridge, Modesto, Cal.

SUNNYSIDE HERD—Registered Holstein cattle. R. F. Guerin, R. 3, Box 58, Visalia.

REGISTERED HOLSTEIN CATTLE—E. E. Freeman, Route B, Modesto, Cal.

REGISTERED HOLSTEIN BULLS for sale. Sunnybrook Ranch, Willits, Cal.

REGISTERED HOUSTEN BULLS for sale. C. L. Morse, Route B, Modesto, Cal.

BREEDERS OF REGISTERED HOLSTEIN Cattle—McAlister & Sons, Chino, Cal.

REGISTERED HOLSTEIN BULLS, \$50 to \$150. Glorietta Stock Farm, Woodland, Cal.

REGISTERED HOLSTEIN BULLS from A. R. O. dams. B. F. Anderson, Modesto, Cal.

GOTSHALL AND MAGRUDER—Breeders of Registered Holstein-Friesians. Ripon, Cal.

CHOICE HOLSTEIN bulls for sale. No females. Milbrae Dairy, Milbrae, Cal.

REGISTERED HOLSTEIN-FRIESIAN CATTLE—J. M. Campbell, Escalon, Cal.

BREEDER OF HOLSTEIN-FRIESIAN CATTLE—Dr. Ben Stetson, Napa, Cal.

A. R. O. HERD OF HOLSTEINS—Alex. Whaley, Tulare, Calif.

Jerseys.

JERSEY BULLS AND BULL CALVES—Sons and grandsons of 2 and 3-lbs. cows. None better. Cheap for quality. N. H. Locke, Lockeford, Cal.

VENADERA HERD OF JERSEYS offers calves from Register of Merit Cows with official yearly records. Write for list of bulls. Guv H Miller Route 1, Modesto, Cal.

BREEDER OF REGISTERED JERSEY CATTLE—Duroc Swine. Young stock for sale. W. J. Hackett, Ceres, Cal.

JERSEY BULLS AND HEIFERS from Register of Merit Cows for sale. C. G. McFarland, R. 2, Tulare.

REGISTERED JERSEYS—Young bulls and bull calves. T. B. Purvine, Petaluma, Cal.

YOUNG REGISTERED JERSEY BULL Calves at reasonable prices. O. J. Ames, Oakdale.

JERSEY BULLS—Sons of Gertie's Lad and Gertie's Son's Victor A. A. Jenkins, Tulare, Cal.

JERSEY BULLS from Register of Merit cows. C. D. Hayworth, Modesto, Cal.

Guernseys.

PACIFIC GUERNSEY HERD—Cattle selected from best imported and Advanced Register Stock. Now offering choice bulls. C. S. Rasmussen, Loleta, Cal.

EDGEWOOD FARM GUERNSEYS—First in the show ring and in official records. Few animals of either sex for sale. Edgewood Farm, Santee, Cal.

BELLA VISTA GUERNSEYS—Males from A. R. dams, \$100 up. J. W. Henderson, 1st National, Berkeley.

Ayrshires.

AYRSHIRES—Registered; all ages. E. B. McFarland, 412 Claus Spreckels Bldg., San Francisco.

AYRSHIRES—Registered—75 head. All ages. Young stock for sale. Le Baron Estate Co., Valley Ford, Cal.

BEEF CATTLE.

SHORTHORNS—Herd headed by grandson Whitehall Sultan. Calves sired by \$10,000 Prince Imperial for sale. One or a carload for sale. Get our prices before buying. Butte City Ranch, Box P, Butte City, Glenn Co., Cal.

SCOTCH AND SCOTCH-TOPPED SHORTHORNS—We have the largest herd of straight Scotch cows in California. Foundation stock of both sexes for sale; also a choice lot of range bulls. Barco Ranch, Hollister, Cal.

D. O. LIVELY STOCK FARM, INC., 216 Hobart Bldg., San Francisco, breeders of Hereford cattle. A few choice heifers for sale. We buy and sell livestock on commission. Farm at Mayfield, Cal.

REGISTERED YEARLING SHORTHORN Bulls—Heavy-boned, thick-meated Scotch and Scotch-topped breeding. Ormondale Co., Route 1, Redwood City, Cal.

BREEDERS OF REGISTERED SHORTHORNS—Milk strain. Choice young stock for sale. John Lynch Ranch, Box 321, Petaluma, Cal.

REGISTERED AND UNREGISTERED—Shorthorn bulls for sale. Paicines Ranch Co., 320 Sharon Bldg., San Francisco.

INNISFAIR DAIRY SHORTHORNS—Registered young bulls for sale. Alexander & Kellogg, Suisun, Cal.

HOPLAND STOCK FARM—Registered Shorthorns. Prices on application. Hopland, Cal.

REGISTERED HEREFORDS—H. H. Gable, Diamond G Ranch, Esparto, Cal.

SIMON NEWMAN CO., Breeders of Registered Herefords. Newman, Cal.

GEORGE WATTS—Breeder registered Herefords. Bishop, Cal.

SHORTHORNS—Carruthers Farms, Mayfield, Cal.

SHORTHORNS—Fair Oaks Ranch, Willits, Cal.

SHEEP AND GOATS.

F. A. MECHAM ESTATE, Petaluma, Cal.—Breeders and Importers of Shropshire, Rambouillet and American Merinos, both sexes. Also Red Polled cattle. Take electric car at Petaluma or Santa Rosa for Live Oak Ranch.

SHROPSHIRE—Ewes and Ewe lambs for sale. International winner heads flock. Butte City Ranch, Box P, Butte City, Cal.

KAUPKE BROS., WOODLAND, CAL.—Breeders and Importers of Hampshire sheep.

DORSETS AND ROMNEYS—Dorset ram lambs for sale. John E. Marble, Los Angeles.

BISHOP BROS., SAN RAMON, CAL.—Breeders and Importers Shropshires.

CHAS. KIMBLE—Breeder and Importer of Rambouillets. Hanford, Cal.

HORSES AND MULES.

FOR SALE—French Imported Percheron stallion; dapple gray, 6 years old; weight, 2150 lbs. Pedigree can be had by corresponding with C. W. Koch, owner, Suisun, Cal.

FINE YOUNG JACKS and Jennies for sale. Black with white points. Eligible to register. Geo. A. Mast, Madison, Yolo Co., Cal.

REG. PERCHERON STALLION for sale. Dapple gray, 9 years, 1900 lbs. For particulars address Box 236, Vallejo, Cal.

REGISTERED SHIRES—Black Hawk Stock Farm, Importers and Breeders, Easton & Ward, Proprietors, Burlingame, Cal.

MISCELLANEOUS.

SAN FRANCISCO LIVESTOCK EXPORT Co., Eugene B. Croley, Manager, solicits foreign orders for purebred registered and merit breeding animals and fowls. California has great diversity of climatic and other conditions that enable us to select animals that have been raised under conditions similar to those of the location for which they are intended. We should be informed regarding these conditions and be allowed ample time to make selections. Nearly all disappointments in buying are the result of insufficient information as to conditions or to lack of time for proper selection. Our plan and terms for "raising animals to order" to fit into peculiar foreign conditions is worth investigating. References: Dun or Bradstreets, or San Francisco banks. Office, 319 Underwood Building, 525 Market St. San Francisco.

ATTENTION, STOCK MEN! Population increasing, meat decreasing. Greatest rush in years for Government and State land. Free homes. Safe investments without residence. School, State, Indian, Government lands. Now available. You have nine rights now worth \$1,000 each. Booklet and 640 acre Homestead Circular Free. Write Joseph Clark, Sacramento.

LIVE STOCK INSURANCE—Registered live stock and farm work horses should be insured. The Hartford Company, strongest in the world, writing live stock. No trouble to answer questions. D. O. Lively, special representative, 215 Hobart Bldg., San Francisco.

CROLEY'S BALANCED DAIRY FEED—the cheap milk producer; and Croley's Calf Meal—the best California calf raiser. Geo. H. Croley Co., Inc., 631-637 Brannan St., San Francisco.

VETERINARY QUERIES.

[Answered by Dr. H. B. Wintringham, Petaluma, Cal.]
[Subscribers wishing an immediate reply should send money order for \$1.00.
No charge for questions answered through this department. Name and address of subscriber must accompany each query.]

COLT'S LEGS LAME.

To the Editor: A ten-months colt has become lame in one leg after another, and now his hind leg is



Gertie's Son, Victor, No. 123159.
Dam, Victor Lady Lake (R. O. M.) of
536 pounds butter in 303 days as
a 4-year-old.

INVEST in JERSEYS and Start Right

135 Registered Jerseys in my herd,
including 18 Register of Merit Cows,
Blue-ribbon winners at 1916 Hanford,
Bakersfield, and Visalia Fairs.

CORRESPONDENCE SOLICITED.

A. A. JENKINS
TULARE, CALIF.



"Good
to the
Last
Drop"

Raise Your Calves on Blatchford's Calf Meal and Sell the Milk

More calves have been raised on
Blatchford's Calf Meal than on all
other milk substitutes combined.

100 lbs. makes 100 gallons of milk substi-
tute, costing only one-third as much as milk.
Prevents scouring and insures the early
maturity of sleek, handsome calves.

It is steam-cooked and no trouble to pre-
pare or use.

Write for Pamphlet "How to Raise Calves
Cheaply and Success-
fully with Little or No Milk." At dealers, or
Coulson Poultry & Stock Feed Co., Inc.,
Petaluma.

BAKER'S TRACELESS HARNESS



Best plow rig. NO WHIFFLETREES—NO TRACES.
Handiest farm harness.

Indispensable in the orchard with special fitness for
all low down work. You can hitch closer to your
load, plow and cultivate close to the row and save
all the worry to man and team. No weight of
whiffletrees for man to lug. Everything clear behind
team. Use our outfit and save your trees. Highest
endorsement of farmers and fruit growers.

Write now. **B. F. BAKER CO., NUMBER
(1220) MAIN ST., BURNETT HILLS, N. Y.**

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Will conduct sales anywhere in
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Purebred livestock sales given special
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Dam, Mae of Venadera, Sire, Thomas Exite King
A splendid show bull, well grown and ready
for service—PRICE, \$100.

Also full brother to above, 3 mos. old,
Price, \$75.

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swollen from the stifle to the hock.
He lies down most of the time with
legs stretched out and generally has
to be helped up. He urinates fre-
quently and the urine is of a whitish
color. His feed has been wild hay.
I am now giving him chopped barley
and wheat bran. Has a good appe-
tite.—E. M. C., Eagleville.

Give the colt one pound Glauber's
Salts dissolved in warm water, then
follow with this prescription: Hexa-
methylamine one dram, sodium
salicylate one dram and fluid extract
colchicum one-half dram. This dose
to be dissolved in water and given
to the colt twice a day.

MARE'S KIDNEYS BAD.

To the Editor: One of my mares is
in bad condition. Eats well, feels
well, but does not stand the work,
stays thin standing in the barn. Kid-
neys are bad; frequent and copious
urine often contains sediment. Af-
ter standing she lifts her hind legs
up and seems to have difficulty get-
ting them down again. Feed alfalfa
hay and barley. Oat hay acted on the
kidneys so bad I had to stop it.—H.
P. M., Ripon.

Quit feeding alfalfa altogether.
Give the following: Fluid extract
nux vomica 2 ounces, fluid extract
gentian 2 ounces, fluid extract cas-
cara 2 ounces, Fowler's Solution
enough to make 16 ounces. Give
two tablespoonfuls of this twice a
day.

SWELLING ABOVE HOOF.

To the Editor: About three months
ago my pony became lame. I noticed
a little scratch from which the blood
trickled. I put some turpentine on
the wound. Soon a swelling ap-
peared above the hoof and I had the
shoe removed. I poulticed it with
flaxseed and pus ran out a little.
The last month I have been using
gasoline and sometimes kerosene,
also Black Horse and XXX liniments.
Put lime on the sore.—C. H. P.,
Santa Clara.

Your pony has developed a quitter,
and an operation is the only means
which will afford relief. Consult
your veterinarian.

PUS IN MARE'S FOOT.

To the Editor: Three months ago
a 12-year mare went lame. I turned
her out to pasture and yesterday
found her frog was full of pus. Foot
is not feverish or sensitive nor the
leg swollen, but she limps.—M. F. M.,
Santa Margarita.

If you had examined the foot thor-
oughly when horse went lame you
would have found that a nail had
punctured the foot. Clean out all
the dead horn and pack the tract
right down to the bottom with cot-
ton soaked with tincture of iodine.

TO CHECK BLEEDING BAG.

To the Editor: What is the best
way to check a blood vessel to pre-
vent an animal bleeding to death be-
fore veterinarian arrives? How can
we prevent blood poison? I want
something to keep on hand. A cow
cut a vessel in her bag.—M. P. De-
lano.

Pack the wound tightly with cot-
ton soaked in tincture of iron and
bandage this tightly in place.

WORMS IN COW'S BACK.

To the Editor: My cow on pasture
got grub worms in her back.—J. D.,
San Leandro.

Consult old issues for treatment
of this trouble.

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For dairymen, farm-
ers, feeders in all
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For water, wine, oil, vine-
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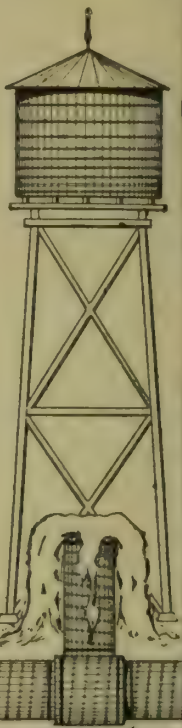
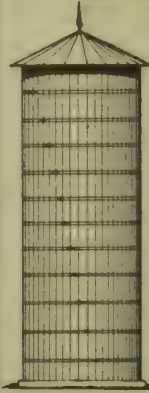
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shoes are to your feet. The
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Raising Poultry for Profit

WHY IT PAYS TO USE PURE-BRED FOWLS.

[Written for Pacific Rural Press by Susan Swaysgood, Pomona.]

The first question a person asks who is thinking of going into the poultry business is, Does it pay to buy purebred fowls? Generally they add to the inquiry the information that they only want them for utility, which in plain terms means profit. But the trouble is, most folks get mixed up in the meaning of "utility." They think "utility" means a scraggy, mongrel-looking hen, of no particular color, shape, or breed.

This idea is all wrong, because a real utility fowl can and should be a good-looking fowl as well as an industrious one. By purchasing purebred fowls you are getting the concentrated knowledge of the best breeders and originators of fowls, who know. They had one particular idea in mind in originating the breed, and their idea has been backed up and every good quality increased and perpetuated by subsequent breedings, by culling and selecting for the best qualities in the original breed.

Now, unless we exempt bantams and a few ornamental varieties, it is safe to say that originators and breeders had in mind the utility of the fowls they went to work on.

A few words on crosses are here necessary. A cross is the result of using the male of one pure-bred fowl on the female of another; but you must have confirmative evidence that both were really pure-bred specimens of the breeds they represent; if you have not this evidence you simply produce another mongrel to the already big list, and it will be of no more value than any other specimen of the mongrel breeds. Intelligent line breeding—that is, breeding the one strain of the same breed, without crossing the blood strain by introduction of outside blood—requires skill; but when it is practiced right, it brings out the best qualities of the breed, not merely for show purposes, but for utility purposes.

If I have a few hens, say but four, of known laying merits, and I have a male from one of those hens and an equally good sire, I can safely breed those five for one year and get a number of good hens. But if I just hatch eggs from all hens having the same color and other features, I am merely perpetuating the species, even though I buy new blood every year. So that pure-bred poultry have been bred for a definite purpose, while the mongrel has always been a haphazard proposition that turns out like a boy pitching pennies—heads or tails, just what happens to fall face up.

The pure-bred fowls, even in Leghorns, are so badly mixed up one hardly knows where to find one; but believe me, it pays to get a few and breed up from them, provided you want Leghorns. The farmer and small rancher, however, should not tie himself to Leghorns. He needs something which, when he gets through with it, he can get more for than he has spent in raising it. This cannot be said of the small breeds; but when you get to the brown-egg

breeds, it is simply a matter of choice which will bring in more money for table purposes after they have served their purpose as layers than it cost to raise them. Sometimes, I admit, we may get good result from a cross, but it is simply guess-work. One time I tried Houdan on Buff Orpingtons, and they gave me the horrors till I got rid of them. Now, the Houdan, when well bred, in some localities, is a splendid fowl for the farmer. It has more breast meat in proportion to size than many larger breeds, it is docile, easy to fence, and lays a large white egg—as large, in fact, as the black Minorca. But in localities where they have fleas, the fleas get in the topknots and drive the hens crazy; and in other localities where there are hawks, the topknot makes the Houdan an easy prey for hawks.

However, I am not going to exploit any particular breed; they are all good if bred right, fed right, and housed right. One man or woman will take a pen of fowls and make them lay and pay, then turn them over to another person who may be equally earnest, but somewhere he lacks in judgment, and the same fowls are a loss financially. The difference lies in the people, not in the fowls at all, and very often it is just a simple cause that merely wants to be understood in order to make the adjustment. If you cannot make that adjustment yourself and find out the thing needed for yourself, no amount of talking will give it to you. It's what in animals we call instinct, I guess, and textbooks call it "intuition"; but it's one and the same thing, and if you have not got it I can't tell you where they make it.

A HIGH-PERCENTAGE HATCH OF EGGS.

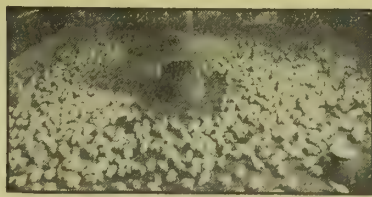
[Written for Pacific Rural Press.]

We found John W. Johnston of Imperial county in his incubator cellar busily testing eggs that had been in four days. The regularity with which he returned them to the tray made us marvel; and he told us that out of 1590 just tested, only 108 had proved infertile or dead germs. During his six-months hatching season last year, he sold 10,000 baby chicks and kept over a thousand for himself. These represented 80 per cent of the eggs he had put into the incubators.

Several reasons were given for the remarkable fertility and strength of the eggs being set in mid-January, when we would ordinarily expect weak eggs. The principal reason is, perhaps, vigorous cocks. When a cock gets a harem which does not run away from him, but goes with him about the fields, one that hoganizes well, and acts vigorous, he is retained. A cock with a "henly" head, one which tries to hobnob with all the hens, and runs when another cock gets after him, is not popular with the hens and is not a good breeder. Of vigorous cocks about one per 15 hens is kept, and is found sufficient on the open range.

The second main point is vigorous hens. They have a 40-acre alfalfa-

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White Leghorn and White Plymouth Rock Cockerels. White Leghorns and White Rock Baby Chicks hatched from specially selected heavy-laying stock. Prices same as last season. White Leghorns, January and February delivery, \$12.50 per hundred; March, \$10.00; after April \$10.00. Write Plymouth Rocks, \$15.00 per hundred. All F. O. B. Hopland.

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Several carloads going in small lots at wholesale prices; galvanized chicken wire, \$2.25 to \$11.65; 150-foot rolls; any height desired.

Graduated mesh, \$2.70 to \$5. 165-foot rolls, all heights. Eighty rods. Glidden barbed wire, \$3.50.

Wire nails, \$4.05. 100,000 feet five-ply hose, 6 1/4 and 7 1/4 cents.

200 bath tubs, complete double combination; nickel-plated cocks, waste and overflow, \$22.50.

Sixty A grade white vitreous toilet and overflow, \$19.50.

400 sinks, \$3.25 up, with strainer. Ready Roofing, 108 square ft., 90c to \$1.75.

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Nails and cement. Full line new and second-hand plumbing, all its branches; fair ground stock of electrical fixtures, quarter price, like new; 100 large indirect fixtures, \$7.50 each, suitable for hall or public buildings; 100,000 feet choice 26-gauge galvanized corrugated iron, 40 per cent less than new.

3,000,000 feet rough dimension lumber.

1,000,000 Star a Star redwood and cedar shingles, doors, windows, glass, cement. Everything pertaining to the construction of a building.

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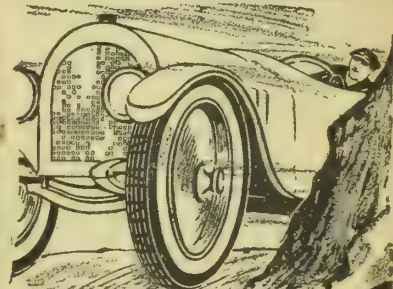
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Box 482F, Stockton, Cal.

barley patch to roam at will. They pick that all day, and what insects they find in it. They may help themselves to milo corn in the head, though Mr. Johnston prefers it



NORWALK TIRES

These famous casings are invariably delivering mileage greatly in excess of their liberal guarantee of 7500 miles for Ford Sizes and 6000 miles for larger sizes. They are built by hand to withstand positively the most severe service. They represent the greatest value ever offered discriminating motorists. Give Norwalks a trial—you'll notice a conspicuous absence of tire trouble. Ask for folder.

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BABY CHICKS.
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BABY TURKS.
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Hatching Eggs.
Breeding Stock.
Rabbits, Dogs, Cats, Pets.
Everything in Hair, Fur and Feathers.
FANCIES' EXCHANGE,
640 S. Main St., Los Angeles, Cal.

threshed because the hens get enough exercise in the alfalfa. A mill-feed mash is fed with all the skim milk the hens want. Twenty-one cows are now milked, the first ones having been bought so skim milk would be available for poultry. Now the surplus skim milk is fed to hogs.

Care of Eggs.—The eggs are not allowed to get over seven days old, though Mr. Johnston has had good hatches from eggs 14 days old. They hatch better if set fresh, however. They are put into egg cases when gathered; and each night one or the other end of the case is propped up several inches. The raising of ends alternately every 24 hours shifts the yolks and keeps them from sticking.

The incubator cellar has 5000-egg capacity, with the possibility of double-decking the incubators. It was dug three feet into the ground and a low wooden A-roofed shed built over it so there is plenty of standing room. A ventilator in the ridge lets out some of the hot air; though it was comfortably warm at the time of our visit. Mr. Johnston was then beginning the incubation of a 6000-chick order.

QUESTIONS AND ANSWERS.

Squabs — Chickens — Rabbits.—Tell me, please, which is the most profitable for the person of limited means, squab raising or chickens, and is a broiler plant practical? Where can I get a book on rabbits, raising, mating and feeding?—Marie L., Newman.

The squab market is not always reliable, but chickens are always salable, so it is much safer to go into chickens, as the returns are quick and sure. Yes, a broiler plant is both practical and profitable if run right. For a good book on rabbits write to Mr. Frank H. Snow, editor of Petaluma Poultry Journal, Petaluma.

Dropsy of Legs.—We have a hen whose legs are swollen to three times normal size, now going to the toes, legs are soft and puffy. Seems to feel good, eat good, and is laying. What is the cause and cure?—Mrs. J. W., Mitchell.

This is dropsy of legs or gout. Cause is cold ground and lack of exercise that has made the circulation sluggish. Nothing wrong organically. Give a few doses of castor oil, say one tablespoonful three times during a week, or every other day. Put some litter in scratching pen or feeding ground and feed plain, unstimulating feed. But plenty of exercise will solve the question.

Rabbits with Sore Ears?—What is the cause of my rabbit does getting sores and scales inside their ears?—F. F. U., Napa.

[Answered by Geo. H. Croley.]

Among rabbit breeders it is the most common belief that this trouble is due to a parasite that is carried to the hutch with the grain or fodder. As a remedy some breeders have obtained satisfactory results through several treatments with peroxide of hydrogen. Apply this with a sponge or soft cloth. If the ears have become very much inflamed dress them with finely powdered boracic acid, carefully dusting this over the affected surfaces. Handle the ears very carefully to avoid pain, increased irritation and spreading of the sores.

POULTRY NOTES.

An oversupply of fats or oils, particularly vegetable oils, is the most common cause of unseasonable or repeated moultings.

Two trios of Rhode Island Reds and one of Rhode Island Whites, all from winners at the Panama-Pacific International Exposition, were recently shipped to New Zealand.

A convention of poultry keepers of South Africa recently met at Port Elizabeth. Great interest was manifested over the rapid development of the industry in that part of the world.

Prevent toe picking by giving chicks salt water. Mix one teaspoonful of salt in one quart of water. Give chicks one drink of this each morning, then substitute fresh water for the rest of the day.

A swallow of loose, moist earth for the hens will increase egg production in the dry summer months.

A trap nest has been recently invented that releases the hen after she has laid an egg. The egg in rolling into a wire basket opens a door to a yard reserved only for the hens that have laid an egg.

"We have a lot of milk now for the chickens and I believe it is valuable now that feed is so high. Where I sell my chickens, they want milk-fed ones, and I get two to three cents above market price for them when the young ones are fattened," writes Noble H. Brown of Lodi.

At a large enthusiastic meeting of farmers at Imperial recently, Dr. Elwood Mead endorsed the proposed \$2,500,000 bond issue for irrigation improvements in Imperial Valley.

Poultry Breeders' Directory.

Rates in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

EXTRA QUALITY White Leghorn chicks, 12c until March 1st, then 10c. Carefully line bred from MacFarlane, Young, Martin, and Cyphers strains of foundation stock. Eggs, \$1.50 per 15, \$2.50 per 30, \$5.00 per 100, \$50.00 per 1000. Acres of free range connected with our breeding pens, 20,000 feet under roof. Only Jubilee incubators used; disinfected every hatch. Don't save 2c per chick in buying, and lose a dollar per pullet in raising; get the Best and Succeed. Newton Poultry Farm, Dept. 1, Los Gatos, Cal. Catalogue free.

THE J. K. BIGELOW POULTRY RANCH and Hatchery—200 acres devoted to superb vigorous Hogenized White Leghorns. Bigelow chicks are incomparably superior to the product of ordinary commercial hatcheries. Prices same as former seasons—10 cents each till April 1, 9 cents during April and May, and 8 cents thereafter. Shipped on approval; examination before paying. The Bigelow Poultry Ranch, Sonoma, Cal.

HIGHEST CLASS—Winners at State Fair, Oakland, Modesto, Reno. White Rocks and White Leghorns. Incubator chicks. Rocks, \$25.00 per 100; Leghorns, 10.00 per 100; Hatching Eggs, \$2.00; \$5.00, and \$10.00 per 15, according to quality. Rock Eggs, \$10.00 per 100; Leghorn Eggs, \$6.00 per 100, from range flocks. The best of stock and a fair deal. Mahajo Farm, P. O. Box 597, Sacramento, Cal.

BARRIED PLYMOUTH ROCKS — COCKERELS—Cockerels—Cockerels—Yes, we have them; also Hens and Pullets—all bred from our Champion Winners at California's leading shows. Also hatching eggs. If it's Barred Rocks you want, get in touch with me right away. Have bred them exclusively for nineteen years. Send for Catalog, Chas. H. Volden, Box 396, Los Gatos, Calif.

ROOFDEN RANCH CHICKS are good chicks, well hatched from first-class utility breeding stock—money-making egg producers. The prices are right—7c to 14c, depending on breed, month, quantity (dozen to thousands). White, Buff, Brown Leghorns; Black Minorcas, Rhode Island Reds, Barred Rocks for dollars and sense. Send card for circular. Roofden Poultry Ranch and Hatchery, Campbell, Cal.

"FINEST HATCHERY IN THE WORLD"—Baby Chicks, White Leghorns, and Rhode Island Reds, settings, 100's, 1000's, hatched right in our \$60,000.00 brick and concrete hatchery from our quality heavy layers. Reasonable prices. Stock, Hatching Eggs. Pebbleside Poultry Farm and Hatchery, Sunnyvale, California.

BABY CHICKS—From large, healthy, vigorous, heavy laying thoroughbred Single-Comb White Leghorns \$10 per 100; \$2 per 100 when order is booked, and balance 5 days before delivery. I pay the express to your nearest express office. H. A. Schlotthauer, Exeter, Cal.

THOROUGHbred WHITE LEGHORN and Rhode Island Red Chicks. Delivery up to June first. Our stock are strong and vigorous, are practically non-setters and heavy winter egg producers. Brooke Farm, Rancho Del Paso, Office 807 J St., Sacramento.

WHITE LEGHORN AND BROWN LEGHORN day-old chicks from healthy, vigorous breeders. Per 100, March \$10.00; April and May, \$9.00. Reduction in larger lots. "Chicks well hatched are half raised." San Jose Hatchery, 373 Mendocino Road, San Jose, Cal.

BABY CHICKS—HATCHINGS EGGS—White, Buff, Brown Leghorns, R. I. Reds, Barred Rocks. Sturdy chicks from well-mated fowls. Prompt, efficient service. Write for circular. Campbell Poultry Ranch, Campbell, Cal.

200-250 EGG PRIZE LEGHORNS, Rocks, Reds, Wyandottes, Anconas. Eggs, Chicks surprisingly reasonable considering quality. \$3-\$10 profit, every hen. Hundreds satisfied customers. M. Beeson, Pasadena, Calif.

BABY CHICKS—We hatch from our own stock of 10,000 vigorous, healthy S. C. White Leghorn hens of heavy laying strain. Write for price list and further particulars. George Brothers, Petaluma, California.

HATCHING EGGS—90 per cent fertility. From Hogenized S. C. White Leghorns only. Re-mated in February. Prices reduced for March and April. Write at once. Pine Tree Poultry Farm, Los Gatos.

BABY CHICKS AND HATCHING EGGS—S. C. Rhode Island Reds. Vigorous utility stock. Chicks that live and hustle. Mrs. J. W. Morris, Route 17, Box 34B, Mountain View, Cal. Phone 711.

HOGANIZED AND TESTED—220-egg type White Orpingtons and Buttercups. Hatching eggs, chicks and cockerels for sale. Reasonable prices. For particulars, write M. Woodhams, San Mateo, Cal.

SELECTED S. C. White Leghorn and Barred Rock eggs for hatching from hens typed to lay 200 to 260 eggs per year each. Baby chicks in season. Write for prices. Jay Maxwell, Madera, Cal.

BLACK LEGHORNS AND SILVER CAMPINES—Stock direct from leading Eastern breeders, a few hatching eggs reasonable. A. C. Hayes, Blaney Ave., Cupertino, Cal.

HICKS JUBILEE HATCHERY, Petaluma, Cal.—White Leghorn and Black Minorca chicks and hatching eggs. Circular "How to Raise and Feed Chicks" Free.

GIVE the Black Minorcas a trial. Guaranteed first class. Eggs, \$6 per hundred, \$1.25 per setting. Chicks, \$12 per hundred. Ezra Mosher, Union Station, Napa.

S. C. RHODE ISLAND REDS—220-egg record in 12 months. Hatching eggs, Chicks, Stock. Also Rose Comb Reds. Wm. Larm, 3916 39th Ave., Fruitvale, Cal.

BABY CHICKS—From select free-range White Leghorn stock. Place orders early. Prices on application. Western Hatchery, Petaluma, Cal. W. S. Waldorf, Prop.

EARL E. SANDERS, Modesto, Cal., breeder of M. B. Turkeys, S. C. White Minorcas, S. C. Black Minorcas and S. C. Barred Plymouth Rocks. Nothing but the best.

S. C. RHODE ISLAND REDS—Pullets and Cockerels. One Black Orpington Cock. Eggs from R. I. Reds and Silver Campines. Mrs. R. S. Snaikling, Woodland, Cal.

EGGS FOR HATCHING—Blue Orpingtons, Partridge Rocks, Rose Comb Rhode Island Reds, and Silver-Laced Wyandottes. Tribble Nurseries, Elk Grove, Cal.

MODEL POULTRY FARM—White Leghorn specialists. Our thirteenth year. Baby Chicks and Hatching Eggs for sale. W. C. Smith, Prop. Corning, Cal.

"EASTMAN'S BRED-TO-LAY" Barred Plymouth Rocks—Chicks and Eggs. W. Haganize and trappist. Fairmead Poultry Farm, Fairmead, Cal.

ANCONAS—Prize winners everywhere exhibited. 35 first prizes in last two years. Catalogue free. T. E. Silva, 3820 Grove St., Oakland, Cal.

INCUBATORS—For Essex Model Incubators at factory prices, write Geo. H. Croley Co., Inc., Poultry Supplies, 631-637 Brannan St., San Francisco.

BABY CHICKS (White Leghorns)—shipped on approval before remitting. No weak ones charged for. Schellville Hatchery, R. F. D., Sonoma, Cal.

BARRIED ROCKS—Grand lot of high-class breeding males and pullets for sale. Satisfaction guaranteed. G. E. Tobin, St. Helena, Cal.

WHITE, WYANDOTTES—Blue-ribbon winners. Eggs \$2 to \$5. Chicks, pullets, cockerels. R. W. Stawetski, Route 2, San Jose, Cal.

RHODE ISLAND RED and White Leghorn Eggs and Chicks. Splendid layers, large eggs. Send for circular. Rosedale Ranch, Hayward, Cal.

BLACK MINORCAS—Largest egg; whitest flesh. Eggs, \$1.00 per 15; \$5.50 per 100. Edward A. Hall, R. F. D. 1, Watsonville, Cal.

BUFF ORPINGTONS—Barred Rocks, Ring-necked strain. Eggs \$2; \$3. Turner Duckeggs, \$1.50. Glendale, Fleming Ave., San Jose, Cal.

HATCHED CHICKS from Barred Rocks, R. I. Reds, White Leghorns. Good layers. Send for circular. G. L. Hawley, Modesto, Cal.

THOROUGHbred Plymouth Rock Pullets. Good layers. April hatch. Mrs. V. E. Haynes, Route A, Box 72, Madera, Cal.

CHICKENS, DUCKS, GESE—Guinea Fowl, Pea Fowl, Pigeons. Wm. A. Brown, 645 W. Park St., Stockton, Cal.

THOROUGHbred WHITE PLYMOUTH ROCK—Eggs, \$1.25 per setting, prepaid. H. G. Nickel, Dinuba, Cal.

LASHER'S HATCHERY, PETALUMA—Write for booklet, "The Day-Old Chick Business" and price list.

WHITE PLYMOUTH ROCKS—Hatching eggs from splendid layers. Mrs. J. B. Tupper, Route A, Ceres, Cal.

RHODE ISLAND REDS—Eggs, \$1.00 for 15 P. M. Cox, Sonoma, Cal.

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Mrs. Best's Letter.

SPRING STYLES.

Dear Friends: The shop windows are now gay with the bright colors of the new spring togs. Pure color as usual in the early spring, is seen everywhere. The sports' influence of last summer continues this year, only instead of the rose and blue so predominant then, there are canary yellows, Chinese blues, and various reds.

Separate skirts in wool plaids are shown regularly plaited. Heavy silks and washable satins, also in vivid colors or stripes on a light background, gathered with an inch heading and decorated with round patch pockets.

New Sweaters.

Silk sweaters are shown in the same styles—sailor collars and sash, but divided at the waist line in color, half being plain and the other half of a contrasting color in plaid. Wool sweaters in middy styles that slip over the head, called "slip-ons," are made of Shetland wool in loose weaves in soft colors with contrasting sailor collar and close-fitting cuffs. Some of these lace up at the neck like a middy blouse.

These loosely woven sweaters are much in vogue now, and many people are making their own. The size of the knitting needle determines the appearance, of course, and the large needles are used for the more fashionable weaves. About a pound of wool makes a medium-sized sweater.—ninety stitches across the back and fifty for each side of the front. Many of the home-made sweaters have kimona sleeves knitted right on to the body. In making a sweater knit across the back evenly until the desired length is reached, measuring from under the arms. Most of the garments cover the hips well. Then knit straight across 65 additional stitches on both sides of the back for the length of the sleeve. Continue thusly until the desired width of the sleeve is reached. The fronts are then knitted separately, shaping them for the neck, and then join onto the back. The neck should be one-third of the distance across the shoulder for a loosely fitting sweater. Shetland wool for the light jersey and Germantown for the heavier is used. And for the collars and cuffs the Angora wool can be bought now, which puts the new finishing touch to this spring's sweaters. Buttons may be knitted to cover molds, or fancy bone buttons may be used.

The new garment, the coat dress, is proving very popular. It is shown in jerseys, sport silks, and serge. The dress is conservative in style and designed so that with a fur it looks perfectly appropriate for street wear. As you know, in San Francisco women always wear suits or coats on the street, and so this dress, assimilating a coat, fits in well. One shop showed such dresses of blue serge, some with fancy vests of bright blue, embroidered in gold; others perfectly plain, even devoid of a white collar. Another shop displayed a wine red jersey cloth dress, which was embroidered in a dainty pattern with bright blue and purple—this was quite a color combination, but it was well planned, and was not garish. The same window held a canary-colored silk, narrowly striped

THE HOME CIRCLE

with blue and black fashioned into a sport suit.

Spring Parasols.

Parasols are very gay and coquetish. They are flat and small, and made of Roman striped ribbon or of Kaiki Kool silk in the new designs. They seem very suggestive of warm days and of course are advance styles.

Dress Coats.

One shop displayed a chic dress coat of bright blue taffeta. It was three-quarters length and very full, being plaited at the neck. The sleeves were large and like big puffs and made of blue taffeta embroidered in silver, while the rest of the coat was plain blue. There was a plaited ruff around the collar that stood up straight, and added dignity, which was then demurely removed by the ruffles at the wrist. It was certainly a most novel coat. It had style and did not sacrifice good taste. A coat similar in style was made of rose and blue satin, the rose being the dominant color, but the blue managed to appear on the soft collar and peeping out as a careless gesture showed the lining. All the evening wraps displayed with the light evening dresses seem very loose and full, of beautiful stuffs, and of bright colorings.

Beaded Bags.

The beaded bags seem just as popular as ever. With spring they have become brighter and more elaborate. Fancy shapes are shown, and the silk back ground is hardly seen in the heavy beading.

Pretty Blouses.

New blouses are of the same general style—soft collar, ruffles down the front, low neck and long sleeved. Crepe de chine and Georgette embroidered, or hemstitched, or picoté in flesh or white compose the pretty conservative blouses. Bright striped tub silks and striped Georgette, too, is shown for sport wear.

Rosabella Best.

RICE AND HOMINY RECIPES.

Why not use rice or hominy in the place of potatoes during the time of shortage, or until the new crop is harvested? Both rice and hominy are cheap and nourishing, and either will take the place of potatoes. Here are a few recipes that are good. Try them.

Hominy, Southern Style.—Mix one cup boiling water with one teaspoon salt and add gradually, while stirring constantly, three-fourths cup fine hominy. Bring to boiling point and let boil two minutes. Then cook in double boiler until water is absorbed. Add one cup milk, stirring thoroughly, and cook one hour. Remove from range and add one-fourth cup butter, one tablespoon sugar, one egg slightly beaten, and one cup

milk. Turn into a buttered dish and bake in a slow oven one hour.

Fried Hominy.—Take prepared hominy and fry in bacon fat; serve piping hot with syrup. Both appetizing and nourishing.

Hominy and Horseradish Croquettes.—Steam one-fourth cup hominy with one-half cup boiling water until water is absorbed; then add one-half teaspoon salt, three-fourths cup scalded milk, and steam until tender. Add two tablespoons butter and three and one-half teaspoons grated horseradish root. Cool, shape, dip in crumbs, egg and crumbs, fry in deep fat and drain on brown paper.

Strawberry Sauce.—Work one-half cup butter until creamy, using a wooden spoon; then add gradually while beating constantly, one and one-half cups powdered sugar. Wash and hull one quart box strawberries, cut in halves, and let stand in a warm place fifteen minutes. Add to butter and sugar mixture, and beat until well blended.

Parched Rice, Tomato Sauce.—Cook three-fourths cup rice in boiling salted water until kernels are soft. Drain, pour over one quart hot water and let stand until cool and dry. Put two tablespoons butter in hot iron frying pan and when melted add rice, and cook until rice is slightly browned, stirring lightly with a fork. Put in a hot serving-dish, pour over one cup hot tomato sauce and sprinkle with one-half cup grated cheese, lifting rice with fork that sauce and cheese may coat each kernel.

Compote of Rice with Stewed Pears.—Steam-cook one-half cup rice, using one-half milk and one-half water. When kernels are soft add three tablespoons sugar, and the yolks of two eggs, slightly beaten. Mound on a flat dish in conical shape and place on rice halves of stewed pears. Sprinkle all with one-fourth cup finely chopped Canton ginger.

Rice Chinese or Southern Style.—So many people like rice the way the Chinese and Southern cooks prepare it, but do not know how it is done. Here is a very simple formula—in fact, it is so simple that it can hardly be called a recipe. The whole thing depends upon one item, viz., plenty of boiling water; so that the rice will boil and "gallop" each grain by itself. This prevents it from getting mushy. You cannot use too much water—at least two quarts to a cup of rice. When the rice is cooked, but not too soft, drain through a colander and wash off with running cold water. This separates the grains. Now pack into a deep bowl and stand in a vessel partly full of hot water and dry out the rice by letting the water boil around the bowl. Of course the rice should be washed before cook, as well as after.

Floral Department.

[By Geo. N. Tyler.]

TUBEROUS BEGONIAS.

Tuberous-rooted begonias have been greatly improved the last few years, but amateurs do not have very much success with them, owing to lack of knowledge in their cultivation. These notes will help them to grow them as they should be grown.

Your first start should be made in late February or early March, from tubers obtained in a dormant condition. These place in pots corresponding to the sizes of the tubers—4, 5, or 6-inch pots will answer. Water sparingly after potting until they are well started, when they should not be allowed to become dry.

As soon as well started, and before they commence to form buds, they should be repotted, placing the strongest in eight-inch pots, using six and seven-inch pots for the others, and water again sparingly for a week or ten days, when they will have commenced to root.

You will find that they require a great deal of water as they grow and fill the pots with roots. In that stage you should give them once a week (when in a moist condition) a watering with weak liquid manure, or use nitrate of soda at the rate of one-eighth of an ounce to one gallon of water.

They will do well in any light soil. The compost I prefer is formed of three parts leaf-mould, one part loam, and one of well-decomposed cow manure, with an additional of enough sharp sand to show well through the mixture.

In potting drain your pots well. There is nothing better for the bottom than a few pieces of broken pots, with some moss over them—enough to prevent the soil from washing down.

At the first potting cover tubers with about one inch of soil, but when you repot, perform that operation with care and set slightly deeper.

Do not water tuberous begonias on the foliage; water only the soil they are growing in. It is advisable to remove the seed-bearing flowers. By doing so you will prolong the season of bloom and improve the quality of the flowers.

By the first of October they will be past their best blooming. You should then begin to dry them off. The best location for that purpose is a sheltered shady place out of doors. Give very little water, and when the growth dies off remove them in their pots to a cool basement or cellar away from fire or sun heat.

They should remain there without any watering until the end of the following February, when they should be removed to their flowering quarters, lightly watered, and as soon as growth starts repotted. In doing so remove all old soil. They dislike fire heat, and they need a cool house, slightly shaded and well ventilated, night and day. By well ventilated is meant enough fresh air to be comfortable for you to remain in there with no drafts; by right temperature, 65 to 70 degrees is correct; over that they will not do well. Should you have no greenhouse, they will grow and bloom to perfection in a window facing south.



Better than grandeur, better than gold,
Than rank and duties a thousandfold,
Is healthy body and mind at ease,
And simple pleasures that always please.
A heart that can feel for another's woe,
With sympathies large enough to enfold
All men as brothers, is better than gold.

AN ELEVATING CHOICE.

When I'm a grown-up man, Ill do
The things I've always wanted to.
I'll hunt rhinoceros and deer,
And go barefooted all the year.

I'll live in tents and swim all day,
And give my dress-up things away.
I'll never, never do the chores!
I'll always eat my meals outdoors,

And call for one whole choc'late cake,
The very minute that I wake.
But still, 'twould be such lots of joy
To be an elevator boy;

Fly up and down from floor to floor,
And oh, what fun to slam the door!
I guess that's what I'll do some day—
When I'm a man, grown-up and gray.

—Daisy D. Stephenson, in the
Churchman.

A TEA-PARTY TALE.

Marjorie was happy, there was no mistaking it. She skipped merrily down the street, and burst with a cheerful clatter into the nearest house:

"I'm going to have a tea-party all my own," she cried breathlessly to the two little next-door girls. "Aunt Lou said I might, and I want you both to come. She's going away this afternoon, Aunt Lou is, and she'll let"—Marjorie reserved this best until the last—"she'll let me use her dishes. They're the same ones Aunt Lou used to give her tea-parties with when she was a little girl."

"Oh!" cried Lois and Geraldine together, we'll go to your party for certain sure; just see if we won't."

Lois and Geraldine had been Marjorie's friends ever since she could remember. It seemed that they had played together always, for when they first learned to walk their wobbly, uncertain steps had led them toward each other. Geraldine was a little taller and bigger than the other two, but Lois and Marjorie were almost like sisters.

Aunt Lou didn't altogether understand little girls and their ways. She thought that if small people had plenty of bread and butter, and good, clean homes and faces, they ought to be perfectly happy.

Now this wonderful thing had happened; Aunt Lou had suggested that Marjorie have a tea-party, and had brought out delicious things to eat from a middle shelf, and her very own china tea-set from the tip-top shelf of all.

It seemed that Aunt Lou had been a little girl herself once upon a time, for there was the tea-set—that showed it plainly enough.

"I'll be ever so careful," Marjorie said, as she lifted them down and placed the precious pieces side by side.

Aunt Lou smiled and said, "I'm sure you will, Marjorie."

Aunt Lou had grown wonderfully kind and good of late. She even brought out the prettiest cloth for Marjorie's little table—a lacy cloth all starchy white that hung down over the edges.

It was a very happy trio that sat down to the small table spread for three. Marjorie had drawn up low chairs to sit on, chairs that weren't so high that their feet dangled uncomfortably a long way from the floor. These were the right kind.

They had cakes and jelly to eat, sparkling red jelly that shivered and shook. Marjorie filled up the cups, not with real tea, of course, but with

something better.

"You've got to hold the lid on," she explained as she poured out a cupful, "because it rattles round and falls out if you don't."

"Won't you have some more sugar?" Marjorie gave the bowl a little push toward Lois. A gentle shove it was, but the edge of the table was near, and the other things took up a lot of room; and so, though Lois's hand shot out to save it, she was a few seconds too late, and the plump bowl reeled and went crashing to the floor, where it lay in two broken pieces almost at Marjorie's feet!

"Oh, Marjorie!" cried Lois, with a frightened gasp.

In an instant the three chairs were forsaken, and Marjorie was bending over the jagged pieces of what had been a brave white sugar-bowl only a minute before. Her lips quivered pitifully, and the other two tried their best to comfort her. But the deed was done; it couldn't be helped now, and a sweet, sugary trail led over Aunt Lou's good carpet.

After the next-door girls had gone, Marjorie's heart grew heavy. What would Aunt Lou think? When she had been so kind about lending her dishes, how could Marjorie ever, ever tell her what had happened?

She picked up the pieces and placed them together. They fitted exactly, and from a little distance one would never know but that the sugar-bowl was perfectly good and whole.

A mean suggestion thrust itself into Marjorie's head. Suppose she put it back on the shelf just as it was. Aunt Lou might never know what had happened, not for some time, anyway.

But Marjorie's better nature won the day. She would do what was right—she would tell Aunt Lou herself that very night.

"Aunt Lou," she began bravely, "I'm sorry—I didn't mean to—but I"—

"Well?" Aunt Lou eyed her sharply. "I broke your white sugar-bowl!" Marjorie expected she hardly knew what after this confession, but nothing could have surprised her more than what Aunt Lou really did.

"Oh, is that all!" she cried in a relieved voice. "Bring it here, will you?"

"I broke it myself in the same place a long time ago," she said. "See where I had it mended so well that you could hardly find the place. We'll have it mended again, and I'll give them all to you to keep."

"O Aunt Lou!" cried Marjorie,

clinging to her. "I'll never be afraid to tell the truth again, never."

Aunt Lou held her tight for a minute, then kissed her, and said, "That's right, dear. Sometimes it takes courage, but it's always best."
—Gertrude Bowen, in Playmate.

USE RICE AS A VEGETABLE.

The high price and scarcity of potatoes has caused many restaurants in the cities to use rice as a vegetable, and the patrons seem to like it as well for a change as potatoes. Rice as served with meat orders is simply boiled and steamed and eaten with gravy or butter. While unpolished rice is said to be the best for food, yet the white, flaky, polished cereal looks better and people seem to prefer it.

MACARONI AND WELSH RAREBIT

Half pound macaroni, $\frac{1}{4}$ pound cheese, $\frac{1}{2}$ cup butter, 1 teaspoon salt, $\frac{1}{2}$ teaspoon paprika. Cook macaroni in rapidly boiling salted water (1 teaspoon salt to 1 quart water) until tender, grate cheese, melt butter. Put macaroni, cheese and butter in layers in baking dish, sprinkle with salt and paprika. There should be two layers. Place in oven ten minutes. Garnish of Welch rarebit: Melt $\frac{1}{4}$ pound cheese, add



Burning off the "Slash." The "slash" (bark, undergrowth, tops, etc.) burns off, but the logs simply char slightly. Only Redwood can be logged this way.

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$\frac{1}{2}$ teaspoon salt and $\frac{1}{4}$ teaspoon paprika and very gradually yolk of 1 egg, beaten and diluted with $\frac{1}{4}$ cup cream or rich milk, stir constantly until mixture is smooth. Spread upon diamond-shaped pieces of toasted bread, dispose these on macaroni and serve immediately.

SMALL ECONOMIES FOR THE HOUSEWIFE.

We have formed a habit of depending too much upon canned goods, which are comparatively expensive because of being composed in a large measure of water. In the purchasing of fruits for home use, the housewife can make some economies by purchasing dried fruits of various kinds.

Many housewives this year did not can much fruit for themselves. The price of fruit was high and the price of sugar was unusually high. Unless the home drying of fruit was undertaken the problem of supplying fruit will be an acute one.

Valuable friends to the economical and wise housekeeper are raisins, dates, figs, prunes and all dried fruits. Dried peaches, apricots, apples and pears are inexpensive from the food-value standpoint.

It is interesting to note also that dried fruits can be used in combination with cereals and in puddings in ways that are much more satisfactory than when using fresh or canned fruits.

Prunes and figs especially have a decided laxative effect. If you find that your dates and figs are too hard they may be softened and thus made more palatable by pouring boiling water over them.

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Good Health.

[By H. E. Pastor, M. D.]

Poisonous Cosmetics.

Some few issues back we were rash enough to say a few uncomplimentary words on face washes, bleaches and other "beautifying" agents guaranteed to transform the face of a gargoyle into that of a smiling seraph. We don't know that these preachments do much good, and more than half suspect that they are a waste of words. Still, it is some satisfaction to take an occasional whack at an evil even if you miss the mark. Then, too, our country cousins may not be so sophisticated as our city sisters, and need not this admonition—though it is whispered that they are rapidly "getting there." We find comfort in reading what another reckless writer has to say on the same subject, in the Journal of the American Medical Association. He lets loose thus wise: "Many cases of general nervous debility, some of insanity, and perhaps some of paralysis are caused by the use of cosmetics containing lead. Many of the vague and little understood abdominal pains of women are due to this cause, and abdominal sections have been done because of lead colic." "In reporting two additional cases of lead neuritis from cosmetics, he expresses the belief that among the thousands of girls who use preparations containing lead there must be many cases in which the untoward effects are not readily recognized as being due to lead poisoning and which are consequently overlooked. The relative infrequency with which lead poisoning is diagnosed in women leads one to believe that it must be often overlooked."

All of which might suggest that that portion of our femininity ambitious for something which unkind nature denied them, had better confine themselves to the use of such

simple cosmetics as creams, etc., of known composition.

Infant Feeding.

Last year in Missouri alone more than 7,000 babies died. Three-fourths of these children died before they were three months old. At least half of these babies could have been saved by proper feeding, in the opinion of Miss Louise Stanley of the University of Missouri College of Agriculture. It is very important that the child should have during these first months the best food, and nothing else is as good as that which nature has provided—mother's milk.

Mother's milk is best for the baby for the following reasons:

1. It is adapted to the needs of the child in composition and amount.
2. It is provided at the proper temperature.
3. It is more easily digested by the baby.
4. It does not sour.
5. It contains no bacteria and dirt.
6. It strengthens the baby against disease.

If mothers realized how much greater is the chance for life of the naturally fed child, they would make a greater effort to nourish their children. There are few mothers who can not with consistent effort nurse their babies. The mother must have abundant and wholesome food, plenty of liquids in the diet, plenty of rest, exercise and fresh air. Regular nursing stimulates the flow of milk.

Mineral Oil in Constipation.

This writer was asked last week if the purified mineral oil, of which "Russian Oil" is a type, has any virtue for the relief of constipation, and if it has incidentally any harmful effects. We believe it is both effective and harmless. Our experience has been confined largely to its use among children. We were first tempted to recommend it in a case where a child about four years old positively could not be induced to take castor oil. The child took the mineral substitute without objection, and in time, the mother said, came to rather like it. In other cases uniformly good results have been obtained. This oil acts as a mechanical lubricant of the large (or lower) intestine, and in this way helps the peristaltic action of the bowel. We cannot conceive of any harm arising from its use if the oil is thoroughly purified and free from foreign matters. For certain reasons we think it inadvisable to take it at meal time, or within an hour or two of the meal, either before or after. Food oils, like olive oil, are helpful in a similar manner, but are less effective, as they are absorbed, while the mineral oil passes through the body unchanged, and is practically inert.

Patent Medicines.

Better leave them alone. They are worse than a waste of money—they are a menace to health. There are perhaps half a dozen proprietary remedies or less, out of the thousands with which the market is flooded, that have some curative virtue, but even in these exceptional cases the remedy is likely to be abused by those given to too much self-doctoring. There is no manner of question that vastly more harm than good is done through the indiscriminate and excessive dosing fostered by patent medicine venders.



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Try to live hygienically. If something goes amiss that home treatment or the use of some simple home remedy (of known composition) will not set right, better consult your physician.

IN THE KITCHEN.

For most housewives, the kitchen is headquarters.

The whole household and adjoining premises work to better advantage if the wheels of kitchen machinery operate smoothly and turn out good things.

The two titles "housekeeper and homemaker" are usually vested in one and the same person, but if a woman finds herself unequal to both, it is far better to choose the latter.



"Think of it!
The price hasn't
gone up for
these fine
Clothes!"

Yes, think of it! It will pay you to look into this, see the fine clothes, try them on, and then be astonished that such fine style and sturdy wearing qualities can still be bought for \$17! A great demand centered on this suit of one nationally-known price has enabled the makers to effect great economies and keep the price \$17, as before. Get your suit today!

You know the price before you go into the store—\$17 always, everywhere. Watch your local newspapers for advertisements of the nearest Styleplus Store. Look for Styleplus in the Store Window. Look for the Styleplus Label in the coat collar. If there should not be a Styleplus Store in your town, ask your favorite dealer to order a Styleplus suit or overcoat for you.

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Styleplus \$17
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"The same price the nation over."
(In Cuba \$23)

SAN FRANCISCO.

San Francisco, March 7, 1917.

WHEAT.

Sonora wheat was the only variety which was offered here that failed to advance during the past week, this offering running largely to second grade stock and proving hard to sell. The rumor that more Australian stock would be brought here caused a slight flurry early in the week, but this proved to be baseless and prices came back to their old level. Northern Red is in especially good demand and is being held for \$3.20 per cental in most instances. Business in futures was without any great feature.

Sonora wheat \$2.75@2.80
Northern club Non-offered
Calif. Club, cti. 2.70@2.75
Northern Bluestem 3.00@3.10
Northern Red 3.90@3.20

BARLEY.

Easier prices on fancy seed barley was the only change occurring on this offering last week, with \$2.60 the general top here. The situation on futures still seems uncertain.

Seed, cti. \$2.50@2.60
Shipping, cti. 2.35@2.40
Brewing, cti. Nominal
Choice feed, cti. 2.25@2.30

OATS.

Trading in oats was probably quieter than for any of the other grain offerings during the past week. There was no export demand and local trading was very light indeed.

Red feed \$1.85@2.00
White 2.00@2.05
Red seed (Texas) 2.90@3.00

CORN.

Prices on corn were generally unchanged although the offering here of large quantities of dirty Egyptian brought a lower price range for this grade. Really fancy lots of this variety continued to command top prices. [First-hand prices on strictly first-class grain, San Francisco.]

Eastern Yellow, cti., bulk \$2.15@2.22 1/2
California, sacked 2.20@2.22 1/2
Milo Maize 2.00@2.20
Egyptian 2.25@2.35

BEANS.

While advances in the bean list were not so general this past week as during the preceding period, there were enough of these to show the general upward tendency of the market. Export trade and buying for the East has been of about equal volume and local buying has also been a considerable factor. Sales for a pool of small grocers was reported, their purchases being made in anticipation of still further advances here.

[Recleaned f. o. b. San Francisco.]
Bayos, per cti. \$2.25@2.50
Blackeyes 6.50@6.85
Cranberry beans 9.50@10.00
Horse beans 5.00@6.00
Small Whites (south) 11.75@12.00
Large Whites 11.50@11.75
Pinks 8.50@8.75
Limas (south, recleaned) 12.00@12.25
Red Kidney 11.75@12.00
Mexican Reds 8.00@8.25
Tepary beans 8.50@8.75
Garbanzas 4.25@4.50

HAY.

A trio of causes have figured to bring a sharp decline in the receipts of hay at this market for the past week. This week's total was 764 tons, as compared with 1367 tons last week and 1817 tons for the preceding week. The main factor is the low stocks in the country, those having any hay on hand preferring to hold it for feeding to their own stock until the green feed is sufficiently advanced. The rains also figured in this state of affairs. Still another factor in the local shortage is the lack of hay cars. The new crop is reported to be progressing satisfactorily and no serious damage has been done by the few frosty mornings lately. All grades of hay were advanced here, the general gain being \$1 per ton. Export trade for the week was about average. Alfalfa hay and straw were both quite scarce and in very good demand and advances on these two lines would not be surprising.

[Price per ton, carlots, San Francisco.]

Wheat, No. 1 \$21.00@22.50
No. 2 19.00@21.00
Tame oats 19.00@23.00
Wild oats 18.00@21.00
Barley 18.00@21.00
Alfalfa 17.00@21.00
Stock hay 17.00@18.00
Straw, per bale90@1.15

FEEDSTUFFS.

Slack trading, light receipts and the rains combined to produce a quiet week in the feedstuffs market and prices on these offerings were without any change. It is reported on the street here that there will shortly be another advance in coconut meal.

[Per ton, San Francisco.]

Beet Pulp, per ton \$30.00@31.00
Alfalfa meal, per ton 23.00@24.00
Bran, per ton 30.00@31.00
Oil Cake 42.50@45.00
Coconut cake or meal 31.00@32.00
Cracked corn 48.50@49.50
Middlings 39.50@46.00
Rolled Barley 45.00@47.00
Tankage 47.00@48.00
Rolled oats 44.00@45.00
Rice middlings 31.00@33.00

POTATOES, ONIONS, ETC.

There has been a decidedly easier feeling in the local potato market for the past week but whether this easiness is to continue is a matter of considerable interest. The receipts of Washington potatoes here did a great deal to bring about the break in prices but it is doubtful whether the Northwest will be able to ship much more stock this way. On next Friday the Canadian government is to place an embargo

THE MARKET REPORTS

Figures Given Are Independent and Reliable.
Prices Quoted as Paid to Producers.

on the shipment of potatoes to the United States and this may bring a halt in the sending of Washington potatoes here. The continued offering of Japanese onions, and a slower retail call have been responsible for easier prices and stocks that were firmly held at \$13.00 per cental two weeks ago are now being offered freely at \$9.00. General vegetable prices have met with some changes, advances on peas and delta celery being the most notable of these. New rhubarb is being offered here now and commanding as high as 10 cents per pound.

Peas, per lb. 4 @11 c
Hubbard squash, per lb. 2 1/2 @3 1/2 c
Lettuce, crate \$1.00@1.50
Celery, Delta, crate 3.50@4.50
do, Southern, crate 2.50@4.90
Tomatoes, crate Not enough to quote
Rhubarb, box 1.50@1.75
do, new, per lb. 8 @10 c
Potatoes, cti., Delta 5.50@3.75
Salinas Cleaned up
Oregon 3.25@3.75
Sweets, per lb. 5 c
Onions 6.00@9.00
Garlic, lb. 3@5 c

POULTRY.

Weaker Eastern markets and the resumption of shipments from that section to this market have figured in an easier market tone, although this as yet has not taken the form of a big price decline. Buyers are inclined to be offish and only very light local receipts have served to hold this market steady.

Turkeys, live, lb. 22@24 c
do, dressed, large, lb. 26@28 c
Broilers, 18 lbs. to doz and less 32@35 c
do, over 18 lbs. to doz. 29@31 c
Fryers 27@30 c
Hens, extra, per lb., colored 26 c
Small leghorn 23@25 c
Smooth Young Roosters, per lb. (3 lbs. and over) 27@28 c
Old Roosters, per lb. 15@17 c
Geese, per lb. 18@20 c
Squabs, per lb. 40@43 c
Ducks 24 c
Old 21@22 c
Belgian Hares (live) 13@15 c

BUTTER.

Butter prices have broken rather sharply this past week, the current receipts being too heavy for the local

Special Livestock Market Report.

San Francisco, Mar. 7, 1917.

The livestock situation in U. S. and California is peculiar. President A. T. Wilson of the Panhandle and Southwestern Stockmen's Association is quoted as having told the convention of that body on Mar. 5, 1917, that while there are 20,000,000 more people in U. S. than seven years ago, there are about 18,000,000 less cattle. Other figures indicate that the increased population is only 10,900,000; and the U. S. Dept. Agr. says that there were over a million more cattle in U. S. Jan. 1, 1917, than Jan. 1, 1916; although the production of meat and meat products in 1916 was 22,378,000,000 pounds or 3,000,000 pounds greater than in 1914. A local packer did 75 per cent greater business in 1916 than in 1915. Yet the price of steers for at least the past three months has been a good bit higher than for the winter of 1915-16 and the winter previous. In California probably half of the mature cattle are in packers' feed lots or under contract; while the remainder are being held by growers for higher prices. It is admitted by packers that the higher price is likely to come before the situation is relieved by grass cattle.

Steers, No. 1 9 1/2 @ 9 1/2 c
No. 2 8 1/2 @ 8 1/2 c
Cows and Heifers 7 1/2 @ 8 c
No. 2 7 @ 7 1/2 c
Bulls and Stags 6 @ 7 c
Calves, light 9 @ 9 1/2 c
Medium 8 1/2 @ 9 c
Heavy 7 @ 8 c
HOG receipts are small and all from California, while the price soars as told elsewhere. The quality seems not so good as months ago.

[Rough docked 20 pounds, piggy sows, 40 pounds, stags 30 pounds.]
100 to 150 lbs. 12 c
150 to 300 lbs. 12 1/2 @ 13 c
300 to 375 lbs. 12 1/2 @ 12 1/2 c

SHEEP are unavailable. Very few have come into San Francisco for a week except yearling lambs from packers' feed lots. Prices quoted are the same as last week, being merely nominal for lack of movement of stock.
Prime Wethers 10 1/2 @ 11 c
Ewes 8 1/2 @ 9 1/2 c
Lambs 12 1/2 @ 13 1/2 c

WOOL: No change is quoted in wool, as very little is being bought; and growers who have not contracted are looking for higher prices. Mendocino contracts are not yet being made. Pulled wools are very high back east. The English embargo keeps all wool from her colonies out of U. S. It is stated that while before about two years ago 75 per cent of mutton came from aged sheep, at least 60 per cent of mutton now comes from lambs, reducing the possible wool output of the future. About 1/4 of the Nevada spring clip is reported under contract, and nearly two-thirds of the Oregon clip, at prices considerably under those now prevailing.

Sacramento Valley, spring clip, 39@40c
Mendocino, year's Nominal
Southern, spring clip 28@30c
Southern, 7 months 15@18c
Imperial Valley, 7 mos. 14@15c
Nevada, year's 31@32c

HIDES and TALLOW: The present California hide market is ruled by peculiar circumstances and presents an almost unknown situation at present. There is a seasonal shortage of light hides on this Coast and the producer is being paid two cents per pound more for this type of hides than the Chicago tanners will pay, delivered at their front door. On the other hand, heavy stock is practically unsalable here and the East shows almost as little interest in this grading. Light hides are quoted at 22 cents delivered in Chicago and 24 1/2 @ 25 cents here. The tallow market looks very firm with prices quite high.

Steers 23 @ 25 c
Cows 23 @ 25 c
Light hides, 25 to 48 lbs. 25 @ 26 c
Kip 20 @ 22 c
Calf and veal 29 @ 30 c

Dry Hides 32 1/2 @ 33 1/2 c
Dry Kip 35 @ 36 c
Dry Veal and Calf 38 @ 40 c
Pelts, long wool \$3.25@3.50
Short wool 1.25@1.50
Horse hides, wet, large, ea. 5.00@5.50
dry, large 3.00@3.50

Los Angeles, March 6, 1917.

CATTLE: The past week brought no change in this market. Last week's prices were firmly maintained. Offerings were not heavy from either California or Arizona. Killers, while all in the market, were cautious buyers, only taking such lots as needed from day to day, showing no disposition to buy ahead, hoping for a weaker market as spring advances and the coming of grass. The Eastern markets are hardly so strong.

Per cwt. f. o. b. Los Angeles:
Beef steers, 1000 to 1100 lbs. \$9.00@9.50
Prime cows and heifers 7.50@8.00
Good cows and heifers 7.00@7.50

HOGS: Not so many hogs in the past week and prices reached the highest point here for many a long day. California and Arizona furnished all the supply. No Idaho hogs in the high prices East drawing them all that way. The Kansas City and Chicago markets paid such prices during the week as to justify shipping to those markets from the Imperial Valley.

Per cwt. f. o. b. Los Angeles:
Heavy, averaging 250@300 lbs. \$10.25@10.75
Mixed, 200@250 lbs. 10.75@11.75
Light, 175 @ 200 lbs. 10.75@11.75
Rough docked 20 pounds, piggy sows 40 pounds and stags 40 per cent.

SHEEP: While there is no change to note in this market from a week ago, it remains firm. Buying light at the high prices. Utah and Idaho continue to furnish what comes in. The high prices of wool making flockmasters more reluctant than ever to sell off their sheep. Lambing has been going on now for more than thirty days and it will not be long before spring lambs will be coming in, and this is expected to relieve the market.

Per cwt. f. o. b. Los Angeles:
Prime wethers \$9.00@10.00
Prime ewes 9.50@10.00
Yearlings 9.50@10.00
Lambs 13.00@14.00
CALVES: Market quiet. Offerings continue good and sales slow. Selling at \$3.50@3.50.

No. Portland, Ore., Mar. 5, 1917.

CATTLE: Today's receipts of cattle were quite a surprise to the trade, being much above expectations. A total of 1400 head were unloaded. Market was rather slow at the opening. One load of prime hay fed steers brought \$9.85 while another load brought \$9.80. A number of loads of light steers went from \$9.35 to 9.75; good steers sold from \$8.75 to 9.25 while medium grades brought \$8.00 to 8.50. There was a fairly good demand for all cow stuff, butchers were the most active bidders, especially for the off grades, one load of cows and a few heifers brought \$8.15 with a few other sales of good cows from \$7.50 to 8.00. The balance of the stuff was made up of dairy and half-fed cows which sold from \$6.50 to 7.25. A few prime heavy bulls brought \$7.25 while the bulk of good bulls brought \$7.25@7.75.

HOGS: There was but a light supply of hogs here today and prices took another sharp advance; a gain of 50 cents was in order on all sales. One load of prime light hogs brought \$13.50 while the bulk of sales were from \$13.25 to 13.35. Pigs sold up to \$12.25 with the bulk of bids at \$12.00.

SHEEP: Sheep prices scored another advance in both the sheep and lamb division. Best lambs brought \$12.90 to \$13.10; one load of yearling wethers sold at \$11.75, prime shorn yearlings brought \$10.00, while several loads of good mutton ewes brought \$9.75; demand was good and all supplies were moved readily.

trade to care for. Eastern quotations have been about steady but the differential between their figures and San Francisco quotations has not been such that shipping is warranted. One car left the State for the East during this period, but this was sold outright to the agent of a foreign government. The Northwest is buying rather freely here, Alaskan trade having opened up early this year. Prices, however, are still far in excess of the quotation in effect on the same dates last year.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extra	36 1/2	36 1/2	36	35	32 1/2	33
Prime 1sts	36	36	35 1/2	34	31 1/2	32 1/2
Firsts	35 1/2	35 1/2	35 1/2	—	—	—

EGGS.

A marked resumption of Eastern buying has been seen on this market during the past week and local dealers now look forward to steady prices as long as the quotations in the East warrant purchases here. During the past week nearly fourteen cars of eggs have been shipped out of this market, either by rail to the East or by water to Seattle, and this outside trade has proved a life saver to the market. Receipts are very heavy for this season of the year and any drop in the East is almost sure to precipitate another break here.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	24	25	24 1/2	25 1/2	25 1/2	25 1/2
Fancy 1sts	—	—	23 1/2	25	25	25
Ex. Pul.	22	22	22 1/2	23 1/2	23 1/2	24

CHEESE.

The Eastern demand for cheese has been so great that any stock which is offered on this market is immediately snapped up for Eastern account, and shipped from here with only a cursory inspection. As a result the prices on every type except Jack cheese have advanced and sales at the top figure on this type are more common.

Y. A.'s 22 1/2 c
Fancy Calif. Flats, per lb. 21 c
Monterey Cheese 16@20 c

DECIDUOUS FRUITS.

Deciduous fruits were without quotable change during the past week, with trading in this line somewhat lighter than the average for this season of the year.

Apples:
Bellflower, box \$.60 @ .75
Newtown 1.10@1.25

CITRUS FRUITS.

An advance on fancy grapefruit proved the only notable change on a very dull market. The high prices named by the Association have as yet failed to meet with popular approval and hand-to-mouth sales have been the rule. However, the retailers' supplies will soon be exhausted and they will then have to meet the asked prices.

Oranges:
Navels, fancy, per box \$2.40@2.75
do, choice 1.85@2.25
Tangerines 1.50@2.00
Lemons:
Fancy, per box 3.25@3.50
choice 2.50@2.75
Lemonettes 1.50@2.00
Grapefruit, fancy 2.25@3.00

DRIED FRUITS.

Most of the dried fruit trade, both from the packers' and the producers' ends, seemed to prefer to lean back and watch political developments in this past week, and very little trade in futures was reported. Spot trading is naturally light as only small holdings exist in this market.

[Net to growers, bulk basis, f. o. b. shipping point.]
Apples, new crop 5 1/2 @ 6 c
Apricots, per lb. 15 @ 16 1/2 c
Figs, black, 1916 6 @ 6 1/2 c
do, 1917 5 1/2 @ 6 1/2 c
do, white, 1917 6 @ 6 1/2 c
Callimyrna, 1917 9 @ 10 c
Prunes, 4-size basis, 1917 5 @ 5 1/2 c
Prunes, 1916 5 1/2 @ 7 1/2 c
Pears 6 @ 7 1/2 c
Peaches, 1917 6 @ 6 c

HOP.

That brewers anticipate a much decreased business as the result of the passage of the Reed "bone-dry" law by Congress last week became immediately apparent when the offered prices on all kinds of hops were sharply cut. Little or no trading was reported, as first hand holders are said to believe that a reaction will have to come.

Sacramento 7 @ 9c
Sonoma 7 1/2 @ 9c
Mendocino 8 @ 9c

LOS ANGELES.

Los Angeles, March 6, 1917.

BUTTER.
Receipts of week ending Mar. 6, 1917 —310,575.
Receipts of week ending Mar. 6, 1916 —351,600.

Receipts the past week were light for the time of year and with a very good consumptive demand prices were held steady up to Saturday, extras up to that time continuing to bring 35c. The general tone of the market was weak and only the firm markets East enabled holders to maintain old prices. Extras in Chicago were held firm at 40c through the week and extras in New York were 40 1/4 @ 41c up to Monday. With the opening of the current week the market here broke on Monday 1c, extras selling on call at 34c in anticipation of better receipts. Prices now are 8c higher than this time last year, and the feeling is that present prices are kept up solely by the light production. Tuesday the market on call broke 1c and trading light. Only 10 cubes of extra selling, 5 at 33 1/2 c and 5 at 33c.

Extra creamery 33c
Prime first 32c
First 31c

HOG PRICES BEYOND RECORD AND STILL GOING

Never in a half century have hogs been so high priced as they were about two weeks ago; and since then they have advanced nearly \$2.00 per cwt., being quoted March 6 in Chicago at \$14.75 for heavyweights, and being marked up in San Francisco Mar. 7 to \$13. This is in spite of the condition revealed by one large packer's statement that he had received twice as many hogs in Feb., 1917, as in Feb., 1916. On the Portland market, they have been 3½ to more than 4½ cents higher all the past winter than the high prices on corresponding days the previous winter which was generally considerably higher than the winter before. One load of prime light hogs sold Mar. 5 in Portland at \$13.50. At Los Angeles there was a 50-cent rise Mar. 6 over our quotations of a week before. The extreme prices are reducing herds to an extent that may mean a scarcity next year even greater than this.

Prices to growers in Southern California are considerably lower than in Sacramento Valley, with San Joaquin Valley prices intermediate between the two. Sharp competition with Oregon buyers even as far south as Glenn county has forced prices; and much stock is going to Portland from that section.

1917.	Wed.	Th.	Fri.	Sat.	Mon.	Tu.
Extra	35	35	35	34	33	
1916—						
Extra	24	24	24	25	25	

EGGS.

Receipts (railroads) for week ending Mar. 6, 1917—3343 cases.
Receipts (railroads) for week ending Mar. 6, 1916—5327 cases.

There was more life in this market the past week than for some time. While receipts were very good and the Eastern markets declined prices here worked higher. Besides a good consumptive demand there was very good buying on storage account for March and April delivery, and this caused an advance in the cash market. Extras sold up 2½c till Monday, case count 4½c and pullets 3½c. Case counts are now 8c higher than this time last year. Chicago first lost ¼c and the New York market was weak. Tuesday brought little change in the market here. Trading on call was light and extra and pullets were the same as the day before. Case count, however, advanced 1c.

1917—	Wed.	Thu.	Fri.	Sat.	Mon.	Tu.
Extra	23½	23½	25	25½	26	26
Cse Ct.	20½	20½	23	25	25	28
Pullets	21	21	23½	24½	24½	24½
1916—						
Cse Ct.	18	18½	18	18	18	18

POULTRY.

There was further advance in this market the past week. No Eastern poultry in and the local receipts were light. This caused buyers to bid up higher for broilers, fryers, hens and roasters. Broilers were advanced 3c and fryers 2c and demand good at this improvement. Turkeys, ducks, and geese unchanged but firm under light offerings.

We quote from growers:	
Broilers, 1½ to 2 lbs.	32@33c
Fryers, 2½ to 3 lbs.	28c
Hens over 4 lbs.	22@23c
Hens, under 4 lbs.	21@22c
Ducks	22@23c

Geese	18@19c
Roosters, 3 lbs. up (soft bones)	25c
Turkeys, heavy, 12 lbs. and up	29@30c
Turkeys, light	24@25c
Squabs, live, per doz.	\$1.50@3.00
Dressed	3.75@4.85

CABBAGE AND CAULIFLOWER.

The market the past week went all to pieces. The receipts were not heavy, but the arrivals were poor and there was very little shipping demand for either cabbage or cauliflower. Home demand moderate and supply in excess of its requirements. Hence the sharp break in prices. Cabbage was dull at \$2.50@3.00 per cwt. against \$4.00@4.50 per cwt. a week ago. Cauliflower was 80c@1.00 per crate against \$1.40@1.50 a week ago and sales slow.

BEANS.

There was not much doing in this market the past week. The high prices caused buyers to hold back and go slow. Limas and whites remain unchanged, while pinks and blackeyes are higher, they not having advanced so fast as the white and limas heretofore.

We quote from growers:	
Limas	12.50@13.00
Large white	12.00@12.50
Small white	12.00@12.50
Pinks	8.25@8.50
Blackeyes	7.50@8.00
Tepary	5.75@6.25

HAY.

There was a general advance the past week in all hay. Receipts light and a very good demand was had both for alfalfa and grain hay. Local buying, however, was only moderate and mainly of alfalfa for dairy purposes, the bulk of the demand coming from the country. Receipts 79 cars.

We quote f. o. b. Los Angeles:	
Barley hay, ton	\$20.00@22.00
Oat hay, ton	21.00@23.00
Alfalfa, northern, ton	18.00@19.00
Alfalfa, local, ton	21.00@22.00
Straw, ton	11.00@12.00

many on sale. Lemons, while steady, were very slow sale, the best still bringing 1@1½c per pound in the grove picked. Poor stock has to sell for what it will bring.

AUCTION SALES.

New York, March 5.—Twenty-eight cars navel and two cars mixed oranges and five cars lemons sold. Market opened lower on navel but recovered before the close. Market easier on lemons. Snowing. California navel averaged \$1.50@3.10. Lemons averaged \$2.85@3.65.

Boston, March 6.—Thirteen cars sold. Market unchanged. California navel averaged \$2.10@3.20. Lemons averaged \$3.35@3.65.

Philadelphia, March 6.—Nine cars sold. Market unchanged on oranges, slightly lower on lemons. California navel averaged \$1.75@2.95. Lemons averaged \$2.50@4.35.

WEEKLY BUTTER AVERAGES.

Week	San Francisco	Los Angeles
Ending	1916	1917
Jan.	26.65	34.91
"	27.83	35.83
"	28.85	36.91
"	30.33	38.48
Feb.	30.25	40.00
"	31.40	39.70
"	32.00	36.00
"	30.90	37.00

March	6...	24.08	35.50	24.16	34.50
"	13...	29.91		28.83	
"	20...	28.33		27.16	
"	27...	28.50		28.08	
April	3...	28.50		28.83	
"	10...	29.31		28.00	
"	17...	27.33		27.50	
"	24...	25.25		25.00	
May	1...	24.33		25.33	
"	8...	24.10		25.00	
"	15...	24.58		25.66	
"	22...	25.00		25.00	
"	29...	26.50		26.50	
June	5...	25.50		27.00	
"	12...	25.83		27.00	
"	19...	24.50		25.91	
"	26...	24.50		25.91	
July	3...	24.60		26.00	
"	10...	26.40		26.60	
"	17...	25.83		26.00	
"	24...	26.00		26.00	
"	31...	26.00		25.91	
August	7...	26.16		26.00	
"	14...	26.50		26.00	
"	21...	26.50		27.95	
"	28...	27.25		28.50	
Sept.	4...	30.00		30.50	
"	11...	30.20		32.00	
"	18...	30.41		31.09	
"	25...	30.41		30.50	
Oct.	2...	31.66		32.16	
"	9...	32.91		32.83	
"	16...	33.50		33.50	
"	23...	32.75		33.00	
"	30...	32.59		33.00	
Nov.	6...	32.66		33.00	
"	13...	32.80		33.00	
"	20...	35.25		35.66	

WEEKLY EGG AVERAGES.
Cents per dozen for Extras.

Week	San Francisco	Los Angeles
Ending	1916	1917
Jan.	9...	31.41
"	16...	30.33
"	23...	34.83
"	30...	36.33
Feb.	6...	35.66
"	13...	28.90
"	20...	23.66
"	27...	20.30
March	6...	18.33
"	13...	19.50
"	20...	20.00
"	27...	21.41
Apr.	3...	21.75
"	10...	22.00
"	17...	21.16
"	24...	21.83
May	1...	21.00
"	8...	21.20
"	15...	24.58
"	22...	25.46
"	29...	25.33
June	5...	25.00
"	12...	25.00
"	19...	24.83
"	26...	24.66
July	3...	24.60
"	10...	26.30
"	17...	27.16
"	24...	28.20
"	31...	28.50
August	7...	21.00
"	14...	33.08
"	21...	33.09
"	28...	33.50
Sept.	4...	36.13
"	11...	37.90
"	18...	38.83
"	25...	39.75
Oct.	2...	39.75
"	9...	42.25
"	16...	48.50
"	23...	47.01
"	30...	47.09
Nov.	6...	47.66
"	13...	49.50
"	20...	52.59

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We have just received a very handsome booklet issued by the California Almond Growers' Exchange, which gives the system they work under in handling most of the almonds grown in the State. The book also gives valuable statistical data relating to foreign and domestic shipments, also it contains pages of testimonials from satisfied dealers, customers of the Exchange. The almond growers can congratulate themselves upon the wonderful success made by their organization during the seven years of its existence.

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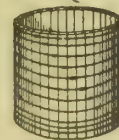
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CALIFORNIA

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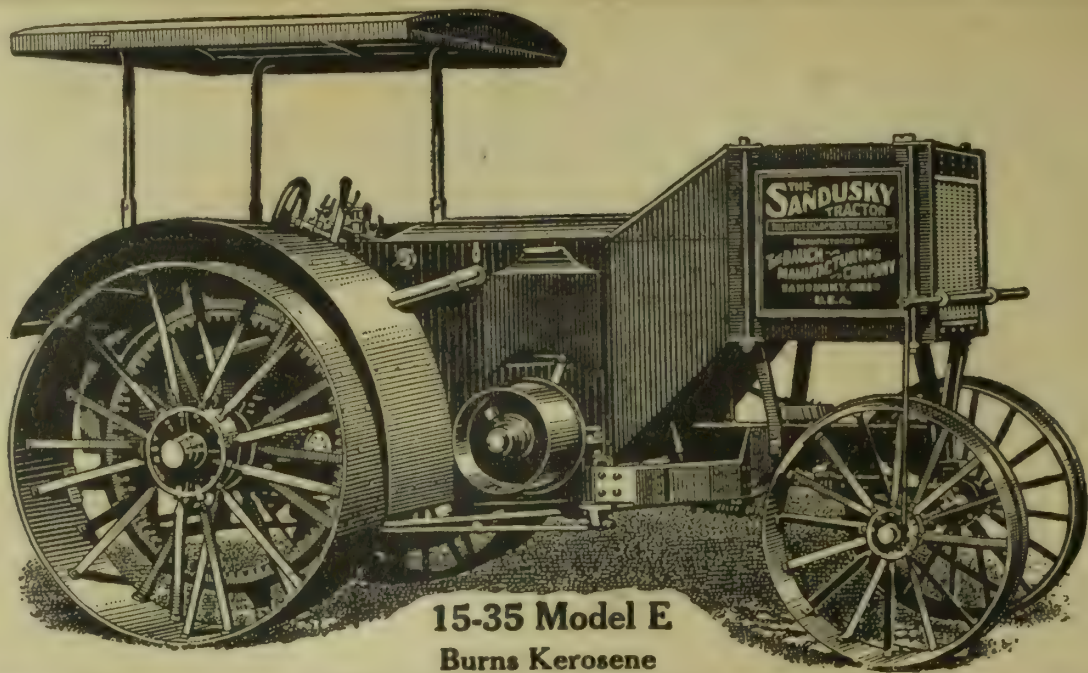
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Dealers 57 FIRST ST., SAN FRANCISCO
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PAPER Blake, McFall & Co., Portland, Oregon

HOLDING 1917 DRIED APRICOTS AND PRUNES

Packers are offering 15 cents to the growers for 1917 dried apricots and 5½ cents for 1917 prunes according to reliable authority. One packer refused to take orders at 14 cents packed which would easily permit him to pay growers 13½. But growers are holding tight and very few sales have been made. This is an exercise of good sense not always displayed in previous years. There is no telling what the crop or war conditions may be. A dried fruit exporter says there has been no export since Feb. 1 for lack of ship space. High freights and insurance, and difficulty in obtaining permits from England to supply European countries are added hindrance to export. But if the crop should be light, as a Santa Clara grower fears on account of rain and frost, America will use it all. The exporter mentioned believes that in case U. S. goes to war or if the war ends, dried fruit prices are sure to rise. If we remain in the present uncertainty, they may drop. At any rate there is no use selling until the probable crop is known.



15-35 Model E
Burns Kerosene

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"THE LITTLE FELLOW WITH THE BIG PULL"

WHEN you buy a tractor you buy so much metal fashioned into a certain shape, because you expect it to render valuable service. You know that you cannot get more out of any machine than was put into it when built. Paint and fancy fixings do not make a tractor; therefore, buy a tractor that is built right, not merely for looks nor because of unproved claims.

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Farming with The Sandusky is farming certainty. Then why buy any other than the best—why depend on immature or freak designs, much paint and loud talk to do the work that is to make your farm more profitable?

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Our own four-cylinder, four-cycle, 5 x 6½ heavy duty, slow speed vertical motor; positive combination force feed and splash self-contained oiling system; Bennett air cleaner; three-speed selective transmission, 2 to 5½ miles per hour with direct drive on low; ideal three-point spring suspension; all steel construction; small over-all dimensions and short turning brakes; easily handled; surplus cooling capacity.

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We guarantee The Sandusky Tractor full 15 horse power at the drawbar and 35 on the belt pulley; capable of handling at least four 14-inch mold-board plows eight inches deep where a big team can pull a 12-inch plow six inches deep; to run belt machinery up to a 32-inch separator; to have one-third reserve over its drawbar rating, and for one year against defective workmanship and material.

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THE PACIFIC RURAL PRESS

SAN FRANCISCO

MARCH 17, 1917

LOS ANGELES

Feeding Citrus Trees From Mangers.

[Written for Pacific Rural Press.]

A HUNDRED and forty thousand citrus trees have been basined by the National Orange Co. of Riverside County, according to E. A. Chase, to whose pioneering efforts the great citrus development of Riverside is largely due.

"We don't give advice, but point to our groves," says Mr. Chase. "We are satisfied with the basin system. Think we have great results so far, though we've been at it only two years."

In some cases, the basin levee is thrown up just outside the drip of the tree, and this is most favored by Mr. Chase, though it has drawbacks as mentioned below. Another way is to put the basin between two trees, leaving them on a narrow strip of dry ground between. On steep ground, two or more basins per tree may be necessary to avoid digging too deep on the upper side, for the bottoms must be level. Almost all of the basins are mulched with manure, bean straw, cheap alfalfa, weeds, prunings, fertilizer, etc. The advantages of mulched basining are: (1) the expense of cultivation is avoided.

(2) The ground, which gets "hard as bone" if not cultivated at just the right time after irrigation, is kept mellow and moist so angleworms may be kicked out with one's shoes any time during summer, and bacteria are permitted to be most active in making fertilizers available.

(3) Less water is used, though it is applied twice as often. The mulch prevents evaporation and baking; and because no cultivation is necessary, the frequent watering is possible. There would not be time for a cultivation after each of such frequent irrigations. This keeps the trees more evenly supplied with water; and as foreman S. H. Moulton of one of the orchards explained, "Though the basins were in poor shape last summer, we never wilted a tree." It is aimed to run the water three inches deep in the basin each irrigation. (4) Fertilizers of all kinds applied in the irrigated mulched basins are immediately in reach of the rootlets; for the basined ground is full of feeders up to the surface. Every inch of the rich surface dirt in a level basin is thus useful to the tree; while it is recognized that the surface dirt is entirely wasted by the ordinary system of summer cultivation. (5) More trees per acre are desirable, in order to use all of the ground. The Chases planted some trees 14x20 feet, and later took out some of them alternately, leaving them 20x28 feet.

That is now regarded as a mistake, since the basins have been put in. "We ought to crowd the land with trees," says Mr. Chase, "and if we were planting now, I think it would be best to put them 14x18 or 20 feet.

Level mulched basins for citrus trees permit most economical use of water and fertilizers, better use of land, better condition of soil without cultivation, better crops, and better tree growth.

between trees entirely used, especially where basins are built only large enough to catch the drip from the trees. Surface pipes are used on some of the steep orchards to carry the water. In the others it is run down a furrow between rows, and cut into each basin, filling it three inches deep and then passing to the next one. Then at the next irrigation the furrow is already open clear to the lower end, so the water is turned into the lower basin first, and then successively into the upper ones. Neither the furrow nor the center is cultivated at all. Thus it dries out and shows what the soil all over would be if not mulched, or cultivated at just the right time. It quickly gets hard as rock. Of course, no roots can grow in the centers, and they do not need to; for they have plenty of food available in the surface soil of their basins.

Wide centers should then be left at regular intervals for driveways.

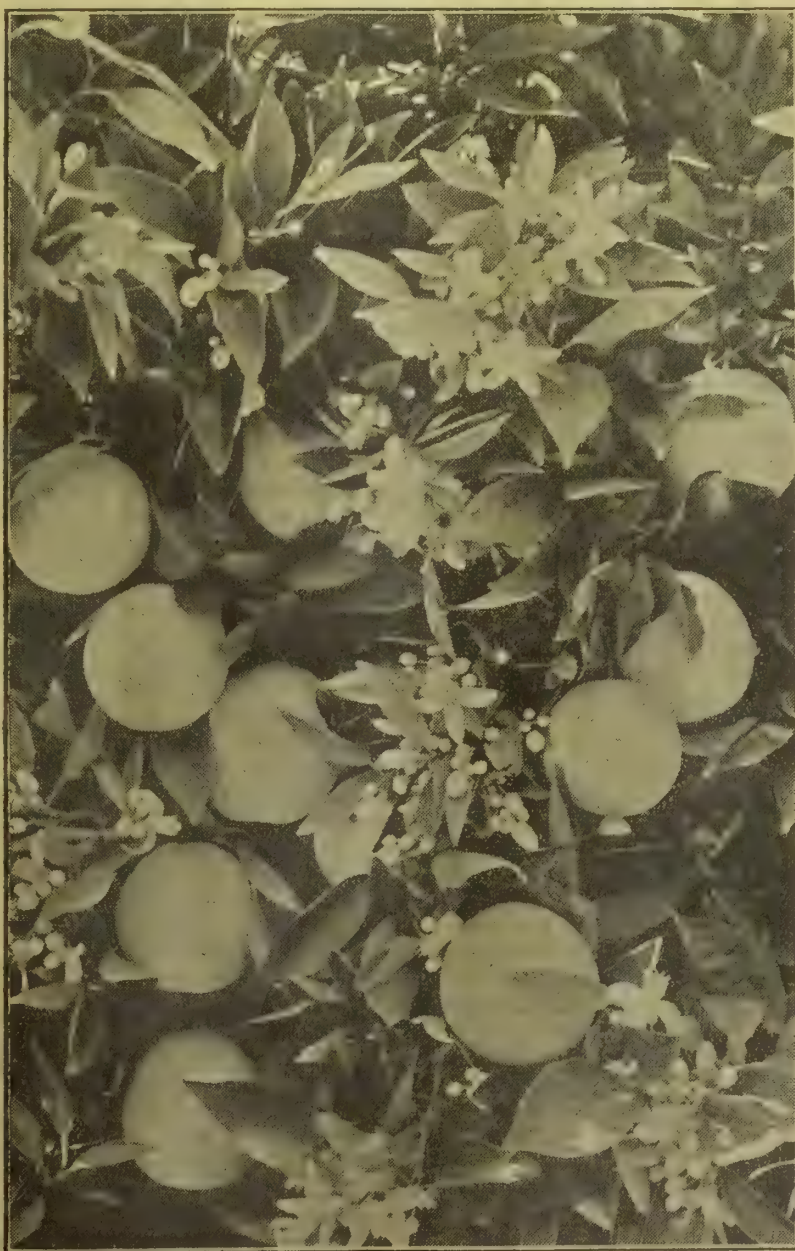
How the Basins Are Handled.

—So far, none of the centers between rows are occupied by basins; and not in all cases are the spaces between basins occupied by trees. That is the reason closer setting is proposed. Another way to use this soil would be to enlarge the basins, leaving room for only a furrow between them. Perhaps that much soil per tree would be unnecessary; but the trees may need sunshine and air that would be precluded by closer planting. Still another way to use the centers would be to grow summer cover crops there to use for the mulch; but that requires more water than may be available.

About 100 pounds of dry mulch are needed per basin. Mr. Chase says they can't grow enough between the rows; and thinks perhaps water is too expensive to try it in summer. We had already noted in orchards at Corona that the winter cover crop was mowed twice and thrown into the basins. At the Riverside orchards, bur clover was expected to be knee-high before March 1. But most of the mulch is bought and hauled in. Spoiled alfalfa at \$8 per ton is considered cheap mulch and fertilizer. Prunings used as mulch ought to be chopped. Otherwise they hold everything so loose it dries out. The mulch should become compact and several inches thick or the ground in the basins will bake. Digging in some of the approved basins showed the ground loose, mellow, dark colored, filled with rootlets and angleworms.

The basins must be level all over the bottom, to soak all roots uniformly at every irrigation. This was not realized when they were first made; and much labor and root damage are being required to get them in shape now.

(Continued on page 328.)



Heavy annual crops are due to giving the trees the food and water they need where they can get it. Mulched basins have proved very economical and effective.

PACIFIC RURAL PRESS

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EDITORIALS

WHY IS IT A GOOD YEAR?

THE rains have come along in good sequence and with ample moisture—just as everyone had reason to expect, and no one right to deny. Such a March, if carried with equal step to the end, will insure full production, though the mid-winter run-off is of course less in such a year, and that is an ideal condition, for it insures production on the mesas and plains by its coming as needed, and keeps the rich lowlands open to make their grand contribution to abundance. The temperatures, too, though they do chill the slim shanks of lean and slippered Pantaloon, awaken new flame of prophecy in the flashing limbs of Pierrette. Thus the winds of a cold March in California hold fast the snow-masses in the mountains while the blossoms are bursting in the valleys and prophecy abundant water in the streams when the irrigation times begin in the foothills and out upon the plains. It is proving, in fact, a glorious type of winter for everything but grazing, and it is our own fault that we are pinched by that. If we exercise but one-tenth the foresight which farmers in wintry countries find essential to their safety in the way of storing roughage for stock, we can easily insure against loss of stock or sacrifice of value in buying feeds at rates above possibility of return. Beyond this one problem which it enforces, such a year as this is really the best we have because it opens all the good land to production with ample time for all the work needed to secure it. With such late rain the plains will make their crops from several months of seeding; the low lands will have but brief overflow or none; reclaimed lands will keep their levees solid; the irrigated lands will have long runs of water from retarded snow melting. It will be worth much to our own people and much to a hungry world that California will this year have all her lands in producing commission and all her people standing confidently and resolutely by the land.

VACANT LOT FARMING AGAIN.

WE SEEM to have shot ourselves quite a piece into the limelight by our objection to the popular obsession that all the ills in the food situation can be cured by turning vacant spaces in towns and cities into vegetable patches, either by municipal ordinances or by voluntary associations of urban people. It does seem very foolish to fly in the face of popular fervor, and it would probably serve us right if we should be publicly pelted into perdition with onions and potatoes, were it not clear that such manifestation of poetic justice would at this moment cost the public more than any worth of our demerits. It would be cheaper and better to do nothing so expensive and allow us to roast in the flames of popular indignation. For when the currents of popular fervor are turned on by enthusiasts, whose demagogic power waxes inversely as their knowledge of economics and horticulture wanes, these currents make short work of obstructions, and therefore we ought to be allowed to go out, with a sputter and a flash, by this electrical analogy. Still, while we are content to burn for the sake

of the truth which we believe to be in us, we must say a few words to show more clearly in just what our previous contentions have rested, and to warn the horticulturally and economically insane, who are promoting the idea of urban food production on the commercial basis of leasing land, hiring labor, and buying implements and supplies, as rural production has to be pursued, that such urban ventures, because of outlay, misdirected effort and reduced values of such products as are secured, are practically sure to be disappointing and unprofitable. On the other hand, growing stuff in one's own dooryard, largely with one's own muscle and materials and for one's own use, is likely to be a very interesting effort, if one has knowledge and taste for it, and profitable, too, because the outlay and risk are practically nothing.

WHY IT WILL NOT WORK.

THE chief cause for the popular misunderstanding of the matter seems to lie in the confusion in the minds of writers and speakers as to what might be and what should not be undertaken. The common reasoning seems to be if one can be encouraged to take his own spade, rake, and hoe, and dig, smooth, plant, and cultivate an area which his own family can compass therefore his town or his association of consumers could hire and buy and commercially crop the open spaces, which are now play-grounds for the kids in every neighborhood, and profitably produce foods for the city for less than farmers can and will produce them. In the propagation of this fallacy, in which promoters are, for their own personal vanity or perquisites, exciting the city people, the city papers are ignorantly helping them in this exploitation of public interest. This effort is based upon a fundamental misconception of commercial food production as a business requiring technical knowledge of several kinds without which the product will come to naught through wrong cultural practices, lack of protection against pests or other natural adversities and lack of skillful handling in other respects. Besides all these things, such production requires the attitude which a man or woman who makes good must assume toward his or her own business in the world and mastery of it, and that constitutes a farmer. Of course, one may live in the town and exert the attitude and mastery of a farmer in his farming business, but that is rather rare. For a city person, or a bunch of them, to undertake promotive, protective, and productive commercial farming on land which is not farming land, under conditions which are not farming conditions, and with a point of view which is not that of a farmer, would be as misplaced an effort as to build an ice factory in the boiling crater of Lassen's peak.

LAND BANKS GETTING TO WORK.

JUST as we go to press we receive the announcement that by appointments by the Farm Loan Board the twelve district land banks are now officered and will proceed at once with organization. The Berkeley Land Bank will open with the following officers: President, Burrell G. White of San Francisco; vice-president, R. L. Douglass, Fallon, Nevada; secretary, A. S. Reed, Los Angeles; treasurer, Dr. George W. Thomas, Logan, Utah. These officers and Dr. Elwood Mead of Berkeley will constitute the directorate. Lysander Casidy of Phoenix, Ariz., will be registrar and attorney. Commenting upon a recent announcement that the Farm Loan Board was getting into preparedness for the work, Orange Judd Farmer of last week says:

The splendid news is announced by the federal farm loan board that it has arranged for the sale of half its first issue of federal farm bonds bearing 4½% interest. The rate to be charged the farmers on loans will range between 5 and 5½%. From the number of applications from farmers wanting loans officials estimate that as high as \$50,000,000 in bonds may be issued within the first year. The government will place approximately \$8,370,000 at the disposal of the banks by subscribing for stock in the district banks. These funds will be drawn upon as fast as needed and although each bank will issue its own bonds the board will undertake the marketing of them.

We have been asked by those who have not

taken the pains to study the plan how banks which received such small stock subscriptions preliminary to their organization could expect to do any business. It must, of course, be understood that the total of such preliminary subscriptions was expected to be small, and therefore the law provided that the government should make the temporary investment which it is now making. As loans are granted, borrowers are required to subscribe for stock to an amount equal to 5 per cent of the loan in each case, and therefore the more loans made the more stock is subscribed, and when the amount becomes great enough the government will withdraw its investment, and the loan system will proceed by its own motive power, which is a three-cylinder motor: the money from the sale of bonds, the interest and amortization payments by borrowers, and the stock subscriptions of borrowers. The gasoline which this motor will consume consists of utmost economy in operation, of limited return to stockholders, and of exceptional security to investors in their bond-buying. The sparks which actuate all operations are low interest and abolition of fees to borrowers, small payments, and no costs of renewals, popular good will, which recognizes the obligation of the body politic to insure fair financing to the food producer and recognizes also security which inheres in exact appraisal of collateral property, and in a cost to the borrower which enables him to meet the obligation required to redeem it. All these things constitute a new system of banking, but they are based upon the principles which underlie all sound banking, although much practice of banking, in its relation to agriculture especially, has often widely departed from them.

WINE GRAPE MEN AND SALOONS.

IT IS pretty clear now that the grape men never should have joined hands with the hard-drink people to whom the saloons are indispensable. This unholy affiliation nearly cost the wine grape interest its very life, and manifestly the only way to save it now is in the repudiation of the hard-drink motive which brought it into such danger. The resolution of the wine interest to cut loose was announced in these columns as the result of a mass meeting of grape men in this city last January and a new declaration now appears in the resolution adopted by the California Grape Protective Association at its meeting in this city on March 10th. It was the result of a referendum by means of a postal vote obtained from the grape growers and wine makers throughout the State which showed a majority of five to one in favor of the Rominger bill now before the legislature for the regulation of the liquor traffic. In this way the wine grape interest pledges itself anew to the following: The reduction of saloons to one to every thousand inhabitants; Sunday and midnight closing, elimination of screened boxes in cafes and saloons and the abolition of dives and disreputable cafes, as well as the removal of saloons from the residence districts of cities. The break came from the hard-liquor men when the latter on consultation refused to concede any of the points necessary to such regulation as outlined. Thus is an issue squarely joined between the saloons and the wine interest as it should have been joined years ago. It now remains to be seen by legislative vote whether this declaration for decency on the part of the wine interest will save it from the punishment richly due to the bad company with which it formerly consorted—bad company which the world seems fast coming to the point of punishing with righteous anger.

California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau at San Francisco for the week ending at 5 p. m., March 13, 1917:

STATIONS	Past Week	Rainfall Data		Temperature Data	
		Seasonal To Date	Normal To Date	Max'm	Min'm
Eureka	1.90	24.04	34.69	55	34
Red Bluff	.73	15.67	19.29	58	34
Sacramento	.68	12.19	15.28	66	34
San Francisco	1.29	15.26	17.99	62	42
San Jose	.58	11.97	13.17	64	32
Fresno	.41	6.70	7.22	68	34
Independence					
San Luis Obispo	.21	22.20	15.70	72	36
Los Angeles	.12	14.53	12.39	76	40
San Diego	.22	8.72	7.95	70	40

By
the Editor

QUERIES AND REPLIES

Inquirer Must
Give Full Name
and Address

Scale on Boston Fern.

To the Editor: I am sending a specimen fern leaf. Please tell me cause of scale and how I can get rid of it. This fern is a large one and there is a great amount of this scale on it.—K. R. G., Honcut.

Your Boston fern has rather a bad infestation of hemispherical scale of which the mature form is about an eighth of an inch in diameter and as smooth, roundish, and brown as half a filbert. It is a very common pest on house and greenhouse plants. Where only a few plants are infested it is easiest to clean them off by hand just as you would any other piece of home bric-a-brac. In the case of a fern it is a good time to do it at once, for now you probably have more mature fronds and less new growth than at any other time of the year. Remove and burn about half the old leaves, cutting low and taking those which seem oldest by color and aspect. This will allow you free access to those you retain. Go up and down each of these with an old tooth-brush, scrubbing and dipping frequently into laundry soapsuds. You must not only dislodge the old brown scales but clean the whole surface of each frond to remove young scales which you may not clearly see. Then give the plant a good shower bath with clean water and watch it for survivals.

Of course we cannot tell you the "cause" of the scale. It is just as much an earth inhabiting animal as we are ourselves and probably a good deal more efficient in its life work. It is on your fern because it had sense enough to catch on to a good thing and it will not easily let go.

Smut on Olive Scions.

To the Editor: Please advise me a safe, sure and simple way to kill "smut" on some olive scions I have received from the southern part of the State. Of course I wish it to be harmless to the vitality of the scions.—H. R. B., Reedley.

It is not the smut you need to remove from the scions. It does not at all matter whether you remove that or not. The danger lies not in smut but in the insect upon whose exudations the smut grew. It is the insect which has the power to bring your trees to distress: the smut is only the visiting card of the insect. But you must be sure that any insects which are on the scions shall be dead ones. If you have only a few stiff-wood scions you can wash them off with laundry soapsuds—rubbing firmly, but not too hard, with a soft rag. If you have too many for that or too small brush, you can kill everything by putting it in a tight barrel, box or tank, and rigging a tight cover of some kind. Then put on top of the packed-in stuff a dish with 1 oz. of squirrel bisulphide to each 12 cubic feet in the receptacle and clap on the lid tight and leave it on 40 minutes. Then everything will be dead and the cuttings unhurt. You may be dead too if you don't leave your pipe on top of the clock in the kitchen before you start in on the job.

Irrigation During Blooming.

To the Editor: Is any injury occasioned by irrigating peach trees when in full bloom?—J. A. E., Modesto.

There has not been demonstrated to be. Trees of all kinds are irrigated during blooming when the water comes then, and though there has always been some impression that it is not a good practice, such fact has not been proved up and isolated as to cause so that it could not be otherwise attributable. For our own part we should be more scared of irrigating a short time after blooming because fruit is more apt to be upset then than in the flower. Until some one scientifically proves something about it, we should plan to skip the whole period by filling the ground up before the buds swell (if the rains do not do it) and let the next come when the fruit is seen to be taking hold well. This would be particularly desirable if one was using very cold water in deep checks or basins. There are other reasons to think that the plant may be seri-

ously disturbed by being suddenly cooled off while in action—but with water at ordinary temperatures or warmed by running in furrows we would take the chances of the wrong time rather than to let the tree go dry.

Garbanzos.

To the Editor: When is the proper time for planting Garbanzo beans? Is there a good market for them? Would they do well on heavy loam soil along the Merced river? The land has been flooded by river and is now in fine shape for plowing. Can they be planted this month and harvested in June? What is the average market price for them in San Francisco?—L. F., Turlock.

Garbanzos are not beans, and will not sell for beans. They are near-peas, and their English name is chick-pea. They are in their manner of growth and their uses more like lentils, but in their appearance more like a lop-sided pea. They ought to do well on such land as you describe, but they are likely to require more time for ripening than you give. The price is uncertain, though you might find some one to contract for them. They are not much used by Americans. Money has been made in the past by shipping them to Mexico, but our relations with Mexico are a little rickety now. We would rather be caught growing straight American beans than garbanzos.

No Great Chance in Hoarhound.

To the Editor: A friend of mine has forty acres covered with hoarhound. Is this medicinal plant of any value commercially. If so, how is it cured? Are the roots used, or just the stalks?—D. S., Dos Palos.

Hoarhound is an abundant weed all the way from the Cliff House to Cape Cod. Any one who wants it can gather it off the landscape. Commercial herbalists dry and pack the leaves in forms convenient for the trade, and have the business in this and other abundant "yarbs" so organized that it is hard for an amateur gatherer to break into the trade profitably. These herb-packers contract with regular collectors who could easily supply a million times the present output if they could make wages at it. The desirable part of the plant is the leaves, which are dried and packed in small parcels for retail druggists and in bulk to candy makers. It is the decoction of these dried leaves which is usually employed for medicinal purposes. Candy-makers are the largest users, and effort to make a contract with them is the first thing to undertake if you wish to push the project.

Lentils Not Popular.

To the Editor: Please give information on the growing of lentils in this locality. What is the time of planting and method of culture? Would it be advisable to try them extensively?—E. R. L., Ripon.

Lentils are a kind of pea which Americans have little use for and our seedsmen do not usually find it desirable to offer the seeds, which indicates a minimum demand. They are grown just like a dwarf pea, for they do not climb. They have a pea's endurance of frost and you can plant them now in drills for cultivation like peas—if you have the seed. The lentil may offend American ideas of efficiency because it only has one or two peas in the pod. It is like the garbanzo in that kind of shiftlessness. Americans like peas which put 8 or 10 peas in a pod and make the pod big enough to grab easily. Besides, the lentil is not eaten as we eat peas: it is used only in stews and soups and for that purpose we use "split peas," which are cheaper because more easily secured in quantity and suit our taste just as well. You certainly should not undertake lentils extensively unless you can get a contract with a buyer who has a good European appetite.

Pineapples in Stanislaus.

To the Editor: I have been wondering if it is possible to grow pineapples in this valley. Some years ago I was in Grahamstown, Cape Colony, and there I saw acres of this fruit growing. The

rainfall was about 15 to 20 inches and just as warm as here.—T. W. M., Modesto.

You surely can, if you will build a lath house for half shade, surround it with a low wind-break of evergreen shrubs, to exclude dry hot wind, and sprinkle frequently to increase atmospheric moisture in very dry times; or you could arrange so that your buildings and fences would give such protection—rigging an overhead shelter against frost during the winter. Such a little undertaking might interest and please you very much, but there would be no money in pineapples thus grown. No matter how well you might succeed, it is too easy to get pineapples from places where moist, frostless air prevails naturally. Commercially it is a forbidden fruit for California, though we have seen an acre of them growing in this State.

Fertilizing Strawberries.

To the Editor: What is the best fertilizer and method of applying it to my bearing strawberry plants? The soil is Pinole gravelly loam, and stable manure is not available. The climate is favorable and I get good crops, but not large paying ones, the soil not being sufficiently fertile. This is especially true of the fall bearers. I irrigate and cultivate well, and would get paid well if I knew how to fertilize well.—E. P., Ukiah.

If the plants are growing vigorously, that is, making good leaves (according to the habit of the variety), fruiting can be promoted by using superphosphate at 200 lbs., and muriate of potash 100 lbs. to the acre. As potash is shy now free scattering of wood ashes will take its place. As you are probably scant of nitrogen, 100 lbs. nitrate of soda per acre is also promising. Apply the superphosphate and ashes now and the nitrate after the early blooming. Scatter well to get even distribution over the ground, not too near to the roots.

Seed Corn

To the Editor: I expect to plant sweet corn and field corn (yellow dent) on river bottom land. Which will be better to plant, home-grown or Eastern seed? How early is it advisable to plant?—W. A. F., Oakdale.

Plant the best, well developed and matured, home-grown seed you can get. It is pretty well settled now that (except for the sake of trying new varieties) the best seed is that which is well grown and selected from plants grown in the locality and which demonstrate by their success their adaptation to local conditions. Plant when your situation is free from frost. There are local variations on that point, but it is usually about May 1, except in low frosty places.

Grafting-Over or Re-planting.

To the Editor: I have about 15 acres of wine grapes about 12 years old which I am thinking of grafting to Thompson Seedless. Would you advise grafting or replacing with young vines?—H. L., Live Oak.

Vine grafting is a very simple operation if done in the sawn-off stump below the ground surface. There are many good transformed vineyards in the State. Whether you should trust to grafting-over depends upon how thrifty, healthy and strong-growing the variety is which you have and how good a grafter you employ or how good a mechanic you are yourself. You must decide advisability for yourself.

Alfalfa Roots.

To the Editor: In following an alfalfa field with vines the plowed-up alfalfa roots are somewhat troublesome in cultivating the vines. If plowed and cultivated under, have they enough fertility to pay for the trouble, or would you advise raking them up and hauling them off?—E. B. M., Fresno.

They certainly are good for the soil. We should chop them up with a sharp disk and work them in. It will also cost less than to gather them up.

Caterpillars and Crane Flies.

In our last issue the printers mixed up our "black spiny caterpillars" and our "Crane-fly larvae" so that the reader could not apply proper treatment to the former. All of the paragraph under the Crane-fly heading from the line "colonies as they hatch," etc., belongs to the black spiny caterpillar prescription—and we would like to apply the same lead-arsenate treatment also to a few black, spiny printers!

Spring Work on Grapes.

[Written for Pacific Rural Press.]

De Lano Bros. of Fresno county got results from good cultural practices on Thompsons and Malagas. When seen late last August, they had been picking over 25 pounds green per vine from Thompson Seedless set out in January, 1913, on 7½ acres. Of this, about 23 tons were sold green at \$40 per ton. One-third were being left for raisins because the price for green fruit dropped.

The Malagas on six acres of 9-year vines were expected to yield 80 tons this year. The yield was 60 tons in 1915 and 74½ tons in 1914.

Principal points in the De Lano grape culture are to let the ground dry as much as it will in spring until forms of bunches appear. Weeds are hoed or shoveled away from vines and basins dug around the trunks. Then plow to cut surface roots and reduce sap flow until grapes are set. In 1916, plowing started the first week in April. They plow about 8 inches deep. Two rounds are first made with a 5-inch single plow away from the vines.

After the plowing, the ground is harrowed and worked down to hold moisture until the June irrigation. This is generally applied by running levees through alternate rows both ways and flooding the checks. Then a single plow knocks down the levees and the ground is plowed toward the vines not nearly so deep as the first plowing. Then it is cultivated both ways as close as possible to the vines. The mulch thus made usually dries out as deep as the second plowing, but keeps the ground moist below that.

Very seldom do the De Lanos irrigate twice. An irrigation in October, 1913, did not seem to show results. Water is withheld until June; and this year another irrigation was given in July. At the July irrigation, a furrow through each center was filled, and when it had settled away it was filled again. The soil is not heavy. A layer of the subsoil is clayey but grape roots go through it.

Sulphuring with resublimed sulphur is insisted upon from the time the first leaves start, as long as there is any danger of mildew. Only two or three vines showed the disease this year in the form of "measles" on the fruit. When "forms of bunches" have appeared, the De Lanos pinch off the shoot, beyond the bunch. This year it was during the second week in April. The object of this is to divert sap flow into the bunches and enlarge the sap channels and stems while they are yet soft. That Mr. De Lano does not see any marked difference in size of stems whether pinched at this time or not, may probably be due to his plowing just before pinching, as the sap flow is thus cut off. Mr. Henry, under whose direction the work was done last year and this, advises delay of plowing until the bunches bloom. The pinching cost \$6 an acre at \$2 per day on the Malagas, including the pulling out of unproductive shoots.

No fertilizer is given except manure and cover crop. They get over the whole place with manure about once in five years but irregularly. The cover crop is mostly barley, but could as well be a legume.

Prune Grower Balks Peach Borers.

[Written for Pacific Rural Press.]

Peach borers do not damage prune trees if they are kept away from them. That is not so hard, for they generally enter the tree at the ground. W. H. Stuart of Santa Clara county uses his spray materials successfully. Right after the heavy rains are over in spring, he slakes a barrel of lime in hot water. As soon as it is thoroughly slaked he pours five gallons of crude oil slowly into it, stirring to emulsify the oil.

He digs dirt away from the crown as if he were going after borers, and applies the mixture with a brush like whitewash from some inches below ground to nearly a foot above ground. Then he banks fine dirt tight against the tree and packs it. When the larvae hatch and drop to the ground, they roll away from the tree; and if they come back, can seldom find anything to push against

while starting their holes. The dirt should be packed a second time in spring to keep worms from any cracks whence they might work on the tree. This makes a double insurance against the pest.

The man with the drag barked about 40 of C. J. Oswald's fruit trees in Kern county. To prevent infection with crown gall and other possible diseases or pests, he daubed each wound with varnish last spring. This is still protecting whatever wounds are not already healed over.

Olive trees are much used as windbreaks for citrus orchards in Tulare county. They are a great protection and are making the road borders attractive as well as profitable. Missions and Manzanillos are generally preferred.

Sticky Whitewash for Orchard Trees.

[Paste this in your hat.]

To the Editor: Please give a formula for whitewash that will stick.—D. H., Stockton; A. W. B., Sebastopol; G. E. R., Reedley, et al.

[Answered by J. B. Hurdley, Yucimpa.]

The formula for whitewash which we find most satisfactory is as follows: One-half bushel of lime, slaked in boiling water; one peck of salt, dissolved in warm water; three pounds of ground rice, boiled to a thin paste; one-half pound of Spanish whiting; one pound pure glue, dissolved in hot water. To this add five gallons of hot water and let stand a few days. This gives a whitewash which will remain on the trees an entire season.

TALKS ON Nitrogenous Fertilization

Number 11

WHAT do you pay for in a ton of fertilizer? Plant-food, of course! But your fertilizer is not all plant-food, by any means. It contains other substances which necessarily enter into the chemicals and mixtures. Actual plant-food is indicated by the guaranteed analysis, and the fertilizer that carries more of the plant-food your soil needs is the best one for you to use.

SULPHATE OF AMMONIA

In buying Sulphate of Ammonia you pay for nitrogen, about the most essential plant-food in California soils, true enough; *but*, in a ton of Sulphate of Ammonia you buy *more* nitrogen—*more* pounds of active, available, lasting plant-food—than you can buy in a ton of any other nitrogenous fertilizer.

That means that each pound of plant-food in Sulphate of Ammonia receives the *lowest* charge for cost of production, transportation, handling, storing, and distribution on the farm.

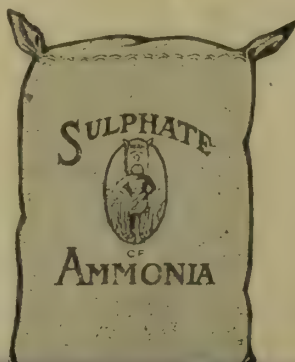
Sulphate of Ammonia, because of its reliable, uniform composition, its superior mechanical condition and its easy distribution, is the simplest of fertilizers to handle on the farm.

In field and orchard, on lawn or meadow, for truck and garden crops, applications of from 100 to 300 pounds per acre give splendid returns.

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Sample sent on request

Blight-Resistant Pear Stock.

To the Editor: In regard to the Chinese sand pear (*Pyrus calleryana*) as a blight-resistant stock, what results have been obtained by Prof. Reimer of the Southern Oregon Experiment Station.—R. G. R., Sacramento.

[Answered by Prof. F. C. Reimer, Tallent, Ore.]

While we regard *Pyrus calleryana* as a very promising new stock for pears our work with it has not yet

reached a point where we can recommend it for extensive commercial planting. It is true that we regard it as very promising, but as yet we haven't sufficient proof to say that it is a desirable and congenial stock for Bartlett and other varieties. In grafting and budding it unites readily with our cultivated varieties, and the young trees grow well, but it still remains to be determined whether the union will be permanently congenial and satisfactory. We are now testing it in this manner.

The type from southern China, which is growing at Oroville, and also near Sacramento, Cal., should be planted only in mild climates, as it appears to be tender in cold regions. The type of this species from Central China can be grown in much colder climates.

The only trees of this species in bearing in America, so far as I am aware, are those belonging to Mrs. L. Williams, Oroville, Cal., and to R. D. Stephens, Mayhews, Cal.

MUSCAT CROPS INCREASED BY LESS CULTIVATION.

[Written for Pacific Rural Press.]

That seemingly shiftless cultivation is the only way to get a crop of grapes in some cases seems shown by Chas. Westrup's Muscat vineyard in Fresno county. From 88 acres of 8-year vines, on well-drained soil, he took 16,000 trays in 1915. In 1916 he rented 20 acres to his son and from the remaining 68 acres took 35,000 trays, according to Frank Henry, whose directions were followed in 1916.

One block of 980 vines never had a crop before, but produced 2113 trays this season. The soil was "too fertile"; and with ordinary cultivation forced so much wood growth that grapes didn't set. All the cultivation this block got this season was a plowing with four horses on a 2-gang plow after the ground had dried out. Then a cultivator was used in one direction and a rotary harrow cross-wise. Lack of further cultivation directed the vines' energies from wood growth into fruit production.

Comparison.—The shoots were pinched as noted in other articles, to get an early setting of the second crop on the whole piece. On the 20 acres operated by the son, the vines were summer-pruned and treated as previously. He lost his second crop and got 9000 trays from the 20 acres. His crop was 450 trays per acre, while that from the remaining 68 acres averaged close to 515 trays.

TRAGEDIES WITH CLYMAN'S.

To the Editor: Referring to the inquiry about Tragedy prunes. They bear well if mixed with Clyman plums.

T. J. True.

Lancaster.

This is an oft-tried combination, but it does not seem to have worked everywhere that both varieties have been tried. Some more of our readers might tell how they made Tragedies bear where they had not previously.

A shipment of Watsonville Newtown Pippins sold recently in London at \$4.45 per box or \$2.50 f. o. b. Watsonville.



If you are figuring on planting citrus trees this year, you should get in touch with us at once.

Oranges

Lemons

Grapefruit

Avocados

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There is a strong demand for California citrus fruits. Large national advertising and improved growing methods have greatly enhanced the value of this industry. If you have suitable land with water, there is no crop that will return so large a revenue per acre as the citrus crop.

Orders for any considerable number of citrus trees received from all points in Southern California will be filled from our nurseries at La Habra, Orange County, which will mean a saving in both time and freight.

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Santa Rosa	330
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30 in. long, 7 in. wide	21.00

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Spray Early for Citrus Red Spider.

[Written for Pacific Rural Press.]

Kill the first few red spiders on citrus trees and then they can't lay eggs which would require another spraying when they hatch, is the advice of Mr. Griffin, until recently of the Leffingwell Ranch in Los Angeles county. During the eight or nine years Mr. Griffin was on the Leffingwell Ranch, he neglected his own; and red spider put them into a sick condition, yellowing the leaves and causing many to drop. His home orchards were sprayed thoroughly with lime-sulphur last fall; and when seen this spring by our representative, he was among the trees keeping a personal lookout for red spider or any-

thing else that might come along. The spray was still plentiful on the old leaves; but since the spiders prefer new growth, that must be watched especially.

"Spray any season when you find them," says he, "using lime-sulphur 1 to 25 in early spring when trees are most dormant, and as weak as 1 to 60 when there is much tender growth and warm dry weather to follow. You must consider condition of trees and weather; and be careful." One spring Mr. Griffin used 1 to 25 just before a warm, drying windstorm; and it burnt badly.

Lime-sulphur is considered much better than dry sulphur, and more effective in cool weather though not when temperature is high enough to vaporize the sulphur well. Dry sulphur on the trees is knocked off by the work stock in cultivating. It irritates the eyes of men and beasts, having, at least temporarily, blinded several mules on this ranch. Soluble sulphur was not mentioned by Mr. Griffin, but Deputy Horticultural Commissioner B. R. Jones of Los Angeles county says that lime sulphur is still in the lead for all around effectiveness; and he also urges growers to spray before injury is noticed and before the first-appearing red spiders have a chance to lay eggs. "Each of these will produce many more; and prevention is always better than cure. The lime-sulphur should be used at a strength of 2½ to 3 per cent for a 30 degree Baume product."

TREAT THE APHIS EARLY.

[By Deputy Horticultural Commissioner B. R. Jones, Los Angeles.]

Every grower of peas, beans, cabbages, cucumbers, melons and other plants likely to be troubled with aphids in any form, should watch them very carefully and at the very first appearance of the insects, give treatment at once. (1) Because the plants are then small, making treatment easier; (2) because if you wait until damage is done to the plants, the insects will have become so numerous that the constant hatching will result in the destruction of the plants notwithstanding treatment thoroughly given. Probably strong soapsuds containing one part to 400 of "40 per cent nicotine sulphate" or "Black Leaf 40" is the best treatment, taking care to apply it to the under sides of the leaves in particular.

Tree Aphids.—This is also as good a spray as any for the black aphids on peach trees which sometimes are so numerous as to make the young leaves die and turn brown. About the same amount of the spray liquid as has been used on the top of the tree should be soaked into the ground about its roots, as in the case of the woolly aphids on apples and pears, to insure good control of the lice. For woolly aphids, the spraying must be very thorough and repeated when necessary, and wood ashes, blue stone, or tobacco stems or dust on the soil about the tree are a help. In few cases only are these two kinds of tree lice destroyed; but if they are given thorough treatment they will become much less injurious.

Lady Bugs.—The common native lady bugs help in controlling all kinds of aphids and they should never be destroyed, either in adult form or while in the form of a dark-colored, bristly larva, three-quarters of an inch long, pointed at both ends with a couple of square yellow or red spots on each side of the back near the middle. These queer-looking creatures are very frequently not recognized as the larva form of this insect. However, the main point in

controlling the aphids is early treatment before they become too numerous and the plants and trees are weakened by their work.

The Tulare County Canning Peach Growers' Ass'n has decided to operate again. They sold over 4,000 tons last year to a Pasadena cannery because local canners would not come up to their prices. Only one or two eligible peach growers in the county have not signed up.

TREE SPRAYS

Whether or not your crop will pay for the labor and outlay largely depends on the care of the trees and the spraying. These depend on the quality of the materials used in compounding the remedies and sprays.

Scientific preparation, backed by the name, insure you the quality of

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Besides the certainty of quality, there's the advantage of consulting Mr. S. W. Foster, entomologist in charge of the insecticide department. Write to him for advice on any of your orchard troubles.

Send for the pamphlet you need to help solve your problems:

- 1) How to control the principal insect enemies and fungous troubles of deciduous fruit trees during the growing period.
- 2) The dormant spraying of deciduous fruit trees west of the Rocky Mountains.
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All trees 4 feet up, unless noted.

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90 Indian Free	50 Sultan	30 Mam. Bl. Twig
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"There is still time to plant deciduous trees. Telegraph your order and prepare your ground for immediate planting. We still have a good supply of

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No variety of fruit holds better promise than the Olive in California. By far the greater portion of Olives and Olive products used in the United States is still imported from Europe, and the majority of the people of the United States have yet no knowledge of the food value of ripe pickled Olives. It is only a question of time until the great value of this fruit is known, and the demand will be doubled many times. Plant an Olive orchard now and insure a reliable income for your children and your children's children. We have a very fine supply of

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WILL QUOTE VERY REASONABLE PRICES ON EXTRA HIGH-CLASS TREES.

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2501 Tulare Street,

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Growing Phenomenal Berries.

[Written for Pacific Rural Press.]

From 13 Phenomenal berry plants, R. S. Weaver of Merced county didn't get enough berries for family use two years ago because he neglected watering. He didn't get many berries last year either, because of the underdevelopment due to the preceding drouth. But the next neighbors got all they could use and then some from a similar row of Phenomenals planted on a field ditch and trained to the fence. The ditch contained water most of the time when the main canal had some. Seeing this, Mr. Weaver watered liberally last summer, beginning soon as they needed it and continuing irrigation weekly through the bearing period. There is every prospect of a big crop this season, for canes grew last year up to 20 feet long, making big long laterals from every joint near the base late in the season.

Pruning.—New growth is allowed to run on the ground all summer while last year's wood on a trellis is bearing a crop. The new growth is not much in the way, for its laterals do not develop till picking is done. After bearing is over, any time up to the next spring, the canes which bore this year are cut en masse from their low trellis of two small wires side by side and perhaps a foot apart. Then the past year's growth is easily twisted around the wires like Loganberries. By growing on the ground many have rooted at their tips, supplying plants to sell or increase the patch.

Phenomenal berries are Burbank hybrids of blackberries and red raspberries, similar to Loganberries, but, according to Mr. Weaver, larger and better. They are best planted about 10 feet apart in rows about six feet

apart. Fruit buds show in clusters when shoots from leaf axils of both the main canes of last year's growth, and their laterals, are a few inches long, as noted by Mr. Weaver. Some developed more slowly than others, so the ripening season was several weeks long.

FEEDING CITRUS TREES FROM MANGERS.

(Continued from first page.)

Previous to the basing, the grove had been irrigated by furrows straight down the rows, so the ground between the trees did not get wet enough to allow roots to grow there. When the basins were made between the trees and only as wide as their diameter, water was run into the basins, but there were no roots to use it. The feeders between the rows died slowly for lack of water; and for a month or more the proprietors became alarmed; for the trees looked very sick. But as soon as new roots became established in the basins, tree growth "shot ahead" with healthy color.

Unless future years reveal unexpected objections, one or the other sort of basins is considered permanent on all the trees of the National Orange Co.

EXCESS SAP AND ALMOND DROP.

You who have almonds on sub-irrigated lands can save a part of your crop by cutting off the ends of the limbs just when, or before, the trees begin to cast their nuts, and as fast as these limbs begin to dry or heal, cut off more limbs, or more off the same ones, so as to keep the overflow of sap escaping until the nuts quit falling, writes M. L. Porter in Modesto Herald.

This will save you part of your crop and is the best you can do except to graft your almond trees to peaches or other fruit that will stand more water than almonds.

-for perfect results-



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Germain's Proven Seeds have given perfect satisfaction to critical growers all over the Southwest. They have been thoroughly tested for germination, purity and their adaptability to California soils and climate.

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Fine Crop of Short Staple Cotton.

[Written for Pacific Rural Press.]

From 35 acres of Mebane cotton, Lee Benge of western Imperial county made 38 bales last season, some of it yielding $1\frac{1}{2}$ bales per acre. While it was growing, there were six weeks when it needed water but didn't get it. The land had not been plowed for four years of cotton cropping. Part of the rows were eight feet apart. It was planted dry early in April, because Mr. Benge was at other work. He believes the crop would have averaged $1\frac{1}{4}$ bales if he had plowed the ground. He believes there would have been three bales more on the piece if he had double listed. He made $\frac{1}{2}$ bale more per acre the year before on similar land planted late in February than on some planted in May. There are usually two weeks of warm quiet weather late in February and early in March. If cotton is planted then, the best crop will be gathered, says Mr. Benge after two years of experience and close observation of neighbors' crops. But good results follow planting even as late as June 1. March and May are the best months to plant according to Horticultural Commissioner F. W. Waite.

Planting dry is a mistake also, thinks Mr. Benge; for he has noticed that everyone who irrigates before planting gets a good stand, other conditions being favorable. His land is a medium hard soil with more sand than extra hard land, making it less sticky.

How the Crop Was Made.—Last season a rolling stalk cutter was run over the field. Then it was listed and about 15 pounds of selected seed planted per acre, using a two-row corn planter and plates with holes about the size of a dime. These drop three to five seed at a time on tops of the ridges. It is better now to use extra seed than to take chances on a poor stand.

The seed comes up in four to eight days, depending on weather and moisture, though it can be made to come up in two days by rolling it in wet ashes and allowing it to absorb warm moisture awhile before planting.

As soon as it is up it is harrowed crosswise of the rows with two horses and a three-section tooth harrow. This breaks any crust, kills weeds, and smooths ridges so they won't dry so soon. Part of Mr. Benge's was harrowed twice where the weeds were worst and the cotton thickest. He got a better stand there than elsewhere; though the harrow knocked down many plants and seemed to be killing them. They would straighten up in an hour, however. To get the roots deep away from summer heat and dryness, irrigation was withheld until the leaf edges curled and parched slightly.

As soon as possible after the plants came up, a shovel cultivator stirred the soil except a strip three inches wide in the rows, using a slow team to avoid covering the plants.

Plants are chopped out to 24 to 30 inches apart on rich ground; because if too thick, they grow spindly and bear a small crop in the tops where it is hard to pick. On poor ground they are left 10 to 14 inches

apart. Many of the stalks fall over at the chopping, but straighten up in a few days. As soon as they are standing nicely, they are cultivated, throwing dirt toward the rows.

February-planted cotton makes its first crop of as many as 40 or 50 "squares" late in April; and if not allowed to get too dry, these produce blossoms and cotton. From the first irrigation until October, "hard" land should be irrigated every ten or twelve days as the irrigation is practiced, for it does not take much water each time. Soft land does not require it so frequently, especially if well cultivated. Irrigation is run through the furrow between each two rows, aiming to run it only half way up on the sides, which is difficult where the ground has not been thoroughly leveled. It should be held until it has soaked through the ridges, though perhaps not till it has wet the tops of them.

Lots of people do not cultivate after each irrigation; but Mr. Benge does, and it was only by frequent cultivation that he brought it so well through the six weeks of water shortage last summer.

As against the good crop of high-priced cotton produced by this extra care Mr. Benge bought a crop of 35 or 40 acres on the stalks, which had been planted June 10 and poorly cared for. It yielded $\frac{1}{2}$ bale per acre.

BEANS AT LIVE OAK.

In answer to J. V. S.'s (Lodi) question in your issue of Feb. 17: From my experience here at Live Oak, blackeye would be my first choice, pinks next. The large whites are most successfully grown (as you say) on moist river bottom soils, which is natural bean soil. Here we are under irrigation, which gives us unnatural moisture.

One of the most successful crops grown in this section was planted with best results June 15 to 25. Our experience has taught us that by planting between those dates, or thereabout, there is practically no danger of red spider (which, by the way, I think is the bean bug our friend has in mind). If there are no red spiders in his territory he would likely get results planting large whites the last of March or first of April. If his soil will hold moisture enough to sprout his beans, would much prefer the month of May.

C. Frank Westlake.

Live Oak.

According to Horticultural Commissioner Harney of Yuba county all of the available bottom land on the east side of the Feather river, both north and south of Marysville, has been leased for bean culture the coming season. He estimates that there will be 1,000 acres more beans than usual in that district. He also states that practically all of the Sutter Basin will be planted to beans and that the Durst Hop Co. are planting fully a third of their hop land to beans besides a large acreage which they have rented.

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Golden Nugget (yellow heart), Long Fellow (long, red, luscious), 15c per ounce, postpaid. All kinds of SEEDS.

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Fundamentals of Agricultural Economics.

[By Thomas Forsyth Hunt, Dean of College of Agriculture, Univ. of California.]

The value of an industry to a community or to society is not wholly dependent upon the capital earned upon the investment, but in large part depends upon the labor return obtained by those who actually occupy the land, whether as owners, tenants, or laborers. It is absolutely essential to the permanence of our political and social ideals that the man who actually occupies the land, whether he owns it or not, shall receive such income for his labor as will enable him to rear and educate a self-respecting family.

No one doubts the importance of ability in any occupation. Some may not, however, understand its significance when applied to farming. Farm records have been compiled in many parts of the United States. They show that in a great many of these regions, one-fifth of the farmers have a labor income of \$800 to \$2000 more than the average of the particular locality. The average labor income for a particular locality rarely falls below \$300 or rarely rises above \$500 per year. The labor income of the upper one-fifth lies somewhere between \$1100 and \$2500. This is only another way of saying that the labor income is three to five times as great among the upper one-fifth as it is for the average farmer.

In the very nature of the case, farming being operated upon an openly competitive basis can only return on an average a moderate wage plus the current rate of interest for high-grade securities, which is always a low rate of interest. It is a fundamental law of business that the better the security, the lower the rate of interest. As Ambassador Herrick says: "Mansions may become boarding-houses, factories may become fit for nothing; but good fertile land will have a value as long as civilization lasts."

A distinction must be made between the security the land affords and the security which improvements offer. The world over, land is capitalized at not far from a 3% basis. The capitalization of the improvements, and therefore, the farm as a whole, will vary with the nature of the improvements. If, for example, a man has improved his farm with a peach orchard, the productive life of which is, say, fifteen years, he should not only receive interest on the capital, but he should receive in addition an annuity which will amortize within fifteen years the principal invested.

Every Farmer Should be above the Average. — Dean Hunt presented tables of figures tending to show that in any neighborhood yields three to four times the average are to be expected on particular farms and under special conditions. It was laid down as a general rule that a qualified farmer should expect to produce a yield 50 per cent greater than the average farmer, but that a man who bought a property on the basis of exceptional yields is generally destined to failure. For successful farming, Columella says there are three conditions necessary: knowledge, capital, and a fondness for the pursuit.

In 1910 the average value of a

farm property in the United States was between \$6000 and \$7000; in California it was between \$18,000 and \$19,000. Arbitrarily using as a basis of discussion a gross income of \$4000 per year, it was shown that the average farmer would require a capital of \$25,000. Assuming, however, that no man should engage in farming unless he is 50 per cent above the average, a capital of \$16,000 would be required.

It was shown that only a portion of the \$16,000 should be spent for unimproved land, say, not to exceed \$6000. The \$4000 gross income may be divided roughly into ex-

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Lock Seamed and Soldered

There is a tremendous difference in surface pipe. This is appreciated most by the man who has wasted time and money on inferior makes. If you want absolutely the strongest and best surface pipe you can buy, select

Madewell Surface Pipe

It has many distinctive important advantages you can't afford to overlook. The Madewell Long Lock Seam is made doubly sure and strong by soldering the entire length. A better seam can't be made. The Madewell Lock Seam Sleeve—used in Madewell pipe only—is decidedly stronger and smoother than the old fashioned lap and riveted seam used in other pipe. This feature alone puts Madewell Pipe in a class by itself.

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The Super-Six is the only car that ever went 1819 miles in 24 hours.

It is the only car that ever went from San Francisco to New York and back in 10 days and 21 hours. In that one round trip it twice broke the ocean-to-ocean record.

At Pike's Peak, a Super-Six Special defeated 20 great rivals, all specially built for hill climbing. It made the best time in the world's greatest hill-climb.

It holds all the speed records for stock touring cars, and the records for quick acceleration.

Note What That Means

You say you don't want a racing car. We know you don't. You will never, perhaps, use half the power or speed of the Super-Six.

But mark that this motor is a small, light, simple Six. We have added no size or cylinders. We have taken a light Six and, by this invention, increased its efficiency 80 per cent. And solely by reducing friction, which destroys the motor and wastes its power.

We Did Just This

The Six-type motor had great limitations. Despite all perfections, much vibration still remained. And vibration causes friction.

Some engineers, including the Hudson, were testing Eights and Twelves. They felt that twin-type motors might solve the friction problem. The trend was away from Sixes.

Then Hudson engineers brought out this Super-Six invention. It is a Hudson invention, patented by Hudson. In this new-type Six they obtained all the efficiency and endur-

ance sought for in the multi-cylinder type and they did this without adding cylinders, complications or weight.

All in Endurance

All the Super-Six records—for speed, hill-climbing and long-distance—were won by this motor's endurance. They mean that motor wear and friction are reduced to almost nothing.

By excelling in these feats, it proved that this motor will outlast any other type.

That is what you want above everything else. You want less wasted power, less wear, less friction. That means, of course, supreme performance. But it also means supreme economy.

What You Can't Afford

Some men will say, "I can't afford a superb car like the Hudson."

But you can. All this beauty, luxury and superlative performance will cost you less than many a car without them.

The Super-Six invention, in all probability, doubles the life of a motor. It saves the power which was wasted in friction. And this year we add a new gasoline saver which saves a great deal more.

No other fine car gives such value as the Hudson. No other car has a motor which compares with this. A higher-quality car is impossible. Yet note how far the Hudson undersells many cars that it out-performs.

Go see and prove this car. It is now the largest-selling car above \$1200. And the saving shows in the Hudson price.



Phaeton, 7-passenger, \$1650
Roadster, 2-passenger,
Cabriolet, 2-passenger, 1950

Touring Sedan . . . \$2175
Limousine . . . 2925
(All prices f.o.b. Detroit)

Town Car . . . \$2925
Town Car Landaulet . . 3025
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HUDSON MOTOR CAR COMPANY, DETROIT, MICHIGAN

penses, \$2080; interest at 5 per cent on \$16,000, \$800, and labor income \$1120. It was pointed out that if this farmer was paying interest at the rate of 8 per cent, his labor income would only be \$640. If on the other hand, a man owns a farm, on which he intends to raise a family, he may be content with 3 per cent interest on his investment; hence will receive a labor income of 9 per cent of \$1440 per year. If, in addition, the farmer has children who enable him to do his work within the family, his outside expenses may be reduced and his family income thereby increased.

The important fact with reference to these children is not the money they earn; but it is that the training which they get in contributing to the family income is of the utmost importance to society.

Renters and Debtors Need Larger Farms.—Dean Hunt repeatedly stated that the figures given should not be taken literally, but as illustrating the method to be employed in arriving at a probable income. If a man must go in debt for a farm, he needs a larger income than if he has the money to pay for it, an economic principle which is constantly being ignored in agriculture. In like manner, a renter needs a larger farm because he must not only make a living for his own family, but he must in whole or in part make a living for the family of the land owner. In 1910 the average size of a farm in California operated by the owner was 227 acres; that by tenants was 342 acres.

Can a Living Be Made on One Acre?—The answer is that if a labor income, such as has just been discussed, was earned from one acre, it would be worth at least \$16,000. Paying \$1000 for an acre that is dear at \$50, does not qualify it to produce a gross income of \$4000. While not denying the possibility of producing \$4000 worth of products from an acre of land, it is necessary, strange as it may seem, to state the simple fact that ordinary mortals seldom do it. It is not the number of acres a man owns, but it is the total gross income which the property is capable of producing which determines whether it is possible to make a living on it.

GRASS FOR COAST RANGE.

To the Editor: What kind of grass should we use to seed mountain ranges in this section? They are getting so they don't produce much. We have rains until June.—H. L. H., Potter Valley, Mendocino county.
[Answered by Prof. P. B. Kennedy, University of California.]

The grass that your correspondent would be able to grow in Potter Valley would depend upon the exposure, slope, shade conditions, and character of soil. Under the trees, and particularly where the land may have been burnt over, orchard grass usually makes a good growth if planted in the fall before the rains. English perennial rye grass, Italian rye grass, and crested dogstail will also make a fair growth under the same conditions. Velvet grass is of some value as a rough feed and withstands a great deal of drouth and makes fair feed early in the spring, but later if it gets old, is not very palatable.

Along gravelly creek banks, where

there is some seepage moisture in winter, and perhaps very little during the summer, a considerable amount of sweet clover may be raised by simply scattering the seed on the land.

It is difficult on the loamy soils that lose their moisture very rapidly, to get anything but the native species to grow, and these have been very largely eaten out and replaced by worthless weedy species. We have not yet found a grass that will meet the requirements under these conditions. The grass must be so aggressive as to come into strong competition with weedy species already present as well as have great drouth-resistant qualities to enable it to endure the long period of drouth with little or no moisture in the soil.

160 ACRE FARMS IN WESTERN CANADA FREE



Canadian Farmers Profit From Wheat

The war's devastation of European crops has caused an unusual demand for grain from the American Continent. The people of the world must be fed and wheat near \$2 a bushel offers great profit to the farmer. Canada's invitation is therefore especially attractive. She wants settlers to make money and happy, prosperous homes for themselves by helping her raise immense wheat crops.

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and other lands at remarkably low prices. During many years Canadian wheat fields have averaged 20 bushels to the acre—many yields as high as 45 bushels to acre. Wonderful crops also of Oats, Barley and Flax. Mixed farming as profitable an industry as grain raising. The excellent grasses full of nutrition are the only food required for beef or dairy purposes. Good schools, churches, markets convenient, climate excellent.

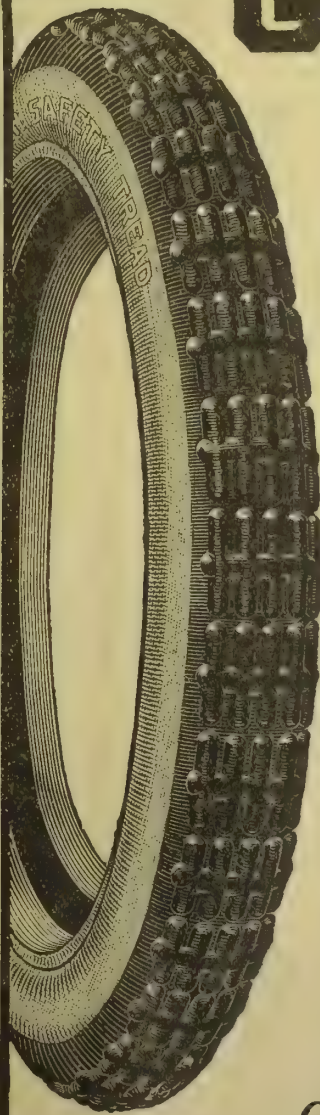
Military service is not compulsory in Canada, but there is an extra demand for farm labor to replace the many young men who have volunteered for the war. The Government is urging farmers to put extra acreage into grain. Write for literature and particulars as to reduced railway rates to Supt. of Immigration, Ottawa, Canada, or

Gilbert Roche, Canadian Government
Exhibit, San Diego, Cal. Canadian Gov't Agt.

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You know you get the toughest tread, rubber compounding has yet produced, and all the seven cardinal tire virtues—style, comfort, safety, economy, durability, freedom from tire trouble, and mileage—IN a Goodrich Tire.

But have you looked deep into the Goodrich *pledge of perfection*, and *Goodrich Fair Treatment*, which go WITH each Goodrich tire, and require a service worthy of the good name the tire bears?

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National Automobile Racing Championship, won by Dario Resta with 4100 points.

15,582 points scored toward the championship by Silvertown to 7,176 by ALL its competitors COMBINED.

Eighty percent of all the prize winning positions of A.A.A. sanctioned races.

31 First to 5 Firsts by ALL its competitors.

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"Best in the Long Run"

Corn Yields \$90 Per Acre.

[Written for Pacific Rural Press.]

Whether California is a corn State or not, a \$90 an acre crop is not to be sneezed at, and that is what O. C. Kiefer of Butte county realized on old alfalfa land last year. During the winter Mr. Kiefer plowed up an old alfalfa field that was pretty badly run out. The land had been poorly leveled the first time for irrigation, so it was carefully gone over with scraper, and by April was ready for another good deep plowing. That time it was plowed an average of 13 inches deep. Planting was done the early part of May with a corn planter, Orange County Prolific seed being used. As soon as the rows could be distinguished, it was cultivated with a disk cultivator, and during the season it was treated in the same manner five or six times. Besides the cultivations it was irri-

gated twice, the last time when it was tasseling out. When harvested about the first of November, it yielded an average of 3600 pounds of shelled corn, which sold for \$2.50 a hundred or \$90 an acre. But in his location corn does not do well on land that has not previously been in alfalfa, attempts of his father on such land showing comparatively poor results.

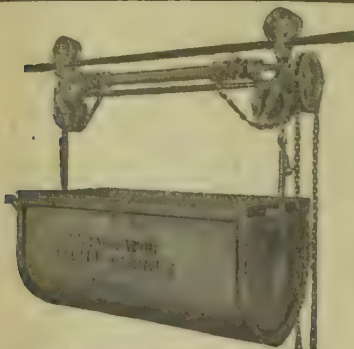
It may also be of interest to silo owners to know that corn planted and cared for as Mr. Kiefer cared for the above made better silage on adjoining places than corn that was grown after a crop of grain hay. This is explained by the fact that the later-planted corn did not have so much time to mature; and as a result carried a smaller percentage of grain.

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FRUIT TREES

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LOUDON FEED CARRIERS
For Cow Barns.
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California Hydraulic Engineering & Supply Co.
68 Fremont St., San Francisco.
AMERICAN PUMP COMPANY,
424 EAST THIRD ST., LOS ANGELES

WILL SQUIRRELS EAT TOMATOES?

To the Editor: In answer to J. C. W. of Concord in the issue of Feb. 24, "Will Squirrels Eat Tomatoes?" I can state from experience that squirrels will not touch them.—H. W. Haberland. Walnut Creek.

To the Editor: I had a crop of tomatoes near Hermosa Beach reduced about 1/2 by squirrels. Not the plants, but the fruit, both green and ripe, was cut off and carried into their holes.—J. M. K., Los Angeles.

To the Editor: I have raised tomatoes in this section for three years and find that squirrels will eat all the tomatoes they can get; and what they cannot eat they will carry away. Get rid of squirrels before you plant tomatoes.—Edw. A. Sorenson, Oroshi.

To the Editor: Will squirrels eat tomatoes? They will not harm them until they get as big as an egg; but every one will go after that. I had a hundred plants and never picked one from them. The squirrels got them all.—A. A. Hubner, Wheatland.

In 1915 the United States imported more than 3,837,000 pounds of soy beans, valued at approximately \$87,000; nearly 6,000,000 pounds of cake, valued at \$64,000; and over 19,000,000 pounds of oil, valued at nearly \$900,00.

JUST LIKE BALL BEARINGS!

It's the combination of the highest-grade petroleum grease and powdered mica—special process. Better lubrication—cooler bearings—and the grease lasts twice as long.

STANDARD OIL COMPANY
(California)

MICA AXLE GREASE

790 Bushels of Potatoes

PER ACRE, THE LARGEST CROP
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Were grown in California and awarded Grand Prize by International Jury, P. P. I. E. Not only was this the largest crop, but the quality was especially fine, bringing a price considerably above the market. The grower attributed a good part of his success to the use of

Gold Bear Fertilizer

The average crop of California is about 150 bushels. What do you get?

W. V. Shear, Potato Expert, says: "Don't try to save money by adopting cheap methods to cut from cost of production. Is it not good business practice to spend enough money to produce a good crop and make money on the investment rather than use cheap methods and lose money?"

Fertilizing is not an expense, but an investment, yielding immediate returns.

Let us help you solve the problem of bigger and better crops.

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CALIFLORA BRAND

This is one of the best-known forage crops used in the Southern and Middle Western States. It grows from 5 to 10 feet high and will produce four crops of hay under irrigation and usually two crops without irrigation. It thrives in the valley and foothill sections of California. It yields more to the acre than any forage crop we know of, and the quality of the hay is excellent. The stock of this seed is short and we anticipate higher prices in the near future.

BUY NOW—lb. 50c; 10 lbs. \$4.00; 100 lbs. \$35.00.

Alfalfa Seed

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This is our best grade of common Chilian alfalfa seed. On every test this brand of Alfalfa Seed has surpassed all others. We do not believe its equal can be had elsewhere. When buying this grade you are not paying for any weeds or chaff. It is the cheapest to plant because it is the best. Send for price and sample.

We also offer superior stocks of GRIMM, HAIRY and SMOOTH PERUVIAN and TURKESTAN Alfalfa Seed.

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Splendid stock of OREGON GROWN American Wonder, Early Rose and Garnet Chili Seed Potatoes. These are all good early varieties. Write for prices and quantities desired.

1917 SEED CATALOG—IT IS FREE—SEND FOR IT.

TELLS HOW, WHEN and WHAT TO PLANT.

We Pay the Freight

Valley Seed Co.

506-508 J Street,

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ALFALFA

250 lbs. of Mococho Superphosphate per acre will increase the yield of alfalfa enormously. "In some cases the alfalfa growth has been tripled," writes Mr. F. F. Lyons, San Joaquin Co. Farm Adviser. Write for particulars. THE MOUNTAIN COPPER CO. 332 Pine Street, San Francisco.

FREE PLANS FOR FARM BUILDINGS.

Hereafter any farmer who has farm buildings to build can obtain typical plans of such structures from the University of California, without cost. Through this free distribution of typical plans for farm structures, the farmers of California will be able to make use of the best modern ideas of architects, engineers, and agricultural experts as to how to design farm structures so as to get the best possible returns in the way of service, sanitation, and satisfaction.

For a year and a half the problem of preparing plans for farm structures especially suitable to California conditions has engaged the attention of the Division of Agricultural Engineering of the College of Agriculture. Now plans are ready for free distribution for dairy, hay, and utility barns; milk-houses, hog-houses, and chicken-houses; silos, septic tanks, feeding appliances, and various other farm structures.

Any farmer who is planning any building work on his farm should write to the Agricultural Extension Division, at Berkeley, and ask for a complete list of available plans and how he can borrow them. The importance to the prosperity of California of this very practical new activity of the University is shown by the fact that ten million dollars is spent every year by the farmers of California on farm structures, and yet extremely few California farmers have in the past had the advantage of architectural and engineering advice from experts in farm architecture and farm engineering.

CONVENIENT ONION CULTIVATION.

[Written for Pacific Rural Press.]

An Italian onion grower near Merced economizes cultivation labor by a clever scheme. Ridges are thrown up with centers two feet apart. The seedlings are laid against one side of each ridge about three inches apart and with the root crown about half way up the side. Dirt is raked from the furrow to cover the seedling roots and this makes a narrow trench from which water readily "subs" to the plants. Then a little more dirt is raked from the near side of the adjoining ridge to cover the onions deeper as they grow, and prevent the 'dobe soil from baking.

DO YOU LIKE WILD MUSTARD?

Wild mustard can be controlled, according to State Horticultural Commissioner G. H. Hecke, by use of iron sulphate at rate of 100 pounds to 52 gallons of water, application to be made when weeds are about six inches high. A spray pump of at least 150 pounds pressure should be used with a set of nozzles arranged like a potato sprayer, throwing a fine penetrating spray. This spray will do but slight damage to growing grain. The mustard soon withers, leaving the space it occupied to be filled by growing grain, thus increasing the crop, consequently the yield, with a corresponding net increase to the farmer.

Much rice has been bought in Butte county for shipment to the Allies via Galveston.

JOHN DEERE IMPLEMENTS



The John Deere-Dain System Rake

Here is what you do with the Dain System Rake:

Follow the mower closely, rake while leaves are still active and place hay upon clean stubble.

Make straight windrows, and no dumping of rake is required. There is no bunching of hay in turning corners.

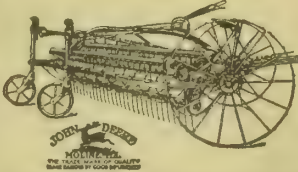
Put the hay in medium size windrows, with the bulk of the leaves inside and the majority of stems outside.

The windrows will be loose in the center for the free circulation of air. The hay retains its color and nutrition.

[The John Deere-Dain System is the rake employed with the Dain System of Air-Curing Hay.

Reel raised or lowered, rake thrown in or out of gear and angle of teeth changed by means of convenient levers.

Ample capacity. The inclined frame grows higher where the windrow becomes larger—an exclusive Dain feature.



John Deere Spreader

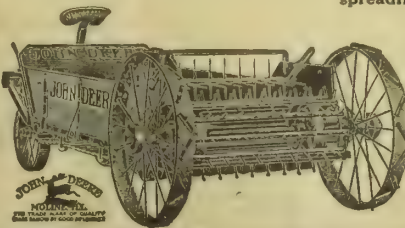
The Spreader with the Beater on the Axle

Mounting the beater on the axle simplified the construction, eliminated troublesome parts and made possible a successful low-down spreader with big drive wheels. There are no shafts to get out of line, no chains to cause trouble, and no clutches to adjust. The only spreader with beater and beater drive mounted on axle.

Low down, with big drive wheels out of the way. Easy to load.

Revolving rake, driven by manure moving toward the beater—no bunching of manure. Ball bearing eccentric drive—a new and exclusive driving device. Makes uniform spreading certain.

Wide spread attachment for spreading seven feet wide can be furnished for the John Deere Spreader. No chains nor gears. Quickly removed.



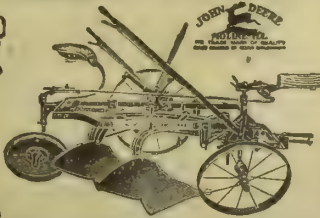
New Deere Light Draft Gang Plow

For twenty years the New Deere Gang has had the good opinion of enough farmers to make it the one best seller—

And, today, it is the same plow it was twenty years ago, with the usual minor refinements added.

Correct in design, always representing the highest development of the plow-maker's art, the New Deere Gang is a leader, and has been every single year for twenty years.

Go to your John Deere dealer's and look this plow over—you will readily see why it is such a popular plow.



The New Deere Gang is the most widely used plow of its type.

It is light draft, durable and is equipped with John Deere bottoms, known all over the world for superior work, easy scouring and light pulling qualities. It cuts and turns full width of furrow.

A simple, practical foot lift and auxiliary hand lift lever—easy to raise bottoms out of the ground.

John Deere Quick Detachable Shares—great labor and time savers. Shares can be taken off easily, only one nut to remove.



BOOK FREE 156 page reference book—tells all about a complete line of farm implements and how to adjust and use many of them. A practical encyclopedia of farm implements. Worth dollars.

Describes and illustrates Plows for Tractors; Walking and Riding Plows; Disc Plows; Cultivators; Spring Tooth and Spike Teeth Harrows; Disc Harrows; Alfalfa and Beet Tools; Farm and Mountain

Wagons; Manure Spreaders; Inside Cup and Portable Grain Elevators; Corn Shellers; Hay Loaders; Stackers; Rakes; Mowers and Side Delivery Rakes; Hay Presses; Kaffir Headers; Grain Drills; Seeders; Grain and Corn Binders.

This book will be sent free to everyone stating what implements he is interested in and asking for Package No. X-152.

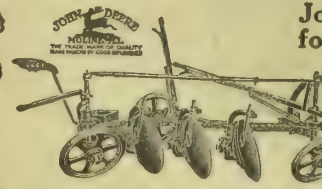
JOHN DEERE, MOLINE, ILL.

John Deere Plows for Light Tractors

So far as quality of John Deere Plows for Light Tractors is concerned, they are built for the farmer who realizes that it is business judgment to buy a high grade tractor plow. Don't forget that a tractor plow is not an everyday purchase.

John Deere Plows for Light Tractors are noted for their high grade work in the field—the real test of tractor plow value.

Before you make your purchase, be sure to see John Deere Plows for Light Tractors. A careful purchase means a permanent saving.



The John Deere Light Tractor Disc Plow works with any standard tractor—the hitch is adjustable.

Three or four discs. Discs have a double setting. Taking care of all conditions where a disc plow can be expected to operate.

Adjustable scrapers keep discs clean and lighten the draft.

No choking in trashy ground—frame is high, beams are dropped, which gives good clearance under the frame, and there is plenty of room between the discs for trash to pass through.



John Deere Harvesting Machinery

John Deere harvesting machines have worked under every possible condition—severe droughts that resulted in much light grain, short and irregular straw—extremely wet seasons, heavy grain, down and tangled.

However, the John Deere, "The Better Binder", has throughout maintained an unbroken record of success in cutting, binding and tying grain.

The John Deere Grain Binder has wide and high bull wheel—great power. Main frame riveted—unusually strong.

Three packers instead of two, make better shaped bundles and save grain.

Accurate tying mechanism.

Quick turn tongue truck saves time, relieves horses and makes square corners and full swaths possible.



John Deere Syracuse Plows

Syracuse Plows have an enviable field record among farmers in chilled or combination plow territory.

Here is a feature that is appreciated by the man who buys a Syracuse Plow. Extras ordered will be duplicates of the original parts. Bolt holes will be in the right place. Every part will fit. In fact all necessary parts that go into a Syracuse Plow could be ordered as repairs and when received built into a complete plow. Extra parts are exact duplicates—no trouble results.

Remember, Syracuse quality is uniform.



John Deere-Syracuse Sloping Landside Chilled Plows are unsurpassed for general purpose work in light soils. They leave a clean, open furrow bottom.

Share and shin piece combined—a fresh, clean cutting edge obtained with each new share.

Index or set-over style of beam—easily shifted to give the plow more or less land.

Equipped with Syracuse Chilled Moldboards—noted for satisfactory scouring qualities, strength and uniformity. Right and left hand styles.



JOHN DEERE, MOLINE, ILLINOIS



PROOF that Blasting the soil pays fruit growers

EVIDENCE

"In preparing the ground for the planting of trees the *Rural Press* recommends the use of powder." PACIFIC RURAL PRESS, San Francisco.

"We advocate the use of explosives for loosening up compact soils and hardpan in tree planting, knowing the value of such work." FANCHER CREEK NURSERIES, Fresno, Cal.

"The use of a good explosive is of great benefit in planting an orchard, as the ground should be loose enough to allow roots to go to their natural depth easily." BENEDICT NURSERY CO., Portland, Ore.

"We favor blasting holes for trees where the soil is heavy. Powder will loosen the soil, giving it a better chance to become aerated, as well as making it more retentive of moisture." OREGON NURSERY CO., Orono, Ore.

"My orchard has made excellent growth, due to the fact that I used dynamite, breaking up the soil and making excellent beds for the roots. If I were to set another orchard I would not think of doing so without blasting each tree hole." T. A. JOHNSON, Boise, Idaho.

"We have used explosives in digging tree holes in the hard caliche subsurface layers which occur here. We find this cheaper than the use of pick and crowbar, and more satisfactory in that the soil is shattered deeper than the hole could be dug." GEORGE T. FREEMAN, Arizona Agricultural Experiment Station, Tucson.

"The use of Farm Powders in the orchard industry is rapidly being learned and appreciated. The worst looking orchard I ever saw, suffering from a lack of drainage, was blasted two or three years ago, and now it looks as fine as any other well kept orchard in this valley." E. H. SHEPARD, Publisher "Better Fruit," Hood River, Ore.

"We have observed many cases in which powder has been used for blasting beds for fruit trees, invariably with great success. The use of explosives is of material benefit when the soil is inclined to be rather shallow and underlain with a hard subsoil. There are few soils in which blasting cannot be done profitably." THE FRUIT GROWER, St. Joseph, Mo.

"I have done a great deal of orchard planting and use powder for making the holes. At first it was used chiefly on heavy hardpan or other soils that were difficult to prepare with the spade, but is now used on all classes of soil. I am planting trees even in light soil, easily handled; I should prepare all the holes with powder. Trees so planted make extraordinary growth." FRANK FEMMONS, Oakhurst, Cal.

"Generally speaking the growth of plants depends upon the condition of the soil into which the roots penetrate. If the depth of loose soil is too limited or the surface water is permitted to stand too long, the growth is impaired. Explosives properly used in such instances have invariably relieved the condition and resulted in excellent growth. The yield is often three times as great on blasted soil as from those untreated in the same vicinity." ROSECROFT NURSERY & FRUIT FARM, Sumner, Wash.

"The O'Connor prune orchard near Los Gatos in the Santa Clara Valley, California, was blasted in 1913. During the previous six years the largest crop was 3,900 pounds. In 1914 after the blasting, the crop was 8,000 pounds, more than double. It was a dry year, too. Where there were from 30 to 40 per cent. of 'drops' in the orchards on both sides, the O'Connor place lost only about 5 per cent. Prunes from the blasted orchard averaged much larger and the trees made a better growth and retained their foliage a month longer than the orchards on either side." JOHN A. GALPIN, Los Angeles, Cal.

"My orchard was planted three years ago and all trees were of even age and size. I intended to blast the whole orchard but ran out of powder and finished the small balance without it. This enabled me to compare the growth of the trees and satisfy myself that the expense was justified. The trees that were planted in blasted ground show a growth of 75 to 100 per cent. over the trees that were planted in ground not blasted. They also appear healthier and more satisfactory in every way. I have just bought 1100 more prune trees and would not think of planting them without preparing the ground with powder." HERMAN H. SMIDT, R. 3, Oregon City, Ore.

is given by many fruit growers in the accompanying page from the Giant book, "Better Orchard Tillage." These men say that blasting

- enables the trees to root deeper;
- adds moisture storage capacity;
- saves labor and money;
- improves orchards that are not doing their best;
- is always profitable when properly done;
- places the soil in the ideal condition that permits newly planted trees to make extraordinary growth;
- increases the yield of fruit.

Scores of the most successful fruit growers in the Pacific Coast States plant all of their trees in beds blasted with one of the

GIANT FARM POWDERS

STUMPING — AGRICULTURAL

—Eureka Stumping Powder or Giant Stumping—both of which are made especially for this and other agricultural work. They have found these Giant Powders particularly well adapted to subsoiling and for blasting tree beds.

Some kinds and grades of explosives tend to shatter and pulverize anything they come in contact with. They act too quickly. These ordinary dynamites do not do the work well and cost more. Eureka Stumping Powder exerts its strength slowly, comparatively speaking. It tends to disrupt, crack, split and heave the soil and it extends its influence over a wide area. It loosens and pulverizes the soil instead of packing it and throwing it high in the air. This is the action that is wanted in soil work and this action the "high percentage" dynamites will not give.

Warning Giant Powder is the trade name of explosives manufactured by the Giant Powder Co., Con. Because Giant Powders are best known everywhere, many have assumed that all high explosives are Giant Powders. Insist upon having the genuine, made only by The Giant Powder Co., Con. If your dealer has only ordinary dynamites, write us and we will see that you are supplied with real Giant Powders.

Try ONE BOX

Perhaps you have never planted trees in blasted beds. To make it easy for you to prove the value of blasting the soil, we print a trial order form in the coupon to the right. Fill it out and we will have our nearest distributor supply you—at the lowest market price—with a 25- or 50-lb. case of either of the Giant Farm Powders. Blast beds for all of your trees. Plant one in a spade-dug hole, the ordinary way. Note the difference in growth.

If you are using explosives for tree-planting, test a case of Giant alongside of the brand you have been using. After blasting with each, take a spade and see how much more thoroughly Giant does the work.

Remember that you can blast whenever the soil is dry, from a day to a year before planting time. Many growers keep Giant Farm Powders always on hand.

Have You Had the Book "Better Orchard Tillage"?

Prepared especially to tell the facts about blasting soils for orchards and in orchards of the West. It tells how to secure the proper sub-irrigation conditions by blasting. It explains how blasting promotes drainage and increases both moisture-storage capacity and fertility. It gives detailed directions for preparing the soil for tree planting or for deep cultivation of established trees. We will send a copy free on request. Tell us about your problems and mark and mail the coupon. Other books on Ditch Blasting, Boulder Blasting, Subsoil Blasting for all farm crops, and Stump Blasting will also be sent on request. Ask for the books that interest you.

THE GIANT POWDER CO., Home Office: SAN FRANCISCO

CONSOLIDATED "Everything for Blasting" ESTABLISHED 1886
DISTRIBUTORS WITH MAGAZINE STOCKS EVERYWHERE IN THE WEST

Tear out and mail this coupon NOW

FREE BOOK COUPON

The Giant Powder Co., Con.
San Francisco.

Send me your illustrated books on the subjects which I have marked X.

- | | |
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| <input type="checkbox"/> Stump Blasting | <input type="checkbox"/> Tree Planting |
| <input type="checkbox"/> Boulder Blasting | <input type="checkbox"/> Ditch Blasting |
| <input type="checkbox"/> Subsoil Blasting | 216 |

Trial Order Blank

(Kindly fill out if ready to purchase)

Have your nearest distributor supply me with

..... lbs. Giant Stumping Powder
..... lbs. Eureka Stumping Powder

NAME

ADDRESS

Write below your dealer's name.

Mechanical Power on the Farm.

Users of tractors, engines, pumping plants, motor trucks, automobiles, electric motors, and other mechanical farm power are invited to make this department an exchange of their experiences and troubles.

AUTO TRUCK SHOW IN SAN FRANCISCO.

What will probably prove to be the largest motor truck show ever held west of Chicago is the Commercial Motors Show, under the management of Ivan R. Gates, which is scheduled to occupy the Exposition Auditorium, in San Francisco, from April 3 to 7 and which will take up more than 51,000 square feet of floor space available there.

In addition to the many exhibits of the truck builders and dealers will be those of several departments of the United States Government, as well as those of a number of dealers in special equipment. Excursion rates will be advertised by the railroad companies and special efforts will be made to interest and bring prospective motor truck purchasers from remote points, thus allowing them the opportunity to compare the various makes and models best adapted for their needs.

Under the direction of C. R. Thorburn, Secretary of the California Home Industry League, a special and extensive exhibit of trucks built in California will be shown in a separate section. Another exhibit will be that of the War Department, which will show a number of trucks owned and operated by it in the field, and manned by soldiers from the Presidio or from one of the forts. It is planned to have one of the big trucks used in the U. S. Life Saving Service when hauling their

life boats, on exhibition and there will be much of general interest and entertainment.

Practically all of the leading makes of trucks will be represented and liberal space has been taken by those exhibiting them. Among those for which space has been definitely reserved are the International, Mack, Saurer, Stewart, Garford, Little Giant, Autocar, Indiana, Four Wheel Drive, Wichita Sterling, Kelly Springfield, Bethlehem, Kohler, Signal, Vim, Rainier, and Clemens, while in the "Made in California" section will be found the Doane, Moreland, De Martini, Hewitt, Ludlow, Kleiber, and Ralston.

The truck attachments now being introduced for the conversion of Ford and other light cars into efficient and economical one-ton trucks will occupy a prominent position and the exhibits already entered comprise many of the most important, including the Smith Form A truck, Hendricks worm drive, Ames, Huddford, Ralston, Brown and Holohan.

A large number of accessories will be exhibited and demonstrated, including the Champion and Autocraft spark plugs, Master and Miller Carburetors, Johnson Shock Absorbers, Nafra Warning Signal and a large exhibit of the Barnett Auto Body Company, consisting of models of auto bodies. A line of store, warehouse, and mill trucks, electrically and gasoline propelled, will be shown by Wood, Huddard and Brown.

More than seventy exhibits will be shown by more than forty prominent manufacturers, who have already availed themselves of this first opportunity to display their models in competition on the Coast and there are many more applications on file, awaiting assurances that their exhibits will arrive here in time.

READY ON TIME FOR IRRIGATION

[Written for Pacific Rural Press.]

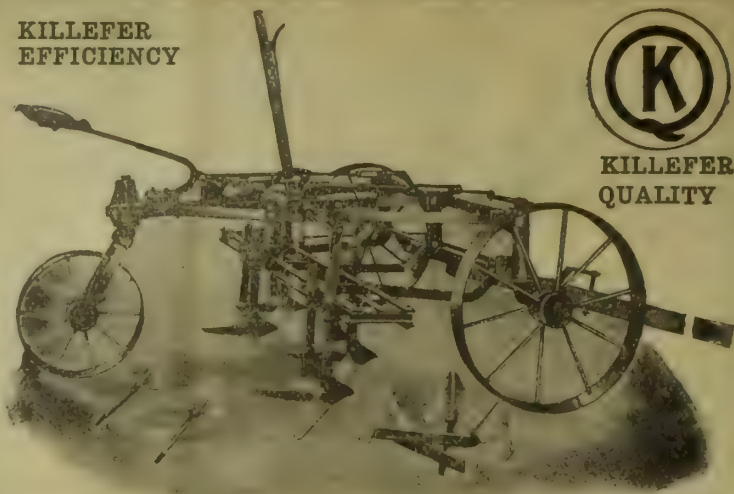
Where irrigation must be used in turn, there is often a great rush to get ready for it, and sometimes loss from not being ready. C. S. Lombard, Jr., of San Bernardino county, who handles 50 acres of oranges and 20 acres of alfalfa under a company pump, is not much worried about the preparation, for he has used a 10-25 tractor over three years and can keep his work up. We found him Feb. 3 cultivating fertilizer into a whole row at once of full-bearing oranges, using a 22-tooth spring barrow with the outside three teeth covered with sheet iron to avoid catching the limbs. The harrow was in three sections; the outside ones being connected to lever appliances with which the driver raised them without getting off the tractor, in making the short turns around tree-row ends.

The tractor is in use an average of one week of every month from February to October; and aside from the breaking of a mainshaft for lack of grease, there has never been any notable trouble, except once. In the summer of the second year, the motor

KILLEFER
EFFICIENCY



KILLEFER
QUALITY



Beet Cultivator

The frame of this Cultivator is made of one continuous piece of high carbon steel with a truss connecting it to the main castings, supporting the two steering wheels. This construction makes a cultivator that is almost impossible to break down in the center and in consequence the wheels are always in line and under easy control.

The lower frame or tooth bar is from the same quality of steel with a strong arm at each end, which connects with the lifting rod, allowing no chance for the frame to dip or run deeper at the ends. The seat is set back far enough to give an unobstructed view of the rows. The foot control of the front wheels is adjustable with a turn-buckle for taking up wear, and is very easy on the operator. A lock is provided for the rear wheel that holds it rigidly in line except on the turns. This is the strongest and best made Beet Cultivator for sale on the Pacific Coast.

The KILLEFER MANUFACTURING CO.

2209-21 Santa Fe Ave.

Los Angeles, Cal.

No Pit

is required with the

**KROGH
DEEP
WELL
TURBINE
PUMPS**

For bored or drilled wells from 10-inch inside diameter up; and for capacities of 250 gallons per minute up to 3000 gallons per minute. Built for pumping from any depth to and including 250 feet. They are absolutely water balanced and are self-aligning. More water can be obtained from such wells than with any other type. Built in belted or direct motor driven types. If interested, write for Bulletin.

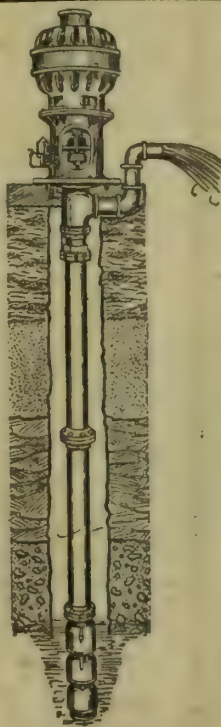


**Krogh
Manufacturing
Company**

SAN FRANCISCO, CAL.

Branch at

LOS ANGELES, CALIFORNIA



DEEP WELL TURBINES

No valves to pack or plunger to get out of order. For use in any well ten inches in diameter or over.

A complete line of irrigating pumps of all descriptions, horizontal, and vertical for belt drive or direct connection to electric motor.

Prices as low as are consistent with good quality and workmanship.



WRITE FOR CATALOGUE NO. 47.

BYRON JACKSON IRON WORKS, Inc.

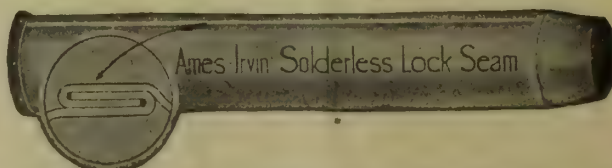
SAN FRANCISCO.

LOS ANGELES,

STOCKTON,

VISALIA

What About Your Irrigation Pipe?



Owing to conditions existing in the iron market and also to weather conditions, we suggest you order early.

AMES IRVIN IRRIGATED PIPE.

We have a complete stock, and can make immediate delivery. AMES IRVIN PIPE is solid and strong, with no holes in steel. Each sheet is edged-locked together, and then set down under 3500 pounds pressure. Such seams will not break or leak. Send for booklet giving complete information about Irrigation Pipe and its construction. Get it today.

AMES IRVIN COMPANY

8th and Irwin Street,

San Francisco

had to be overhauled and the cylinders rebored because so much dust had been drawn through the carbureter that compression was lost, due to scored cylinder walls. Now he has a dust remover.

In winter when not in use the tractor is stored in a shed, where it requires no further attention or expense. The tractor is considered too slow to do any hauling, but alfalfa is cultivated in the spring, using alfalfa points on the springtooth, and a couple sacks of dirt to make them dig deeper.

AUTO ENGINE FOR PUMP.

To the Editor: Do you think the slow-speed, high-power auto gas engine (for instance, Olds 6-cylinder 60) at all suitable for running a 10-inch centrifugal pump on a twenty-foot lift? I can get such an engine cheap, but I want to know if it really is cheap at, say \$150. Would an auto engine do on an 8-inch pump?—C. E. R., Meridian.

[Answered by Prof. J. B. Davidson, University Farm, Davis.]

To operate a ten-inch centrifugal single stage pump at a normal speed against a 20-foot head will require in the neighborhood of 35 h.p. To operate an eight-inch pump would require about 25 h.p. The original rating of the auto engine was perhaps based on a piston speed of about 1000 feet per minute. To get satisfactory results as a stationary engine this should be cut down to about 700 feet per minute, reducing the power

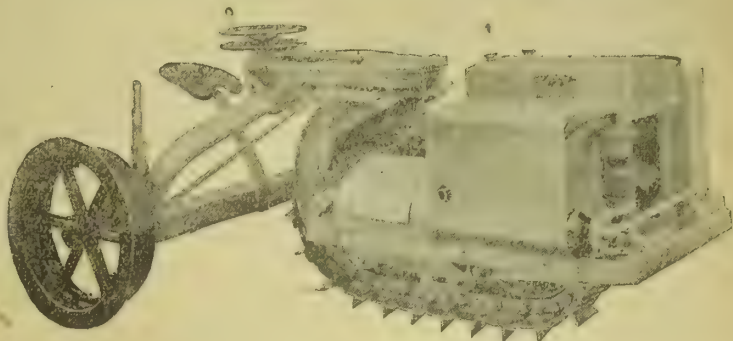
of the engine from 60 to about 40 h.p. We do not believe that it would be practicable, even if the engine be in good condition, to ask it to deliver more than 25 h.p. continuously. The success of the use of an old engine of this kind, even though it be a high-class engine, would depend to a large extent upon the skill and ingenuity of the man who will make the installation as well as the condition of the engine. Adequate cooling facilities must be provided and for the best results an automatic governor should be used. We would strongly recommend that if such installation is attempted that the engine not be heavily loaded and that a six-inch pump would be much more apt to be successful than an eight.

POWER NOTES.

The old Samson tractor had a solid tired narrow front wheel. In turning on soft ground with a load behind, there was often not enough grip on the front wheel to overcome the resistance of the load, in turning. More recent models have a sieve grip twice as wide as the old ones.

Notice the force feed of oil to the cylinders, which may be plugged up. This can be seen through the glass with the motor running. "Keep things tight and well oiled, that's all there is to it," says C. S. Lombard, Jr., of San Bernardino county.

The Supreme Tractor for Cultivating



THE

BEAN TrackPULL Six Horse Tractor

Is the Ideal Machine for Cultivating.

Cultivating time is here and every farmer and grower should know about the many advantages of using a Bean TrackPULL Tractor.

The Bean TrackPULL is very light, weighing only 2875 lbs. It pulls itself over soft soil, and does not sink in nor does it pack the soil.

How It Works

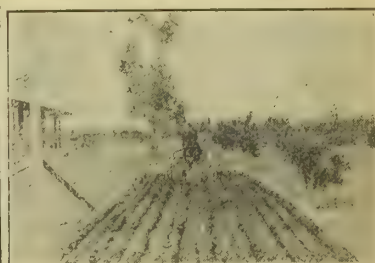
The Bean TrackPULL Tractor is built on a substantial track 12 inches by 32 inches on the ground. The power in the tractor pulls it along its own revolving track. That's why it does not pack the soil—gets long traction—turns easily to right or left—can make a complete turn in a 10 ft. circle, is most economical in operation and a boy can easily work it. When the hot days come your team loafs and you get only an average half-day's work done in 10 hours. The Bean TrackPULL will work day and night if you want it to, and does the work all day long that a six-horse team could do if they worked hard continually.

The Price is Only \$975.00

Bean TrackPULL Tractor construction consists of a 10 H. P. (at belt) Le Roi 4-cylinder vertical type—4-cycle motor. Equipped with Donaldson air clarifier, Bosch ignition, Perflex radiator, water cooled with centrifugal pump and fan, combination splash and pump lubrication, Hyatt roller bearings in track wheel sprocket and track rollers, six New Departure ball bearings in the transmission, running in grease and dust-proof. Gears are steel. No differential or other complicated mechanism.



Making figure 8 around trees and leaving no unfinished work.



Pulling a spring-track cultivator between rows 12½ feet apart.

Prompt Deliveries in April

Our entire output is sold a month in advance and we are working night and day. We are building a large addition to our factory to increase our capacity, so that we will be able to ship tractors that are ordered now, in April.

Mail the Coupon Today

We will gladly send you our folder, telling you more about the Bean TrackPULL Six-horse Tractor if you will fill in and mail to us the coupon below.

Bean Spray Pump Co.

211 West Julian Street
SAN JOSE, CAL.

Los Angeles Branch:
131-33 N. Los Angeles Street

Send coupon to Bean Spray Pump Co. Office nearest you.

BEAN SPRAY PUMP CO.,
211 West Julian St., San Jose, Cal.
131-33 N. Los Angeles St.,
Los Angeles, Cal.

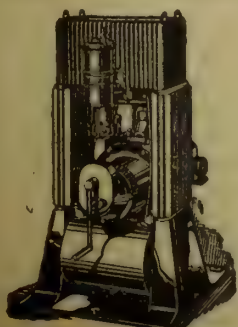
Please send me prices and the big folder with the complete story of the Bean TrackPULL. If I decide to purchase I will need my tractor about

Date 191..
I work acres.
I grow
(Name fruits or vegetables you produce.)
Name
St. or R. F. D.
City
County
State

LAYNE & BOWLER PUMPS

It is surprising how few owners of pumping plants realize the enormous saving that an efficient pumping plant will make. The sinking of a well is the first cost, but the pumping cost is continual; therefore the question of selecting the right pump should be duly considered beforehand. Our Engineering Department is at your service to assist you in permanently solving your pumping problems. Write for free Catalog No. 25.

Layne & Bowler Corporation
900 Santa Fe Ave., Los Angeles.
"WORLD'S LARGEST WATER DEVELOPERS."



Uni-Lectric
GASOLINE-ELECTRIC UNIT
LIGHTING SYSTEM

Electricity for Farm Homes

At one-third cost of juice from Power Company (this includes interest on cost of plant). It is the simplest and most economical plant on the market.

No Batteries - No Switchboard - No Rheostat

Will operate 60 lights 7½ hours for 11c. Will also operate electric fans, irons, small motors, etc. If your buildings are not wired, send us plans and we will give you full instructions so that you can wire them yourselves. Material furnished at lowest cost.

Karl A. Hedberg

ELECTRICAL ENGINEER.

104 Clay Street, San Francisco, Cal.

General Agricultural Review.

GRAIN AND HAY.

Rice day will be observed March 22 in Santa Clara county.

Alfalfa was being cut in Imperial county the first week of March.

Recent rains in Yolo county softened the crust that was damaging grain.

An alfalfa plant washed out by floods near Salinas has roots over eight feet long.

The Sutter-Butte Canal Co. is planting 150 acres of wheat on adobe to be irrigated.

Alfalfa is reported worth \$22 per ton baled in Imperial and San Bernardino counties.

The Pacific Rice Growers' Ass'n recently sold 25,000 sacks of rice to the Lake Charles, La., Milling Co.

Last year's Australian wheat crop was \$143,478,000 bushels or nearly 60 per cent greater than the average of five years.

A Ringling circus man is reported to be shipping hay from Australia through Oakland to the East because that is cheaper than American hay.

Twenty-four carloads of rice was shipped in one week recently from Colusa to markets all over U. S. via six transcontinental routes. Three cars went direct to Maine.

San Joaquin Valley is feeling a great hay shortage, due partly to unusual amounts shipped to Southern California and partly to the extra feeding due to grass shortage.

In Yuma Valley, Arizona, 28,283 acres were cropped in 1916 according to the U. S. Dept. Agr. and the area is likely to be 100,000 acres in 1917. Alfalfa was the most important crop.

About 200,000 acres of alfalfa are being planted in California according to one of the principal seed companies. About half of this will be additional acreage to last year's crop.

Although drouth reduced the Argentine rice crop by one-third last year, the production is estimated at 15,000,000 pounds. That country imports 100,000,000 pounds annually.

VEGETABLES AND FIELD CROPS.

Cotton planting was progressing the first week in March in Imperial county.

Sugar beet planting commenced at Brentwood early in March. There will be about 1,000 acres.

The first asparagus sent from Oakley district late in February brought \$2 per bunch in New York.

Stevinson, Merced county, farmers are preparing to plant 5,000 acres of beans, double last year's acreage.

Stanislaus county is to have about 100 per cent increase in bean acreage this year, about 20,000 acres of all varieties.

It is reported that over 2,000,000 bags of 1917 beans have been contracted in San Joaquin Valley for the British government.

A permit has been issued for the importation of 600 tons of potatoes from Victoria, Australia. Others are to follow, since that State has com-

plied with the regulations required by the U. S. Dept. Agr.

"It has repeatedly occurred that periods of high prices in certain crops are followed by seasons in which the same product is a drug on the market," says J. R. Hepler of the Wisconsin College of Agriculture.

An unusually large acreage is being planted to potatoes in the Kings River bottom in Fresno county. Horticultural Commissioner Roullard is urging seed treatment to avoid permanent infection of the ground with scab.

It is said that the Pomona Valley will enjoy a boom in the tomato business this year. Every canning factory in Southern California is contracting tomatoes from a big acreage. Ten dollars per ton is being paid against eight dollars last year.

Egyptian cotton is to cotton what cream is to milk, while Durango corresponds to skim milk and Mebane to whey, according to Smith Jackson of Imperial county, who grew five acres Egyptian last year. It is reported that 1,000 acres of this variety will be grown in Imperial Valley this year.

CITRUS AND SEMI-TROPICAL.

Black figs are being contracted at 6 cents in Yolo county.

Corona citrus growers are calling for white fruit pickers at \$2 to \$2.25 per day.

The San Fernando Fruit Growers' Ass'n has resolved that people taking oranges should be prosecuted.

Sixty foreign pickers for the Corona Lemon Co. recently struck for an increase from \$1.80 to \$2 per day.

Imports of figs from Portugal to U. S. last year were reported over 10,000,000 pounds or five times normal quantities.

Butte county is protesting against the proposed law to create a commission to establish maturity requirements for oranges, since they fear the chemical test. Tulare county people are fighting for the law.

A car of 1200 cases of olives was shipped Mar. 5 from the Fallbrook plant of the Cal. Associated Olive Co. to New York. Each car was labeled with a certificate that the olives complied with the standard of ripeness, etc., adopted in the office of the State Market Director.

DECIDUOUS FRUITS AND NUTS.

Pear spraying for scab is about complete in Napa county.

It is reported that the Georgia peach crop has been seriously frosted.

Tuscan and Phillips peaches have been contracted at Selma at \$42.50 per ton.

Fresno county peach contracts have been made at \$40 per ton; Lovells at \$25.

Buyers in Merced county are reported to have been trying to get cling peaches at \$35.

Damage to deciduous fruits in bloom is reported in various parts of the State, due both to frost and to rains.

Capay almonds were not hurt so much as feared, according to Horticultural Commissioner C. W. Gould, but apricots were damaged as much as 75 per cent in some cases.

Apricots, prunes, and peaches in the order named, were the leading fruits planted in Kings county in February, according to Horticultural Commissioner Fred K. Howard.

British breweries have been ordered to reduce their output two-thirds in order to save food value of grain, so California hop growers are pulling up their hops and planting to other crops, including peaches.

Practically no nursery stock being grown in San Luis Obispo county

and the inspection of imported nursery stock being practically over, Horticultural Commissioner S. V. Christensen estimates that the following acreage will be planted in the county this spring, such estimate being based on the total number of trees inspected, and an average of 70 trees being planted to the acre: Almonds, 2565; pear, 800; prune, 554; apricot, 279; peach, 147; apples, 82; mixed varieties, 67; walnut, 31; cherry, 12; grapes, 10; total, 4547. This total will increase the county's acreage of fruit and nut trees 44.7 per cent. The Paso Robles and Templeton districts lead in the planting of almonds; Atascadero in deciduous fruits.

GRAPES AND SMALL FRUITS.

Strawberry shipments are being made from Brawley this week.

The grape troubles which J. W. Jeffrey has been investigating at Dinuba cannot be properly termed "diseases," but seem due to low vitality.

A Sutter county vineyardist thinks local nurserymen are robbing him by charging \$35 per thousand for Thompson cuttings which could be bought outside the county for \$15 if the Supervisors would allow the importation.

The Agricultural Workers' Union has established an employment bureau in Fresno to bring vineyardists and workers together. Many of the workers are getting the \$2.50 per day of eight hours which the union is demanding.

The State Viticultural Commissioners are indignant at the following definition of their duties as proposed in a bill before legislature: "It shall be the duty of the board to collect and disseminate useful information relating to viticulture, including the best methods of growing raisin and table grapes and the best methods of handling the same. They shall also give attention to the question of what uses can be made of wine grapes, should the manufacture of wines containing alcohol be prohibited, and of how best to transform wine grape vineyards into other uses where the growing of wine grapes is not profitable. The board shall do all in its power to find uses for grapes which will be profitable to the growers without being harmful to the commonwealth." It seems to us that this would be welcomed by wine grape growers as one of the most constructive things the board could do.

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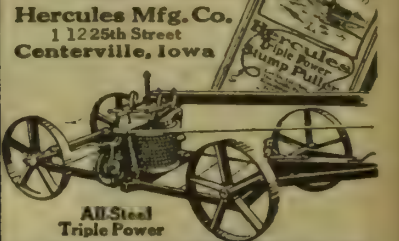
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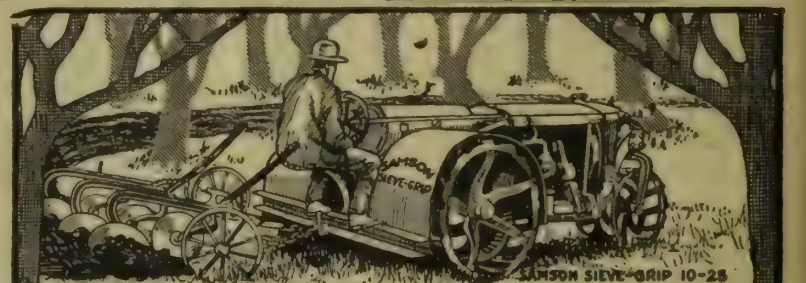


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Thousand-Headed Kale for Coast Dairies.

[Written for Pacific Rural Press.]

Thousand-headed kale will yield more good succulent feed for dairy cows in the coast dairy districts than anything J. D. Williams of Sonoma county has found in 30 years time, and that means a lot, too, for Mr. Williams has a reputation of being the original experimenter of the locality, but at the same time one of, if not the most, successful farmer and dairyman also.

Mr. Williams plants his kale just as soon as he can get onto the land in the spring after the heavy rains are over, usually some time in April. Various methods have been used in planting, but the most successful is to plant the seed in hills about three feet apart each way. Transplanting the plants from seed bed to field was tried, but proved expensive and tiresome, so hill planting is always the rule now.

This is done with a rope for marking and a short-handled hoe, with a three-foot mark to determine the right distance for the hills. Because the seed is small, and also cheap, several are usually planted in each hill and then thinned out when they appear above the ground.

Cultivation is practiced often enough to insure a good mulch at all times till the plants are so large that the cultivator can no longer be

driven down the rows. As the rows run both ways of the field, cross-cultivation is possible.

During the summer the plants do not grow very fast, but after the first rains they begin to shoot out leaves at a rapid rate and by October 1 they are large enough to begin feeding. From then on till December a wagon-load a day is hauled to the hill pasture where it is scattered around over the ground for the 30 head of milk cows and the young and dry stock.

As the cattle are not turned into the feeding yard till after the evening milking no bad flavor to the milk results, but the production of the cows immediately improves.

By cutting close to the ground with an ax an average yield of 50 to 60 tons of green feed per acre is secured in this manner and this is all utilized on the Williams ranch, the small flock of sheep which are maintained on the place consuming the stalks after the cows are through with them.

While some people object to thousand-headed kale because of the difficulty in ridding the ground of the roots and short stalks left after harvesting, Mr. Williams says he finds it very little work to get rid of them by plowing the land good and then harrowing into piles all that are left on the surface. These are carried off from the field and either burned or put into gulleys or ditches on the ranch.

OTHER COWS DRY, THESE FED SILAGE.

[Written for Pacific Rural Press.]

Slow filling and fine chopping materially increases the amount of corn silage that may be stored in a silo, according to T. B. Purvine of Sonoma county, who is an old silo user.

The measured capacity of Mr. Purvine's silo is 120 tons; but by setting his machine so the corn is cut three-eighths of an inch long and by cutting only about six hours at a time, he is able to put about 150 tons in his silo each year.

In few localities are the benefits of a silo more pronounced than on such ranches as Mr. Purvine's; for the hill pastures which are largely depended upon furnish a succulent feed for a comparatively short season, the custom usually practiced in the district being to dry up the cows between grass seasons. This is not necessary on the Purvine ranch; and when the silage is supplemented with oat hay and some concentrates, the cows produce as heavily during the winter months, when butterfat is high, as at any other time of the year.

A. A. Jenkins reports sale of a registered Duroc boar to G. S. Look, San Luis Obispo.

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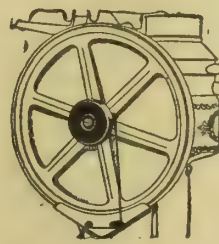
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A Criticism of the New Dairy Law.

[Written for Pacific Rural Press by Dr. H. B. Wintringham, Petaluma.]

In the new dairy law which went into effect October 1, 1916, certain exemptions were made for the applications of the tuberculin test. These exemptions cover all cows the milk from which is pasteurized or whose milk is sold to a cheese factory.

Practically all creameries pasteurize their cream; so also the milk dealers in all large cities. These people were doing this before the law was passed, as they had come to realize that in so doing they were increasing the value of their product.

These dairy cows whose product is pasteurized comprise approximately 90 per cent of the dairy cows in the State. The remaining 10 per cent which are subject to the tuberculin test are therefore much in the minority.

The prevalence of tuberculosis in California is an acknowledged fact; and the writer is not far wrong in saying that in the Sonoma and Marin section at least 50 per cent of the dairy cows are infected with tuberculosis. It is also recognized that in herds where 50 per cent of the animals are infected, it is practically impossible to clean them up by using the test and getting rid of the reactors.

This being the case, how is the testing of 10 per cent of the cows in the State going to clean up the tuberculosis? How is it going to keep the milk free from the tubercular bacillus, when the small herds subject to the test draw or replace most of their cows from the large herds infected with tuberculosis which do not have to test?

The \$10,000 spent by the State

Veterinarian's office for this work is money thrown away. The State Veterinarian is now asking for \$70,000 to carry on the work for the next two years.

It would seem to the writer that the logical attempt to clean up the State would be to increase the powers of the Dairy Bureau and provide the Bureau with a sufficient force of Veterinary Sanitarians to educate the dairymen to a realization of the benefits of sanitation and hygiene in connection with their establishments and to properly enforce the existing laws. Later, when conditions and standards had been raised in the dairies, the tuberculin test could be used and some real benefits derived from its use.

Until such time as the sanitary conditions of the dairies are raised the use of the tuberculin test as prescribed by law today is a farce and an unjust procedure.

[Dr. Wintringham evidently looks on the law as an attempt to clean up tuberculosis of cattle; but we believe that it was drawn up primarily to protect consumers from infection with tuberculosis from cattle. This seems all the more necessary from the prevalence of the cattle disease pointed out by this article. Yet it was not intended to infer that the Sonoma-Marine district, or California as a whole, is any worse infected than the other dairy districts of U. S.—Eds.]

NEVADA COWS MAKE GOOD RECORDS.

To the Editor: The Truckee-Carson Project Cow Testing Association completed its fourth month of testing in February with 16 cows out of 463 producing over 45 pounds of butterfat. Fewer cows have been tested this month than any since the organization was perfected; and the number of high producers has been proportionally less; but this is because most of the farmers breed for spring freshening. From now on, there should be a larger number of cows under test; and some very creditable records should be made, considering the fact that alfalfa hay is the sole feed used by most of the farmers. Owners of cows producing over 50 pounds for February were: A. L. Baker, 60.4 lbs. fat; F. E. Mobley, 54.2; W. A. Simmonds, 54.0; A. L. Baker, 52.3, 50.5; Ed. Morgan, 50.1; A. L. Baker, 50.0.

E. R. Eichner, Secretary.

Fallon, Nev.

The least cruel method of removing horns is by means of an application of caustic potash to the horn bottoms while the calf is from one to four days old. The hair is carefully clipped from the buttons and the moistened end of a stick of caustic potash is rubbed on the spot until the skin bleeds slightly.

Harry Clark, formerly with the Black Hawk Stock Ranch, is now looking after the Whitehall Estates Percherons. He reports sale of a two-year stallion by Londrocitos to Mr. Fleming of Lassen county; also nine fillies to the Pacific States Corporation of Tulare as foundation for a breeding farm. They also are by Londrocitos, the P. P. I. E. champion.



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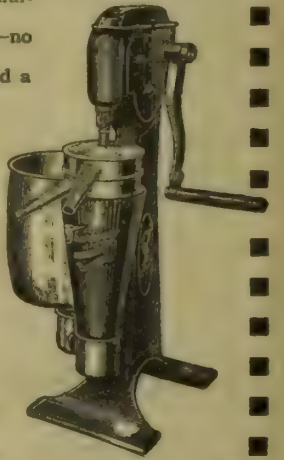
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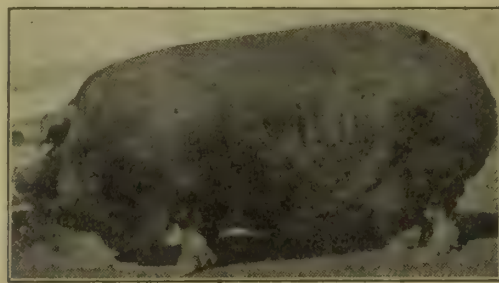
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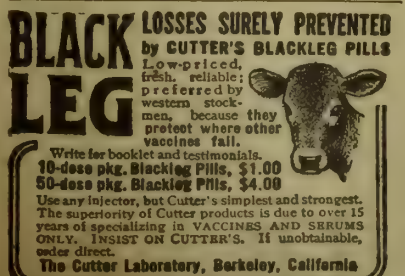
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VACCINATION FOR HOG INSURANCE.

[Written for Pacific Rural Press.]

If you have a few hogs sick with cholera, there may be twice as many infected, but not yet showing symptoms; for it takes the disease six to ten days to show up after infection. Giving such pigs the simultaneous treatment simply adds fuel to the fire and they are likely to die. They would probably die anyway, but the serum alone treatment may save them and cannot hurt them if done in a sanitary way.

That is why so many farmers in California are vaccinating their pigs as insurance against the disease. The fact that vaccination has introduced the disease into some herds is no argument against vaccination; but is an argument in favor of knowing the record of the virus and serum as well as of the man who injects it. Virus and serum bottles are all labeled with dates after which they must not be used. Absence of these labels and dates should be taken as proof that the stuff is dangerous. Only by the previous record of the man who is to vaccinate the pigs, and a knowledge whether the serum and virus have been kept consistently cold, will insure safety. Sometimes improper care of the serum can be detected by its sour smell and muddy color.

Eight to ten weeks old is the proper age to vaccinate, but if disease is in the herd, a serum alone treatment is advisable any time after the first three or four weeks, during which they usually seem immune. Sows are likely to abort if vaccinated with virus and serum within a month before farrowing.

FEEDING UNDERGRADE RICE.

To the Editor: I am offered some under-grade rice at about \$7.50 a ton, and planned to cook it and mix with under-grade corn, which I grind up here on the ranch. I can feed it to hogs or to my dairy milking cows or to my dry cows and calves. Will you advise me as to its feed value?

—W. B. W., Holt.

[Answered by Prof. J. I. Thompson,
University Farm, Davis.]

In answer to the attached inquiry, we are feeding rice experimentally now for the first time, and the experiment has not progressed far enough to enable us to tell anything about the desirability of this feed.

A good rice paddy has within 10 per cent as much feeding value as barley. The under-grade rice that your correspondent mentioned would be cheap at \$7.50 per ton, if it is a reasonable grade. If it is principally shriveled up hulls it would be high-priced at any cost.

We are feeding it whole to one lot and ground to another, but would expect most satisfactory results with rolled rice, and if facilities are available for cooking it, it would undoubtedly be safer to feed. Should prefer to feed it to market hogs until absolutely sure that no serious results will follow. Quite a number of people are feeding it in this part of the Sacramento Valley now, some to horses, others to cattle, and quite a number to hogs; and when it is used carefully as barley or corn would be used no unsatisfactory results have been reported. If changing from some kind of grain to rice I would prefer to make the change very, very gradually.

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For dairymen, farmers, feeders in all sizes and proportions.

For water, wine, oil, vinegar, acids, for storage, mixing, fermenting, pickling.

PIPE

For irrigation, power, water supply, in all diameters and for all pressures. Costs less than any other pipe of equal efficiency and endurance. Outlasts any pipe except cast iron.

All Remco products are manufactured to your order from clear, air-dried redwood. Their outstanding features are highest grade material, superior efficiency, maximum durability, true economy.

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REDWOOD MANUFACTURERS COMPANY,

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Redwood for Durability.

Breed for Butterfat



The quickest and surest way to make your Holstein herd more profitable in spite of high cost of feed is to introduce blood from high-testing ancestry.

My herd has a larger percentage of high-testing cows than any other herd in the State.

Beryl Clothilde Hengerveld,
Champion in Butter-fat Contest,
Sacramento, 5-day record, 21.11
pounds, test 4.7 per cent.

My young herd bull, DUTCHLAND SIR PIETERTJE CREAMELLE, has high-test breeding, and is transmitting this breeding to his sons and daughters. Five tested daughters have records averaging 21 pounds, all testing better than 4%. One of these, Clothilde Pontiac Creamelle, is California Champion 2-year-old, with a record of 22.52 pounds at 2 years 1 month; test 4.72%.

Have a few fine young bulls that will soon be ready for service.

WRITE OR CALL AND SEE THEM.

F. STENZEL

Breeder of High-Test Holsteins.

SAN LORENZO,

CALIFORNIA

KINGS COUNTY JACK RANCH

BREEDERS AND DEALERS

AMERICAN JACKS AND JENNETS.

LARGEST HERD IN THE COUNTRY

80 Head Jennets

40 Head Jacks

CAN SUPPLY YOUR WANTS AT ALL TIMES.

Write, or Come and See Them.

John Burrell, Proprietor

R. B., Box 73.

Hanford, Cal.

Sale Barn in Hanford near S. P. Depot.

Digester Tankage

Send for Sensible folder on feeding hogs

Western Meat Company

Animal Food Dept.

704 Townsend St.,

San Francisco

Live Stock and Dairy Notes.

[Livestock breeders all over the State are invited to send on postal cards, notes regarding their sales, State and County Fair intentions, new stock, etc.]

DAIRYING.

Ten Stanislaus dairymen in one day were served with warrants for arrest on account of dirty dairies recently.

Forty grade Jerseys were recently auctioned in Imperial Valley for an average of \$107.77. The total of 65 cows in the sale averaged \$90.

The 1917 Dairy Cattle Congress will be held Oct. 1 to 7 at Waterloo, Iowa. A trainload of dairy cattle are expected from the Pacific Coast.

A \$100,000 Dried Milk Products Co. has been organized with headquarters in San Francisco and with plants to be located in the dairy districts.

W. F. Mitchell of Packwood Farm, Visalia, reports an official record of 31.78 pounds butter made by Fidessa Elana without special preparation or feeding previous to the test.

We have received a bulletin from Sec'y C. S. Plumb, of the American Kerry and Dexter Cattle Club, showing that not over 500 head of these cattle exist in America. There are only one or two herds of these breeds in California.

C. M. McLouth and I. F. Dado of Orland have just received an importation of registered Jerseys from Kentucky containing 19 head of

heifers and a bull. All of the cows in milk will be put on semi-official test at once.

The Tulare Cow Testing Ass'n contained 19 cows that produced over 50 pounds fat in Feb. Of these, five belonging to W. J. Higdon are registered. Of these, one produced 92.34 pounds fat. Of the 19, six produced over 70 pounds.

A. A. Jenkins of Tulare reports the following registered Jersey sales: two cows to R. H. Brittingham, Tulare; one bull, son of Gertie's Lad, to G. S. Look, San Luis Obispo; a son of Gertie's Son's Victor to Jas. Vincent of New Pine Creek, Oregon.

The Guernsey Belladia owned by W. H. Dupee of Santee has completed a record of 19,631.9 pounds milk and 934.05 pounds fat in one year. This exceeds the previous California record by 180 pounds fat and is the highest record west of the Mississippi.

The J. S. Gibson Co. of Williams, Colusa county, recently sold registered Holstein bulls to the following parties: San Joaquin Land and Farming Co., Fresno; Roeber Bros., Delavan, and E. W. Stanton, Jr., Gridley. They are offering some fine young bulls out of cows with semi-official yearly records.

The Marin County Cow Testing Ass'n has recently been formed, including 1071 cows in Nicasio-Hicks Valley, Olema, Bolinas, Point Reyes, and Geronimo. R. Pedrotti from the Ferndale Cow Testing Ass'n will test these cows. Directors of the Ass'n are D. D. McIsaac, E. Fellipini, R. Thompson, R. Roy, V. Bloom, E. Dickson and R. Casarotti.

Jersey breeders of Glenn county are to meet at Orland March 17 to organize a Glenn County Jersey Breeders' Ass'n. There are now about 25 dairymen in that county who have purebred Jersey cattle and it is hoped that by the formation of an association the breeding industry may be put on a more permanent basis. Speakers from a distance will be present to aid in the organization work.

SWINE.

W. D. Trehitt of Hanford reports that an acre of mangel beets has furnished plenty of green feed for his Poland Chinas this winter.

At the Wasco Farm Center market hog auction Mar. 10, five carloads of hogs sold at \$12.70, \$12.62½, and \$12.50 to Los Angeles buyers.

A. B. Humphrey of Escalon has immunized his 225 purebred Berkshires and figures on immunizing the pigs periodically as they grow old enough.

The Tweede Land Co. of Glenn county is finishing a carload of purebred Berkshires for the market, and hereafter expect to market nothing but purebred hogs.

HORSES, BEEF, AND SHEEP.

The Tagus Ranch of Tulare county has just brought 25 registered Polled Angus bulls from Iowa.

W. Gill and Son of Exeter recently bought 27 purebred Hereford and Durham bulls which had just been shipped into Los Angeles from Mo.

T. S. Glide, proprietor of Hillcrest Stock Farm at Davis, has a fine lot of purebred but unregistered Shorthorn bulls among his spring offering. He states that feed conditions have been worse in his locality than he ever saw them before.

NEVADA LIVESTOCK NOTES.

I. M. Hamilton recently shipped 27 horses and four mules from Fallon to Susanville, California.

Sheep shearing in Humboldt county began this week. About 80 per cent of the clip has been contracted at 27 to 34 cents.

The Reinhart Ranching and Livestock Co. of Winnemucca recently bought a \$2500 purebred stallion from Easton and Ward of Burlingame, Cal.

The Truckee-Carson Cow Testing Ass'n contained 16 cows that produced over 45 pounds fat in February. A. L. Baker's grade Jersey produced over 60 pounds.

John H. Cazier and Sons of Starr Valley have recently purchased 75 registered Hereford heifers from the Hereford Corporation of Wyoming. The Caziers already had about 100 registered females, but were unable to supply the demand for registered bulls.

POLAND CHINAS SELL WELL.

The Kings County Poland China Breeders' Association held its 3rd semi-annual sale at the Hanford Fair Grounds on Wednesday of last week. Eighty-two head passed under the auctioneer's hammer, bringing \$2932.50, an average of \$40.00 per head, \$11 more than the average at the last sale. The top prices of the sale were \$200 for a 10-months boar, sired by Panama Black and consigned by F. D. Ross, and \$150 for a sow consigned by J. W. Bernstein and bred to his boar President. Both went to Geo. H. Loughery of Visalia. A three-months granddaughter of Candy Kid and President was consigned by W. Bernstein "for ladies only" and was bought by Mrs. T. J. Gilkerson for \$82.50.

Other buyers were: Thos. Carlyle, Sanger; B. D. Crum, W. T. Dice, Fowler; L. M. Essick, Lemoore; H. D. Eberle, Tipton; W. S. Hubbard, R. F. Guerin, Visalia; A. F. Lewis, Riverdale; G. H. Loughery, Visalia; O. L. Linn, Mdesto; H. I. Marsh, Modesto; J. K. Macomber, Tipton; W. F. Mitchell, Visalia; F. Mathos, Traver; H. L. Stephens, Tipton; Vossler Bros., Porterville; Geo. Farmer, Hanford; Frank Johnson, Hardwick; W. C. Ramos, Lemoore; W. Bernstein, Hanford; C. F. Starr, Lemoore; F. D. Ross, Hanford; Mrs. T. J. Gilkerson, Lemoore; J. A. Crawshaw, Hanford. Auctioneer Ben Rhoades of Los Angeles was assisted by T. J. Gilkerson of Lemoore. An excellent lunch, in which roast pork figured largely, was served.



"Good to the Last Drop"

Raise Your Calves on Blatchford's Calf Meal and Sell the Milk

More calves have been raised on Blatchford's Calf Meal than on all other milk substitutes combined.

100 lbs. makes 100 gallons of milk substitute, costing only one-third as much as milk. Prevents scouring and insures the early maturity of sleek, handsome calves.

It is steam-cooked and no trouble to prepare or use.

Write for Pamphlet "How to Raise Calves Cheaply and Successfully with Little or No Milk." At dealers, or Coulson Poultry & Stock Food Co., Inc., Petaluma.

BAKER'S TRACELESS HARNESS



Best plow rig. NO WHIFFLETREES—NO TRACES. Handiest farm harness.

Indispensable in the orchard with special fitness for all low down work. You can hitch closer to your load, plow and cultivate close to the row and save all the worry to man and team. No weight of whiffletrees for man to lug. Everything clear behind team. Use our outfit and save your trees. Highest endorsement of farmers and fruit growers.

Write now. B. F. BAKER CO., NUMBER (1920) MAIN ST. BURNT HILLS, N. Y.

BLACK Percheron Stallion

9 Years old. Weight 1900 lbs. Broken to Harness. Sound.

A Good Breeder.

PRICE, \$350.

For further particulars, address

HENRY WHEATLEY
NAPA, CAL.

FOR SALE!

At a Bargain

One of the best and most productive ranches in the State of California is offered for sale. 87 Acres of rich sediment land, located north of Santa Clara, 1 mile from station, and 1¼ hours from San Francisco. The ranch is all level, but with sufficient slope for irrigation. It is fenced and cross-fenced, and divided into 8 fields, each supplied with water in concrete troughs.

The improvements consist of a good hard-finished house of 7 rooms, well built and substantial with modern plumbing and other conveniences. Large horse barn, good dairy barn, sheep, pig and poultry houses, cottage for help, yards, corrals, etc. All in perfect condition.

The water supply on the place is excellent; besides a flowing artesian well, which supplied all buildings and fields without pumping, the ranch borders on a stream of permanent running water, from which the whole place is irrigated. The price of this valuable property is only \$27,500. Terms of payment can be arranged. Tools and implements included.

This is one of the best and cheapest ranches in the State. Rigid investigation invited.

Wm. P. Wright

Sole Agent

MOUNTAIN VIEW,

Santa Clara Co., Calif.

Hillcrest Stock Farm. Shorthorn Cattle, Shropshire and Merino Sheep



King Lancaster, sired by King Edward, grand champion bull State Fair, 1909-10-11.

Shorthorn Bulls for Sale, sired by such noted bulls as King Lancaster, Knights Perfection, Greenwood Knight and Greenwood King. Nearly all offsprings of the famous King Edward.

These Bulls are conceded to be the best offering ever made from the Hillcrest Stock Farm.

For Particulars Apply—

T. S. GLIDE
Proprietor.

Davis, California

ORMONDALE SHORTHORNS



Golden Goods, Jr., Herd Sire.

Our 1916-17 offering of yearling bulls is small but select. They are all heavy boned, solid red in color and of Scotch and Scotch-topped breeding. Suited for either the range grower or breeder.

DUROCS.

Our Durocs are of the big type, with big bone, well-arched backs and carrying good hams.

We have a few head of service boars, now ready for service, solid red in color and out of prize-winning animals.

Every Animal Positively Guaranteed

Whether you buy or not, visit our ranch, 7 miles from Palo Alto on Woodside Road. We welcome inspection. Prices and pedigrees on application.

Shorthorn Cattle
Duroc-Jersey Swine

ORMONDALE CO.

R. D. No. 1
Redwood City,
California.

CALIFORNIA POLAND CHINA

The California Poland China Breeders' Ass'n was organized Mar. 6 at Hanford. Its first officers are: W. F. Bernstein, Hanford, president; O. L. Linn, Modesto, vice-president; R. H. Whitten, Los Angeles, secretary-treasurer; C. W. Hanna, Riverside; N. Hauck, Alton, Humboldt

county; H. I. Marsh, Modesto, and M. Bassett, Hanford, directors. Its next meeting will be at Davis during Farmers' Week. Dues are \$1 per year and each member is to contribute a hog to be auctioned at the State Fair. The first \$25 from each hog is to go into the Ass'n treasury. The Ass'n had 46 members by Mar. 10.

Napa Hospital Wins the Dairy Prize

Five grade cows in the dairy herd of Napa State Hospital are credited with the highest average production of butterfat for the month of February, for cows entered in the California State Dairy Cow Competition, viz., 67.665 pounds butterfat (credit being given for cows entered below full age in accordance with rule No. 4 governing the Competition); actual average production 63.696 pounds. The Napa State Hospital is, therefore, entitled to the Pacific Rural Press prize for this month.

Four other herds competed for the Pacific Rural Press prize during the past month for the highest production of 5 grades, the results being as follows: F. Stenzel, San Lorenzo, credited production 63.399 pounds butterfat, actual production 59.182 pounds; J. H. Guill, Jr., Chico, credited 51.675 pounds, actual 51.604 pounds; Hollow-Hill Farm, Colton, credited 51.152 pounds, actual 49.090 pounds; K. W. Abbott, Milpitas, credited 47.089 pounds, actual 45.102 pounds.

None of the cows included in the average production for the Napa State Hospital or Abbott herds competed for the prizes awarded to these herds for the months of November and January respectively.

F. W. Woll,

University Farm, Davis.

Supt. of Dairy Testing.

LIVESTOCK DIRECTORY.

SWINE.

Poland Chinas.

SEND FOR FREE CATALOG—Finest ever issued. Tells of the famous Whitten Ranch money-making strain of Big Type Poland-Chinas. Make greatest weight in shortest time at lowest cost topping market at 225 lbs. in 6 months. 600 head both sexes, all ages, reasonable prices. Satisfaction guaranteed. Ranch in Tulare County, but address owner, R. H. Whitten, 610-A Security Building, Los Angeles.

GRAND CHAMPION SUPERBA POLANDS—A few choice spring Superba boars ready for service. Sows bred to Superba for fall litters. Prices reasonably low. Rough's Greenfields, Arlington Station, Riverside, Cal.

BOARS of serviceable age all sold. We have a few choice gilts bred to John Henry; an exceedingly choice boar. Also have a fine lot of Fall pigs, either sex. Bar N Ranch, E. A. Noyes & Son, Props., Sutter, Calif.

POLAND-CHINAS—Bred gilts, \$15; young boars, \$10 and \$15; bred sows, \$25. Weanlings, either sex, \$6. Registered and crated, purchaser to return crates. E. A. Hall, Watsonville, Cal.

REGISTERED POLAND CHINAS—Young boars ready for service. Weanling pigs, both sexes. Prices attractive for quick sales. J. H. Cook, Paradise, Cal.

LAKESIDE STOCK FARM POLAND CHINAS are money-makers. Satisfaction or money refunded. Geo. V. Beckman & Sons, Lodi, Cal.

POLAND-CHINAS—Big type combined with quality. Choice bred sows, gilts, boars. W. D. Threlkitt, Box 82A, Hanford, Cal.

POLAND CHINAS—Big type. Shoats, either sex, or in unrelated pairs. O. L. Linn, Linview, Route A, Modesto, Cal.

REGISTERED POLAND CHINA SWINE—Prize-winners. Finest stock in the State. \$20 up. M. Bassett, Hanford, Cal.

POLAND-CHINAS—Stock for sale at all times. We please you or refund your money. W. A. Young, Lodi, Cal.

BIG-TYPE POLAND CHINAS—Stock from the best herds of the Middle West. N. Hauck, Alton, Humboldt Co., Cal.

REGISTERED POLAND-CHINAS and Duroc Jerseys. Cholera immune for life. T. H. Beckman, Lodi, Cal.

POLAND-CHINAS—Large type. The Browning Stock Farm. W. H. Browning, Woodland, Cal.

DEACON RANCH POLAND CHINAS—Prize winners. Young stock reasonable. Box 27A, Davis, Cal.

KNOB HILL STOCK FARM—Registered Poland-China Swine. A. M. Henry, Farmington, Cal.

AMAWAGE FARMS—Poland-China hogs and Holstein cattle. G. H. Loughery, Visalia, Cal.

POLAND-CHINAS—Prize-winners. Money-makers. W. Bernstein, Hanford, Cal.

REAOAKS RANCH herd of registered Poland Chinas. W. J. Hanna, Gilroy.

REGISTERED POLAND-CHINA HOGS—J. A. Clark, R. 4, Lodi, Cal.

Berkshires.

GRAPEWILD FARM BERKSHIRES—World's Fair Grand Champion Grand Leader 2nd heads our herd, not only himself a champion, but the sire of Champions. At the 1916 California State Fair his daughters won first in all of the senior sow classes, including the Grand Champion Sow. At the 1916 Oregon State Fair a Grand Leader sow was Junior Champion. We are offering a number of choice boars of exceptional breeding and are also booking orders for Fall pigs. A. B. Humphrey, Escalon, San Joaquin Co., Cal.

REGISTERED BERKSHIRES—Special offering. Three service boars at prices to move them quick. Write us. Imperial Stock Farm, Morgan Hill, Cal.

ROSE CREST BERKSHIRES—Rivals Champion Best blood. Open and bred gilts. Service boars. F. L. Hall, Ferris, Cal.

CHOLERA IMMUNE BERKSHIRES—August Masterpiece boars September values. Bachelor boars and November Ames Rival boars, \$20 to \$35 each. Fall gilts, \$25. All registered and from choice dams. Prices for March only. W. H. Waugh, Riverside, Cal.

REGISTERED BERKSHIRES—Progeny of Improver B. Young stock now ready for sale. Start your herd with breed and strain of established reputation for California conditions. Geo. G. Meckfessel, Berlin, Cal.

BERKSHIRES—I have one of the best herds on the Pacific Coast, including Grand Champion Sow, Reserve Grand Champion Boar under one year, Third Aged Boar, etc. Frank A. Brush, Santa Rosa, Cal.

SEPTEMBER BERKSHIRES and O. I. C. gilts, \$12.50. Also white boar, 6 months, \$15, and 17 months \$25. All thoroughbreds. Grade pigs, \$2.75 up. Cedarhurst Ranches, Route 2, Sacramento.

IMMUNIZED NORMANDY BERKSHIRES.—Good type. Breeding stock, any age, for sale at all times. Cast iron guarantee. Arlington Smith, Visalia, Cal.

BERKSHIRES—Bred sows and weanling pigs. Write for prices and pedigrees before buying. Butte City Ranch, Box P, Butte City, Glenn Co., Cal.

CARRUTHERS FARMS BERKSHIRES—Cholera immune. Second annual sale August 2, 1917. Mayfield, Cal.

30 REGISTERED BERKSHIRES—Boars and gilts for sale. J. H. Benedict, Lemoore, Kings county.

HOPLAND STOCK FARM—Registered Berkshires. Prices on application. Hopland, Cal.

REGISTERED BERKSHIRES—Geo. M. York, Modesto, Cal.

Duroc-Jerseys.

LARGE NUMBER of excellent young boars ready for immediate service. Weanlings of either sex. Sired by Joker, first prize boar at Wisconsin State Fair, 1915. Sows and gilts sired by Iowa Wonder and bred to Joker and Sunnydale's Chief. For prices and further information write, Geo. A. Smith, Corcoran, Cal.

FIRST PRIZE HERD—Headed by Uneeda Wonder, 2nd prize boar at Nebraska and a winner at Omaha, 1916. Grandson of Crimson Wonder Again and H. A.'s Queen. Entire offering of Spring pigs will be from 1st or 2nd prize-winners. Inquiry solicited. Haden Smith, Box 84D, Woodland.

REGISTERED DUROC-JERSEYS—Service boars from prize-winning stock are money-makers. They grow faster. New England California Corporation, Ripon, Cal.

CROLEY'S BALANCED HOG FEED—the cheapest feed to fatten hogs. Write Geo. H. Croley Co., Inc., Live Stock Supplies, 631-637 Brannan St., San Francisco.

DUROC JERSEYS—Herd boars. E. N.'s Colonel and Tulare Boy. Sweepstakes winner at Fresno, 1915. Choice breeding stock. J. P. Walker, Visalia.

RANCHO RUBIUS DUROCS—All sold except a few July and September gilts. Extra good. Write for prices. Elmer Lamb, Ceres, Cal.

DUROC JERSEYS—Sow and boar pigs from Registered Stock. Low prices. Delta Farm and Live Stock Co., Colton, Cal.

REGISTERED DUROC-JERSEYS—All from prize-winning stock. Both sexes at all times. W. P. Hackey Gridley, Cal.

REGISTERED DUROCS of guaranteed breeding. All ages. Weaned pigs, \$10. H. E. Boudier & Son, Napa.

HEAVY BONED DUROCS—A few service boars for sale. Ormondale Co., Route 1, Redwood City, Cal.

DUROCS—Defender, Cantic B and Golden Model strain. The big type. Allen Thompson, Tulare.

REGISTERED DUROCS—Crimson Wonder stock. Young duroc, both sexes. L. D. Collins, Denair, Cal.

REGISTERED DUROC-JERSEY SWINE—Both sexes. Big-boned type. B. F. Kendall, Hardwick.

CURTIS DUROCS of either sex at all times. E. C. Curtis, Napa, Cal.

WINTON DUROC-JERSEY FARM, Winton, Cal.—High-class pure-bred hogs both sexes, any age.

BIG TYPE DUROCS—Quick maturing. Easy keeping. Frederick M. Johnson, Napa, Cal.

DON HERMANOS REGISTERED DUROCS—Duveneck & Pickersgill, Ukiah, Cal.

DUROC-JERSEY REGISTERED HOGS—River Bend Farm, St. Helena, Cal.

DUROCS—Big type, both sexes for sale. Ed. E. Johnson, Turlock, Cal.

REGISTERED DUROC-JERSEYS—S. S. Southworth, Napa.

Yorkshires.

LARGE YORKSHIRES—Choice spring boars, gilts, and weaned pigs from Champion sow P. P. I. E., or from breeding of champion boar and sow, Sacramento, 1916. If you see them grow you will like them. Riverina Farms, Paradise Road, Modesto, Cal.

LARGE YORKSHIRES—The ideal hog for the progressive farmer. Young stock for sale. A. L. Tubbs Co., Calistoga, Cal.

Chester Whites.

BILLIKEN HERD OF CHESTER WHITES—The type that is ready for market in 7 months or less. The easiest feeders of all. Buy now before prices advance. The price of market hogs is going out of sight. Twenty bred gilts due to farrow in May and June. Forty pigs, both sexes, four months old. Write for Circular and Booklet today. C. B. Cunningham, Mills, Cal.

REGISTERED IMPROVED CHESTER WHITES—Grizzly Bear Ranch, East Auburn, Cal.

Essex.

LITTLE BLACK ESSEX—Service boars and weanlings. Only herd in the State. Limited supply. Yolo Essex Herd, L. W. Millsap, Yolo, Cal.

Hampshires.

BELLA VISTA HAMPSHIRE SWINE—from prize-winning stock. J. W. Henderson, First National Berkeley.

DAIRY CATTLE.

Holsteins.

FOR SALE—From 1 to 100 extra fine, straight, well-marked, light colored, highly bred registered Holstein heifers from 6 to 18 months old. They are rich in the blood of King of the Pontiacs, Pontiac Korndyke, Hengerveld De Kol, Rag Apple Korndyke 8th, King Segis and other most celebrated sires of the breed. Prices very reasonable. Write Geo. A. Smith, Corcoran, California.

REGISTERED HOLSTEINS—Herd sire King Korndyke Hengerveld Ormsby 7th, 86623. His full sister as Junior 3-year-old made 32.04 lbs. butter in 7 days. The record of his dam and his sire's dam averaged 30.98. George Kounias, Modesto, Cal.

CHOICE HIGH GRADE HOLSTEIN COWS and heifers—Springers and open, 15-18ths pure. Heavy producers and of correct dairy conformation. Priced right. In calf to 31-lb. Bull. Write or wire Kenmoor Farms, Oconomowoc, Wisconsin.

REGISTERED HOLSTEINS—Grandsons of King Segis and of world's record cow Creamelle Vale. Will build up the production and value of your herd. Write or call and see them. F. H. Stenzel, San Lorenzo, Cal.

WANTED—14 or 15 young high grade Holstein cows, tuberculin tested and good for at least 800 lbs. butter. To freshen in April and May or September and October. C. E. La Boyeaux, R. F. D. 1, Arcata, Cal.

TULARE GUERNSEY AND HOLSTEIN FARM is offering young bulls of both breeds. Excellent breeding. Prices reasonable. W. J. Higdon, Tulare, Cal.

THE MCCLLOUD RIVER LUMBER CO. McCloud, Cal.—High-class thoroughbred Holstein bulls for sale. Write for prices and pedigrees.

J. H. HARLAN, WOODLAND, CAL.—Breeder of Registered Holsteins. Sold out at present. Watch for announcement on King Valdessa.

PACKWOOD FARM HOLSTEINS—Fine young bulls of serviceable age out of tested A. R. O. cows. W. F. Mitchell, Visalia.

FOR SALE—Two registered Holstein cows with A. R. O. records. Write for particulars. J. W. Benoit, Route C, Modesto, Cal.

THE HENDERSON CO.—Breeders and importers. Registered Holsteins. Sacramento Bank Bldg., Sacramento.

BREEDERS OF REGISTERED HOLSTEIN CATTLE and Berkshire pigs. Whittier State School, Whittier, Cal.

REGISTERED HOLSTEINS—A. W. Morris & Sons, Corp., Importers and Breeders. Woodland, Cal.

CREAMCUP HERD—Registered Holsteins Pontiac bull calves. M. Holdridge, Modesto, Cal.

SUNNYSIDE HERD—Registered Holstein cattle. R. F. Guerin, R. 3, Box 58, Visalia.

REGISTERED HOLSTEIN CATTLE—E. E. Freeman, Route B, Modesto, Cal.

REGISTERED HOLSTEIN BULLS for sale. Sunnyside Ranch, Willits, Cal.

REGISTERED HOUSTEN BULLS for sale. C. L. Morse, Route B, Modesto, Cal.

BREEDERS OF REGISTERED HOLSTEIN CATTLE—McAlister & Sons, Chino, Cal.

REGISTERED HOLSTEIN BULLS, \$50 to \$150. Glorieta Stock Farm, Woodland, Cal.

GOTSHALL AND MAGRUDER—Breeders of Registered Holstein-Friesians. Ripon, Cal.

CHOICE HOLSTEIN BULLS for sale. No females. Millbrae Dairy, Millbrae, Cal.

REGISTERED HOLSTEIN-FRIESIAN CATTLE—J. M. Campbell, Escalon, Cal.

BREEDER OF HOLSTEIN-FRIESIAN CATTLE—Dr. Ben Stetson, Napa, Cal.

A. R. O. HERD OF HOLSTEINS—Alex. Whaley, Tulare, Calif.

Jerseys.

JERSEY BULLS AND BULL CALVES—Sons and grandsons of 2 and 3-lbs. cows. None better. Cheap for quality. N. H. Locke, Lockeford, Cal.

VENADERA HERD OF JERSEYS offers calves from Register of Merit Cows with official yearly records. Write for list of bulls. Gny H. Miller, Route 1, Modesto, Cal.

REGISTERED JERSEYS—Young bulls and bull calves. T. E. Purvine, Petaluma, Cal.

CHOICE REGISTERED JERSEY FEMALES.—Fresh and Springers. Breeding and individuality the very best. McLouth, Orland, Cal.

BREEDER OF REGISTERED JERSEY CATTLE—Duroc Swine. Young stock for sale. W. J. Hackett, Ceres, Cal.

JERSEY BULLS AND HEIFERS from Register of Merit Cows for sale. C. G. McFarland, R. 2, Tulare.

YOUNG REGISTERED JERSEY BULL Calves at reasonable prices. O. J. Ames, Oakdale.

JERSEY BULLS—Sons of Gertie's Lad and Gertie's Son's Victor. A. A. Jenkins, Tulare, Cal.

JERSEY BULLS from Register of Merit cows. C. D. Hayworth, Modesto, Cal.

Guernseys.

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SHORTHORNS—Herd headed by grandson Whitehall Sultan. Calves sired by \$10,000 Prince Imperial for sale. One or a carload for sale. Get our prices before buying. Butte City Ranch, Box P, Butte City, Glenn Co., Cal.

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BREEDERS OF REGISTERED SHORTHORNS—Milk strain. Choice young stock for sale. John Lynch Ranch, Box 321, Petaluma.

REGISTERED AND UNREGISTERED—Shorthorn bulls for sale. Paicines Ranch Co., 320 Sharon Bldg., San Francisco.

INNISFAIR DAIRY SHORTHORNS—Registered young bulls for sale. Alexander & Kellogg, Susan, Cal.

HOPLAND STOCK FARM—Registered Shorthorns. Prices on application. Hopland, Cal.

REGISTERED HEREFORDS—H. H. Gable, Diamond G Ranch, Esparto, Cal.

SIMON NEWMAN CO., Breeders of Registered Herefords. Newman, Cal.

GEORGE WATERSON—Breeder registered Herefords. Bishop, Cal.

SHORTHORNS—Carruthers Farms, Mayfield, Cal.

SHORTHORNS—Fair Oaks Ranch, Willits, Cal.

SHEEP AND GOATS.

F. A. MECHAM ESTATE, Petaluma, Cal.—Breeders and Importers of Shropshire, Rambouillet and American Merinos, both sexes. Also Red Polled cattle. Take electric car at Petaluma or Santa Rosa for Live Oak Ranch.

SHROPSHIRE—Ewes and Ewe lambs for sale. International winner heads flock. Butte City Ranch, Box P, Butte City, Cal.

KAUPKE BROS., WOODLAND, CAL.—Breeders and Importers of Hampshire sheep.

DORSETS AND ROMNEYS—Dorset ram lambs for sale. John E. Marble, Los Angeles.

BISHOP BROS., SAN RAMON, CAL.—Breeders and Importers Shropshires.

CHAS. KIMBLE—Breeder and Importer of Rambouillets. Hanford, Cal.

HORSES AND MULES.

FOR SALE—French Imported Percheron stallion; dapple gray, 6 years old; weight, 2150 lbs. Pedigree can be had by corresponding with C. W. Koch, owner, Susan, Cal.

REG. PERCHERON STALLION for sale. Dapple gray, 9 years, 1900 lbs. For particulars, address Box 236, Vallejo, Cal.

REGISTERED SHIRES—Black Hawk Stock Farm, Importers and Breeders, Easton & Ward, Proprietors, Burlingame, Cal.

MISCELLANEOUS.

SAN FRANCISCO LIVESTOCK EXPORT CO., Eugene R. Croley, Manager, solicits foreign orders for purebred registered and merit breeding animals and fowls. California has great diversity of climatic and other conditions that enable us to select animals that have been raised under conditions similar to those of the location for which they are intended. We should be informed regarding these conditions and be allowed ample time to make selections. Nearly all disappointments in buying afar are the result of insufficient information as to conditions or to lack of time for proper selection. Our plan and terms for "raising animals to order" to fit into peculiar foreign conditions is worth investigating. References: Dun or Bradstreets, or San Francisco banks. Office, 319 Underwood Building, 525 Market St., San Francisco.

ATTENTION, STOCK MEN! Population increasing, meat decreasing. Greatest rush in years for Government and State land. Free homes. Safe investments without residence. School, State, Indian, Government lands. Now available. You have nine rights now worth \$1,000 each. Booklet and 640 acre Homestead Circular Free. Write Joseph Clark, Sacramento, Cal.

CROLEY'S BALANCED DAIRY FEED—the cheap milk producer; and Croley's Calf Meal—the best California calf raiser. Geo. H. Croley Co., Inc., 631-637 Brannan St., San Francisco.

Winter Lamb Feeding Experience.

[Written for Pacific Rural Press.]

In view of the fact that most everybody who has had anything to do with sheep for the last year or two has made money, it is not surprising to learn of new ways being evolved to get in on some of the profits of these "golden-hoofed" ani-

which in this case was extraordinarily big. But it will also be noted that an excessive price was charged for all of the feed except salt, so we may assume that the excessive spread is offset by high-priced feeds which were used and which are by no

December 17, 1916:		
150 lambs, wght. 12,970 lbs. \$7 per head.....		\$1950.00
320 lbs. hay per day for 60 days.....	19200 lbs. @ \$17 per ton	162.20
100 lbs. silage per day for 60 days.....	6,000 lbs. @ \$5 per ton	15.00
6750 lbs. corn @ \$2.50 per cwt.....		168.75
4 sacks salt @ 75c.....		3.00
Total cost.....		\$1398.95
February 17, 1917:		
Sold 149 lambs, wght. 15,995 lbs. @ \$10.25 per cwt.....		\$1639.00
January 17, 1917:		
Killed one lamb, wght. 84 lbs. @ \$10.25 per cwt.....		\$ 8.23
Total receipts.....		\$1647.23
Profits above feed.....		\$ 248.28
Cost per pound of gain—\$0.1122.		
Cost of feed for 60 days—\$348.95.		

mals which have contributed most in a financial way to the larger handler in the past in California; but which may find a new way of benefitting the smaller farmer if further experience proves the desirability of such practices as given below.

The ranch where this experiment was conducted is situated in one of the interior valleys, dairying being the chief occupation of the owner. In December of last year he found that he had a surplus of alfalfa hay, corn silage, and shelled corn. As sheep looked attractive to him, he built a low galvanized iron-roofed shelter in one of his corrals, rigged up miniature feed troughs and watering troughs, and bought 150 Merino lambs, the total weight of which was 12,970 pounds, or an average of 86.4 pounds per head. The total cost of the lot was \$1050, or \$7 a head delivered on the farm.

They were immediately placed in the small corral which had been set aside for them. The corral would have cared for 1,000 head just as well, according to the owner, for it was found that they did not need much more room than that provided by the shelter. Drinking water was within easy access in a trough close to the feeding shed.

The ration fed and eaten was 320 pounds chopped alfalfa, 100 pounds silage, and an average of about 112 pounds of corn a day, together with all the salt that they cared for.

After receiving this care and feed for 60 days they were sold Feb. 17, one lamb having been killed on Jan. 17 that weighed 84 pounds, and the other 149 having a total weight of 16,079 pounds, or an average of almost 108 pounds, a gain per lamb of approximately 21.5 pounds.

As shown below, the cost per pound of gain on the lot was at the rate of \$11.22 a hundred, which would show financial disaster if it were not for the spread in the market between buying and selling time,

means seasonal averages. The experiment is chiefly of interest as it brings in feeds which have not previously been used extensively in this State. They were proclaimed by the buyer to be as prime a lot of lambs

as he ever saw in the Middle West. A resume is given above.

G. H. Loughery is laying substantial foundations for general stock raising on his 1065 acres of river bottom land near Visalia. He expects to raise Shorthorn and Holstein cattle, Shropshire sheep, and Poland China hogs. The entire place is being crossfenced, buildings erected, and ground broken for several hundred acres of alfalfa. Only purebred stock of the best blood lines will be used. Mr. Loughery has been a prominent buyer at the recent auction sales and already has some excellent foundation stock.

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Purebred livestock sales given special attention
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Gaited Kentucky Saddle Horses
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Champion Ram P. P. I. E.

San Ramon Shropshires

WINNINGS P. P. I. E., 1915.

Aged Ram, First and Second. Yearling Ram, First Ram Lamb, First, Second, and Third. Champion Ram, Yearling Ewe, Second. Ewe Lamb, Second and Third. Get of Sire, First. Pen of three Lambs, bred by Exhibitor, First and Fourth. Pen of four Rams, bred by Exhibitor, First and Fourth. Flock, any age, Second. Flock, any age, bred by Exhibitor, Second. Flock, one year old, First. Flock, one year old, bred by Exhibitor, First. Flock under one year, First. Flock under one year, bred by Exhibitor, First. Produce of Ewe, First, Second and Third. Premier Championship for Breeder Premier Championship for Exhibitor. A total, including American Shropshire Specials, of 15 Firsts, 9 Seconds, and 8 Championships.

Purebred Registered Rams and Ewes.
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W. F. YOUNG, P.D.F., 86 Temple St., Springfield, Mass.

VETERINARY QUERIES.

[Answered by Dr. H. B. Winttingham, Petaluma, Cal.]
[Subscribers wishing an immediate reply should send money order for \$1.00.
No charge for questions answered through this department. Name and address of
subscriber must accompany each query.]

PERSISTENT LOOSENESS OF BOWELS.

To the Editor: What can I do for a cow which has had running of the bowels about a year? She came fresh with a second calf about a month ago.—C. A., Watsonville.

Give this animal six 30-grain tablets Sulpho-carbolates dissolved in warm water twice a day. Also give one tablespoonful aromatic sulphuric acid diluted in one pail of water three times a day.

BUMP WHERE COLLAR BOIL WAS.

To the Editor: A collar boil on a horse was opened by a veterinarian. It healed but left a large, hard, gristly bump.—C. W. B., Warm Springs.

The only remedy left is to have the hard lump cut out as there is no external remedy which will absorb it. This often happens in these cases and is no fault of the veterinarian who opened it originally.

BURNING DOESN'T CURE THRUSH

To the Editor: I have been using bluestone on a bad thrush and also burned the hoof out with a red hot iron. What will cure it?—R. A. G., Lodi.

Pack the thrushy parts with cerate of cantharides. Do this every third day. The trouble usually disappears after the second application; but in unusual cases a few more applications may be necessary.

ABORTION VACCINE

To the Editor: As there is no veterinarian near, I would like information how to vaccinate for abortion.—E. M. C., Eagleville.

Abortion vaccine can be obtained from the writer with full instructions for its use at a dollar a head plus three dollars for a syringe to do the work.

HAIR OFF FROM AROUND EYES.

To the Editor: Some calves have a rough swelling breaking out around the eyes and the hair comes off.—B. M. B., Corning.

This is ringworm. Wash the swellings and dry well, then paint with tincture of iodine once a day for three days or longer if necessary.

KIDNEY TROUBLE DUE TO ALFALFA.

To the Editor: A horse four years old seems to have had kidney trouble since last fall. When not working, he seems normal, but while working and particularly at hard work, he often hesitates as if he wanted to urinate. When I first noticed the trouble, he was being fed alfalfa hay. I changed to wheat hay with no improvement. During early winter he was fed alfalfa hay again, then

EGGS FOR HOGS.

To the Editor: What would be the best feed for hogs to go with incubator eggs? We have available large quantities of eggs after candling, which we want to use for hog feed, together with whatever else is necessary.—A. E. B., Campbell.

Since eggs are very high in protein, grain or mill feed high in carbohydrates would balance the ration.

Simply dipping the hoofs into a pail of water every day will do wonders to keep the horse's feet in growing condition.

changed back to wheat. While working, he urinates two or three times a day more than the others.—J. T. F., Klink.

The trouble is due to too much alfalfa feeding. Discontinue the alfalfa hay altogether. Give him one dram hexamethylamine dissolved in water twice a day. Improvement will be slow.

STOCK JOTTINGS.

Shoes should be reset every four or five weeks.

Save yourself the price of a horse by providing him with a blanket.

Level the feet of the horse with a rasp. Long toes start ringbones.

A few good ewes well mated are more profitable than a large number of indifferent ones.

It is well to have a part of the cows drop their calves in the spring and a part of them freshen in the fall. This insures a steady income from the dairy, and gives the farmer more freedom during the spring

Hog Cholera Serum

I represent one of the greatest Government Inspected Hog Cholera Serum Plants in the whole country.

NO BETTER SERUM MADE.
An ounce of prevention is worth a pound of cure. Find out about this serum today. Price Right.

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Register of Merit Ancestors.
Dam, Mae of Venadera. Sire, Tomas Exite King
A splendid show bull, well grown and ready
for service—PRICE, \$100.

Also full brother to above, 3 mos. old.
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Mitchell Junior—a 40 h. p. Six
120-inch Wheelbase

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7-Passenger—48 Horsepower
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Now an \$1150 Six Much Like the Larger Mitchell

John W. Bate believes that efficiency requires two sizes in Mitchells.

A seven-passenger car, to be roomy, must measure 127 inches from hub to hub. And 48 horsepower is the proper power.

But a 5-passenger car will be just as roomy with a 120-inch wheelbase. And a 40-horsepower motor gives it power enough.

So, to meet both conditions, we this year build a Mitchell and a Mitchell Junior. You don't need to pay for room or power not wanted.

Every Penny Counts

The Mitchell advantages lie in making every penny count. John W. Bate, the great efficiency expert, has spent years here to attain that.

He designed this whole 45-acre plant to build Mitchell cars economically. He equipped it with thousands of special machines. Every part is built here at the lowest factory cost. On this year's output his methods will save us at least \$4,000,000.

There is no other factory like this building high-grade cars.

Hundreds of Extras

You see the result in hundreds of extras—all paid for by factory savings.

There are 31 features—like a power tire pump—which are practically unique to the Mitchell.

We have doubled our margins of safety. This year every vital part has 100 per cent over-strength.

Over 440 parts are built of toughened steel. Many parts are oversize. Many are built of costly Chrome-Vanadium.

In luxury and beauty the Mitchell excels any other car in its

class. The finish coats are fixed by heat, to give a deep, enduring lustre. A rare-grade leather is employed. This year we have added 24 per cent to the cost of these items alone.

See What Men Miss

See what men miss who buy cars without these extra features. See the 31 attractions, most of which are found in Mitchells only. See what luxurious bodies we can give you at these prices, because of our own body plant.

Then consider the value of this double-strength. It means a lifetime car.

See what it means in the Bate cantilever springs. In two years of use, on thousands of cars, not one of these springs has broken.

Those are the reasons why men are choosing Mitchells in such an ever-increasing way. This year our output is increased 2½ times over. Men don't want to miss these extras.

If you don't know the nearest Mitchell dealer, ask us for his name.

MITCHELL MOTORS COMPANY, Inc.
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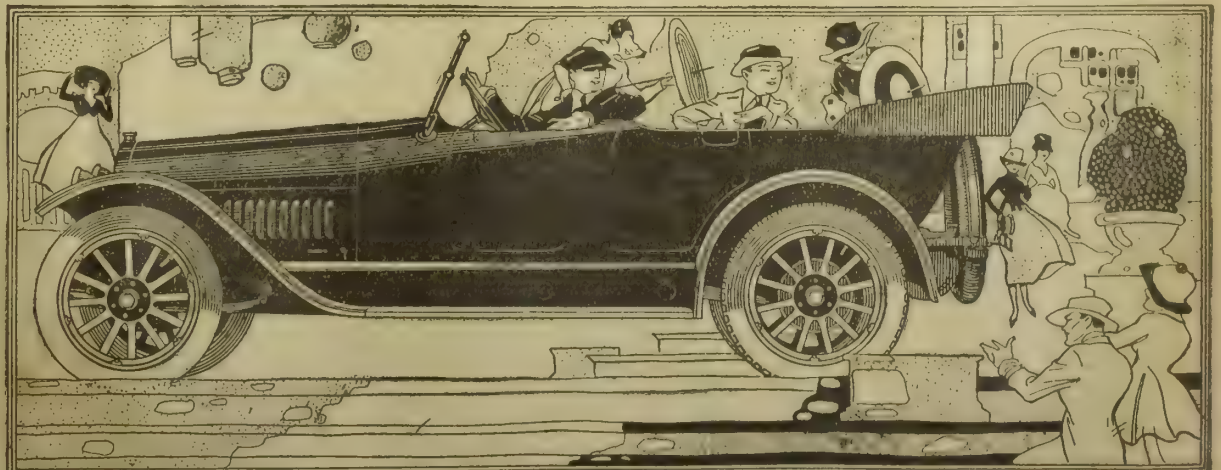
Mitchell—a roomy, 7-passenger Six, with 127-inch wheelbase. A high-speed, economical, 48-horsepower motor. Disappearing extra seats and 31 extra features included.

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Also all styles of enclosed and convertible bodies. Also demountable tops.



Raising Poultry for Profit

LIGHTS INCREASE EGGS.

Electric lights morning and evening in winter time increased egg production remarkably at University Farm at Davis, Cal., last winter, according to Prof. J. E. Dougherty.

A pen of 123 S. C. W. Leghorn one and two-year old fowls were started on a preliminary test on November 19, 1916.

The lights were first turned on at 5 p. m. November 19 and thereafter lighted at 5:15 a. m., turned off at daylight, lighted again at dusk, and put out at 9 p. m. daily. The following table clearly shows the effect that the use of artificial lighting has had upon the pens in which it was used:

Percentage of Eggs from		Lighted and Unlighted Pens.					
		Dec. 3	Dec. 17	Dec. 31	Jan. 14	Jan. 28	Feb. 11
2 weeks period ending	.....	Dec. 3	Dec. 17	Dec. 31	Jan. 14	Jan. 28	Feb. 11
Lighted pen No. 1	.....	6.75	52.1	53.7	56.9	53.1	57.8
Lighted pen No. 2	.....	2.7	35.3	35.4	55.4	54.7	57.6
January pullets	.....	28.2	30.9	45.4	39.4	45.0	67.0
February pullets	.....	32.3	25.6	37.6	31.0	37.7	61.7
March pullets	.....	21.0	27.0	35.8	28.7	42.4	61.5
Average of flock of 1700 layers	.....	9.0	14.0	20.1	20.2	23.3	40.0
omitting lighted pens		.....	.....	.....	.....	.....	.....
Began using electric lights in lighted pen No. 1 Nov. 19, 1916.		.....	.....	.....	.....	.....	.....
Began using electric lights in lighted pen No. 2 Dec. 12, 1916.		.....	.....	.....	.....	.....	.....

Because of the remarkable increase in egg production from week to week following the use of electric lights, it was thought advisable to check the results secured with the first lighted pen by lighting another similar pen in the same way. So, on December 12, 1916, another pen of 94 S. C. W. Leghorn hens, 2 to 4 years of age, was lighted artificially before daylight and after dark, with the results as clearly set forth in the above table.

The only facts brought out by our investigation to date are that the use of electric lights has increased production, as shown in the table with small increase in feed consumption. Using two 50-watt Mazda lamps for 100 fowls for an average of six hours per day at 4c per kilowatt, would cost 2½c per day.

An increase from 20 per cent to 60 per cent production, with eggs selling at 40c per doz. in December, would mean an increase in gross income of forty-one cents per hen, or \$41.33 per 100 laying hens. From this gross income would have to be subtracted the cost of lighting and the additional feed consumed. These preliminary results cannot be regarded as conclusive, but justify further investigation.

TIME TO PLANT GREEN FEED.

[Written for Pacific Rural Press by Susan Swaysgood, Pomona.]

There has not been such a favorable spring for the farmer and small poultryman for many years. But to get the most out of it we must now look ahead and prepare for the dry season that is bound to come; or it would not be our own California. What to plant to get the most amount of good out of a small space is what we need to consider. I consider the big Jersey kale will produce the most green feed to the acre of anything, under ordinary cultivation. Next in quantity is good Essex rape, but a great deal of seed is sold as Essex rape that does not appear to me to be the right thing. Those who have a patch of alfalfa need not worry over the green feed question; all they need do is cut it into suit-

able lengths, if the poultry are yarded; and let them run on it, if loose. The plan of having two yards, one of which is sown to alfalfa, is a great saving of labor and time. In this case you just open the gate and allow the hens one hour a day on the green feed, keep it well irrigated and it is surprising how much it will produce. And in the hour or so the chickens are on the alfalfa they use every minute of the time in supplying their needs, instead of trampling the green down, as they do when given full swing. It does not require a very large patch when it can be irrigated, to serve a few hundred hens. All kinds of cabbage are "good; especially useful are the

large late kinds that grow monstrous heads under good cultivation. Then we have the Cos lettuce, a good green for both quantity and quality. Everything, young and old, likes lettuce and the Cos, if irrigated and the soil kept stirred, will give an immense amount of feed.

If you have only a small patch of land at your disposal, but have water and fertilizer, the one thing to plant is the new variety of Swiss chard, called "Lucullus." It grows to a height of two and a half feet, under good cultivation, and you can use the white part on the table for asparagus and feed the rest to the chickens, who will eat the last bit. This is indeed a wonderful plant that pays three-fold for water and fertilizer. You can cut it as often as you like and it will, in a few days, have new stalks as thick around as rhubarb and every bit edible.

Then for fall use and into winter and early spring, all of the beet family are nourishing and succulent at the same time. Winter Golden Tankard or Golden Giant gives immense crops and they can be planted late, after all your other work is done. Or they may be planted as a second crop after lettuce or Essex rape have given of their best.

In the face of such high prices for grain, it is the wise man who plants something that will not only help out on the feed bills but keep his hens healthy and the egg basket full all the year round. Just a few minutes' work with your thinker, after the day's labor, will bring to mind how you can save many dol-

Poultry Breeders' Directory.

Rates in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

THE J. E. BIGELOW POULTRY RANCH and Hatchery—300 acres devoted to superb vigorous Hoganized White Leghorns. Bigelow chix are incomparably superior to the product of ordinary commercial hatcheries. Prices same as former seasons—10 cents each till April 1, 9 cents during April and May, and 8 cents thereafter. Shipped on approval; examination before paying. The Bigelow Poultry Ranch Sonoma Cal.

HIGHEST CLASS—Winners at State Fair, Oakland, Modesto, Reno. White Rocks and White Leghorns. Incubator chicks. Rocks, \$25.00 per 100; Leghorns, 10.00 per 100; Hatching Eggs, \$2.00, \$3.00, and \$10.00 per 15, according to quality. Rock Eggs, \$10.00 per 100; Leghorn Eggs, \$6.00 per 100, from range flocks. The best of stock and a fair deal. Mahajo Farm, P. O. Box 597, Sacramento, Cal.

EXTRA QUALITY White Leghorn chicks, 12c until March 1st, then 10c. Carefully line bred from MacFarlane, Young, Martin, and Cyphers strains of foundation stock. Eggs, \$1.50 per 15, \$2.50 per 30, \$5.00 per 100, \$50.00 per 1000. Acres of free range connected with our breeding pens, 20,000 feet under roof. Only Jubilee incubators used; disinfected every hatch. Don't save 2c per chick in buying, and lose a dollar per pullet in raising; get the Best and Succeed. Newton Poultry Farm, Dept. 1, Los Gatos, Cal. Catalogue free.

BARRED PLYMOUTH ROCKS — COCKERELS—Cockerels—Yes, we have them; also Hens and Pullets—all bred from our Champion Winners at California's leading shows. Also hatching eggs. If it's Barred Rocks you want, get in touch with me right away. Have bred them exclusively for nine years. Send for Catalog. Chas. H. Voden, Box 398, Los Gatos, Calif.

ROOFDEN RANCH CHICKS are good chicks, well hatched from first-class utility breeding stock—money-making egg producers. The prices are right—7c to 14c, depending on breed, month, quantity (dozen to thousands). White, Buff, Brown Leghorns; Black Minorcas, Rhode Island Reds, Barred Rocks for dollars and sense. Send card for circular. Roofden Poultry Ranch and Hatchery, Campbell, Cal.

"FINEST HATCHERY IN THE WORLD"—Baby Chicks, White Leghorns, and Rhode Island Reds, settings, 100's, 1000's, hatched right in our \$60,000.00 brick and concrete hatchery from our quality heavy layers. Reasonable prices. Stock, Hatching Eggs, Peabeside Poultry Farm and Hatchery, Sunnyvale, California.

BABY CHICKS—From large, healthy, vigorous, heavy laying thoroughbred Single-Comb White Leghorns. \$10 per 100; \$2 per 100 when order is booked, and balance 5 days before delivery. I pay the express to your nearest express office. H. A. Schlotthauer, Exeter, Cal.

THOROUGHbred WHITE LEGHORN and Rhode Island Red Chicks. Delivery up to June first. Our stock are strong and vigorous, are practically non-setters and heavy winter egg producers. Brooke Farm, Rancho Del Paso, Office 807 J St., Sacramento.

WHITE LEGHORN AND BROWN LEGHORN day-old chicks from healthy, vigorous breeders. Per 100, March \$10.00; April and May, \$9.00. Reduction in large lots. "Chicks well hatched are half raised." San Jose Hatchery, 373 Meridian Road, San Jose, Cal.

BABY CHICKS—HATCHINGS EGGS—White, Buff, Brown Leghorns, R. I. Reds, Barred Rocks. Sturdy chicks from well-mated fowls. Prompt, efficient service. Write for circular. Campbell Poultry Ranch, Campbell, Cal.

200-250 EGG PRIZE LEGHORNS, Rocks, Reds, Wyandottes, Anconas. Eggs. Chicks surprisingly reasonable considering quality. \$3-10 profit, every hen. Hundreds satisfied customers. M. Beeson, Pasadena, Calif.

BABY CHICKS—We hatch from our own stock of 10,000 vigorous, healthy S. C. White Leghorn hens of heavy laying strain. Write for price list and further particulars. Geppre Brothers, Petaluma, California.

HATCHING EGGS—90 per cent fertility. From Hoganized S. C. White Leghorns only. Re-mated in February. Prices reduced for March and April. Write at once. Pine Tree Poultry Farm, Los Gatos.

HOGANIZED AND TESTED—220-egg type White Orpingtons and Buttercups. Hatching eggs, chicks and cockerels for sale. Reasonable prices. For particulars, write M. Woodhams, San Mateo, Cal.

SELECTED S. C. White Leghorn and Barred Rock eggs for hatching from hens typed to lay 200 to 250 eggs per year each. Baby chicks in season. Write for prices. Jay Maxwell, Madera, Cal.

S. C. RHODE ISLAND REDS—220-egg record in 12 months. Hatching eggs. Chicks. Stock. Also Rose Comb Reds. Mating list ready. Wm. Larm, 3915 39th Ave., Fruitvale, Cal.

BLACK LEGHORNS AND SILVER CAMPINES—Stock direct from leading Eastern breeders, a few hatching eggs reasonable. A. C. Hayes, Blaney Ave., Cupertino, Cal.

HICKS JUBILEE HATCHERY, Petaluma, Cal.—White Leghorn and Black Minorca chicks and hatching eggs. Circular "How to Raise and Feed Chicks" Free.

GIVE the Black Minorcas a trial. Guaranteed first class. Eggs \$6 per hundred, \$1.25 per setting. Chicks, \$12 per hundred. Ezra Mosher, Union Station, Napa.

BABY CHICKS—From select free-range White Leghorn stock. Place orders early. Prices on application. Western Hatchery, Petaluma, Cal. W. S. Waldorf, Prop.

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BABY CHICKS (White Leghorns)—shipped on approval before remitting. No weak ones charged for. Schellville Hatchery, E. F. D., Sonoma, Cal.

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White Leghorn and White Plymouth Rock Cockerels. White Leghorns and White Rock Baby Chicks hatched from specially selected heavy-laying stock. Prices same as last season. White Leghorns, January and February delivery, \$12.50 per hundred; March, \$10.00; after April \$10.00. Write Plymouth Rocks, \$15.00 per hundred. All E. O. B. Hopland.

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BUFF ORPINGTONS—BUFF LEGHORNS—Winners at Riverside, San Diego, Los Angeles in strongest competition. Eggs, settings and incubator lots. Chicks for April and May. Free mating list. The Ferris Ranch, E. 2, 114D, Pomona, Cal.

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THOROUGHbred WHITE PLYMOUTH ROCK—Eggs, \$1.25 per setting, prepaid. H. G. Nickel, Vinuba, Cal.

LASHER'S HATCHERY, PETALUMA—Write for booklet, "The Day-Old Chick Business" and price list.

WHITE PLYMOUTH ROCKS—Hatching eggs from splendid layers. Mrs. J. B. Tupper, Route A, Ceres, Cal.

PEARL GUINEA FOWL—\$2.00 per pair. Mrs. Kate Lambert Newark, Cal.

RHODE ISLAND REDS—Eggs, \$1.00 for 15. P. M. Cox, Sonoma, Cal.

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BUFF DUCKS—Weigh like a Pekin, lay like a Runner. White egg strain. Winners at the best Western shows for past three years. Eggs, settings, and small incubator lots. Duckings in April. Mating list. The Ferris Ranch, E. 2, 114D, Pomona, Cal.

BOURBON RED TURKEYS—Blue ribbons at Panama-Pacific, California and Arizona State Fairs, Los Angeles since 1914. Eggs for April delivery, \$5.00 per 12. Mating list. The Ferris Ranch, E. 2, 114D, Pomona, Cal.

THOROUGHbred French Rouen Duck Eggs for hatching from winners at San Jose, Oakland and Arizona shows. Also Bourbon Red Turkey eggs. Mrs. Emma V. Miller, Farmington, Cal.

BONZE TURKEYS—Young Toms for sale. No more eggs till further notice. Free circulars. Albert M. Hart, Clements, Cal.

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YOU can have them—bigger and sounder birds, and at less cost, IF YOU USE THE
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lars; and a dollar saved is a dollar earned always.

THE FOUNDATION HEN.

Unretouched Photo, 4th Prize (Utility) Rhode Island Red Hen, P. P. I. E. Poultry Show, 1915, 235-295 egg type. In 1915 she laid 100 eggs the first 4 months which hatched 94 chicks in incubators. The remaining eight months she laid 120 eggs, and



220 eggs in twelve months her second year. Bred and owned by Wm. Larm, 3915 39th Ave., Fruitvale, Cal.

Young stock from this hen have been shipped to Hawaii, Midway, Philippine Islands, New Zealand, and Central America.

QUESTIONS AND ANSWERS:

[By Susan Swaygood.]

Lame Rooster.—I have a rooster that has had scales on his legs and now his legs are swollen up so he can hardly get around. Could you tell me what causes this scale, what would cure it, and what to do for the swelling?—O. R. R.

Being as you are far enough away I dare tell you the truth, otherwise I might temporize. The cause of scaly legs in chickens is a small insect that gets underneath the outer skin of the legs; but in all cases I ever knew the cause of the insects being there was a filthy condition of the hen house, yard or wherever the chickens run, so you see it is a case for prevention rather than cure. It can be cured, but prevention is easier. Wash the legs in good warm water and laundry soap. Scrub well, no matter how sore they are, then anoint the legs with carbolated vaseline into which you mix a little flowers of sulphur. The bird will be all right once he is rid of his tormentors.

Ducks Won't Lay.—Please tell me why my ducks won't lay at this time of year. We feed them well, shut them in a lot at night to be sure they don't lay away.—R. P. W.

You say you feed them well, but you don't say how well; there must be something lacking as this is the natural time for ducks to lay. Are you giving them any animal food? If not, do so and you will find that is the missing link. Ducks must have animal food or you get few eggs.

Incubator Turks.—Could you tell me something about little turks hatched in an incubator—how to care for and feed?—Mrs. S. J. F.

Keep them about as warm as you would chicks, but give a little more liberty. Leave out all chick feed, and just feed hard-boiled egg, chopped onion top or lettuce. Mix a little cornmeal in clabbered milk, adding a little red pepper. The great thing to remember in feeding young turks is to feed very light, never cram them; they digest their food slowly and must have exercise.

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JOE MILLER'S WHOLE WHEAT BREAK-fast Food. Miller Milling Co. Alhambra, Cal.

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WHOLESALE PRICES to planters.—Plums, Prunes and Apricots on Myrobalan, 15c; Cherries, 15c; Peaches, 10c; Nectarines, 12 1/2 c; Almonds 15c. All 4 to 6-foot trees. Grafted Walnuts, 25c up. Grafted Pecans and full line of other stock. New surplus list ready. All stock guaranteed. Tribble Nurseries, Lodi, Cal.

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STRICTLY FANCY SEEDS.—Alfalfa, Scarified Sweet Clover, Red Clover, Timothy, Rye Grass, etc. Free Bulletin—"Sweet Clover in the Northwest." Write for samples and prices. Ralph Waldo Elden, Central Point, Oregon.

WALNUT GRAFTING WOOD.—Genuine Franquette. Same strain as Vrooman orchard was planted from. Willson's Wonder, grown by originator, F. C. Willson, Encinal Nurseries, Sunnyvale, Santa Clara Co., Cal.

FOR SALE.—6000 Rhubarb plants. Large Burbank Giant variety. \$30 per thousand; \$5 per hundred; \$2 per twenty-five; \$1 per ten. T. Hurt, 608 Napa St., Vallejo, Cal.

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WANTED.—Young men and women to attend the Western Normal Courses—Normal and Academic. The Normal Course gives an adequate preparation for teaching, at a great saving in time and money. Academic course gives practical finish to education. Write for Bulletin "A." Western Normal, 524 E. Market St., Stockton, Cal.

WANTED TO HEAR from owner of good ranch for sale. Send cash price and description. D. F. Bush, Minneapolis, Minn.

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FOR SALE.—560 acres good loam land, fenced and cross-fenced one mile creek front; no alkali. 60 acres creek bottom, 300 acres level upland, 200 acres rolling hills. Best nut, fruit or dairy land. On line between Sacramento and San Joaquin Counties, four miles from electric road. Two good barns, granary, milk house, 9-room house, etc. Price \$60 per acre. Enquire owner, Mrs. A. West, 2200 Ninth Street, Sacramento.

FOR RENT OR SALE.—Ideal stock ranch of 410 acres in Lake county. About 200 acres level land, all clear. Balance open range. House, barn, outer buildings. Nine-strand barbed wire fence. Will exchange for income city property. Owner, 2356 California St., San Francisco.

FOR SALE.—948-acre stock ranch in Napa county. Price, \$17,000 net. All modern improvements. Living creek. 125 acres hay, grain and alfalfa land. Free range adjoining. 175 head of cattle can be purchased if desired. Liberal terms. Owner, Box 363, Napa, Cal.

\$5,450.00.—Andrew Linquest, 20-acre Peaches and Grapes ranch, two miles west Kingsburg, California. Improvements. Half interest. Pumping plant. See Linquest, C. E. Robertson, 105 Montgomery St., S. F.

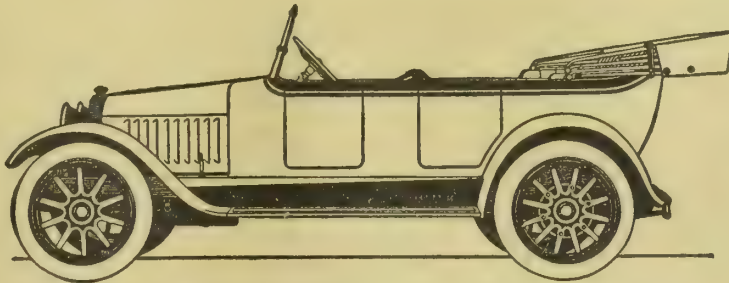
E. S. COELHO, CORCORAN, CAL. Owner—150 acres improved, subdivided alfalfa dairy, Stratford. Keeps 85 cows. C. E. Robertson, 105 Montgomery St., San Francisco.

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FREE NEW BLUE BOOKLET.—State, Government and Indian Lands. Bargains overlooked. Joseph Clark Sacramento.

560 ACRES Celebrated McFarland Alfalfa acreage. Water developed. C. H. Stiles, McFarland, Cal.

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Chalmers 7-Passenger Touring Car—Price \$1350 Detroit

Full Value for Every Dollar In this Chalmers, 7-Passenger Touring Car

Scan the list of other 7-passenger cars for the equal of this Quality Chalmers. You will not find it. Only in this Chalmers are combined so many real values. You may pay \$300 to \$500 more and find nothing better.

Only a builder of long experience and with a yearly output of thousands could produce this car at so low a price. Only thus can quality of materials and of manufacturing be combined with economy of production. Because Chalmers does this is the reason why this Chalmers 7-passenger Touring Car has no competition at anywhere near its price of \$1,350.

These Prove Quality Claims

Chalmers claims a motor of unexampled smoothness, of unusual power. Prove it by examining Chalmers Lynite pistons, 1/3 the weight of the usual cast iron. These give smoothness, less strain on bearings, admit of higher power. Compare the Chalmers crankshaft with others. It is one-piece, special steel, drop-forged, balanced in motion to a fraction of an ounce.

See the Chalmers Transmission

Gears are crucible nickel steel, case-hardened and heat-treated. They shift easily, without clashing, and properly used are practically in-

destructible. The Chalmers type of dry-plate, disc clutch is far in advance of other designs. Chalmers rear axle is the same as used in expensive foreign and American cars. It is silent, efficient, economical.

A Big Beautiful Body

Big—122 inch wheelbase. Beautiful—because graceful in form, hand-finished in Chalmers shops upholstered in genuine pebble-grain leather, with new Scotch "fluted" finish. Auxiliary folding seats, Pantasote top, curtains open with the doors, fasteners are the "lift the dot" pattern.

Compare Quality—and Price

Think how great the difference between this quality Chalmers and other cars. Realize what unusual value is here offered. You will go much higher in price before you will find any other to please you so well. And all these claims we submit for your decision. Come—try the car. Investigate. Then only can you decide.

Touring Car, 7-passenger	\$1350	Roadster, 3-passenger	\$1250
Touring Car, 5-passenger	1250	Limousine, 7-passenger	2550
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(All prices f. o. b. Detroit)

(Dealer's Name)



Mrs. Best's Letter.

NEW SPRING HATS.

Dear Friends: As one always thinks of hats with the coming of spring I thought you might be interested to know what the shops are showing now. Cheerful news to all is that there are many different kinds and very similar to last summer so that if you have a becoming shape or a hat that merely needs freshening you are in luck. Get out your old millinery and take stock of it. Black hats are very good style so if you have a sunburned or faded hat buy a bottle of Blak-it or some similar preparation, follow directions and you will be pleased with the results. Feathers, quills, and wings are used for trimming as are also small bunches of gay flowers or flat roses. A gasoline bath might revive such evidence of past glory so as to be used again.

I will describe several hats that were displayed so that you may have a definite idea of them.

There are turbans, black and shiny, of stiff straw very tailored in appearance that are trimmed with wings on the crown. Also there are simulated turbans where the brim turns up abruptly to the crown with a flare out at the back or side, a single flower or cluster on the flare furnishing the decoration. Some of the turban shapes have a fringe of narrow feather standing up from the crown, while others have a wing-like effect of silk or ribbon or horse hair, a couple of inches wide, extending all around the crown, or on one side tilted, or at the back.

The sailor shapes are still popular. The accustomed sailor of small crown and knife-like edge in bright colors and black and white is shown for tailored wear, merely trimmed with a band and flat bow of ribbon. In dress hats the crowns of hemp hats are removed and horse-hair crowns inserted. Around the crown lies narrow velvet ribbon which is tied into a graceful bow in back. Or bright flowers and ribbon combined around the crown make the hat gay.

Nunidie, which is a soft feather, is used placed flat on the brim, or around the crown, adding height.

Leghorns and Milans are seen again in flat and droopy shapes. Most are large with the brim or crown or both brim and crown covered with Georgette crepe in light shades. These are dress hats and the trimming is very dainty and pale. Yellows, greens pinks and blues are becoming and are used singly or in combination. Wreaths of tiny roses are placed around the top of the crown, or narrow ribbon is made into rosettes which placed around the crown are joined by the ribbon running up in points on the crown.

Dainty old-fashioned lace covers some of the brims in a soft ruffle, a narrow beading resting against the crown. These hats may have small crowns or high crowns. They usually droop and sometimes are wired under the brim so they may be made to droop becomingly.

The three-cornered hat is still here. One that I saw was brown with small bronze wings tacked into the three points. It fitted the head

closely and had a plain mesh face veil of brown to be worn with it. Another had ribbon on the top of the crown that ran out in points on the turned-up sides. Another had roses closely sewed to the crown and one of the long loose veils was displayed with it.

Tam-o'-shanters are very nifty for girls. There was one of blue shiny straw that had a large big curled quill that was inserted into two slits on the top of the crown.

A very dressy hat of brown hemp, the crown and brim covered with tan silk, was turned abruptly up on the left side and a cluster of tan quills nestled in the recess.

There are hats that turn up all around with a slight roll. I saw one of black braid brim and blue silk top trimmed with a single rose on the front. Another of the same shape was of dark brown braid and brown satin. Ornaments were made of the combination of materials and put on the crown. Then there was a dear little black crepe hat that turned up all around that had strips of tiny buds of bright colors running from brim to crown on the underside.

The black puritan style is still good. Some are just trimmed with a broad ribbon and buckle catching the ends in front.

Rosabella Best.

TO HANG DRAPERIES.

Portieres to be correctly hung in a doorway should be made just the length of the door, folding the top back and stitching it just as though there were to be a rod run through. This gives a good finish and provides a place in which to run a tape to draw up the width of the curtain to just the width of the door. For the hanging, get a narrow metal track on which slide metal discs with eyes in them. This track is to be fastened on the inside molding of the door, with the discs hanging down. With this outfit come brass hooks to be sewed at intervals in the stitching in the top of the curtain as many hooks as there are discs. Then slip the hooks into the eyes of the discs and the work is done. The curtain hangs absolutely true on account of being drawn up on the tape and can be moved back and forth with much ease.

TO SET COLORS IN GINGHAMS.

To set the colors in gingham and other fabrics at the time the shrinkage is done, use the following: to 1 gallon of water add half a cup of mild vinegar, or 2 cups of salt, or 1 tablespoon of powdered alum, or 1 tablespoon sugar of lead (poison). In most cases, allowing the mate-

rial to soak several hours in the liquid is sufficient, although with salt and vinegar solution, no harm is done if the material soaks over night. The material should be thoroughly dried in the shade. Vinegar is best for pinks, brine for black and reds, sugar of lead for blues and browns and alum for greens, lavenders and purples.

To freshen colors, soak garment in a weak solution of borax before washing.

THE SEWING MACHINE.

Perhaps the most helpful article in the household for the wife is the sewing machine. It is a time saver as well as being less of a strain on eyes and muscles than hand sewing.

To get the best results it should be kept well oiled and clean. The use of the attachments can make the sewing much easier and also more effective. It may take some little time to learn how to use them, but the time is well spent, as the work goes on so much more rapidly when hand work is eliminated.

THINGS WORTH KNOWING.

In washing a crown of lamb, a piece of fat pork placed on the top of each rib will prevent it from becoming too brittle while in the oven.

The easy way to clean a clogged grater is to grate dry bread through it.

Boiled eggs are much easier to handle if they are placed in a small strainer and then placed in the pan in which they are to cook.

Rich soda biscuit, split in half, well buttered and covered with jam or preserved fruit, make a good quick shortcake. Cream is a great addition.

When pushing curtain rods through freshly laundered curtains, put a small thimble over the end of the rod. This prevents tearing the curtain.

Frayed pieces of cloth for cleaning often clog drain pipes.

BROWN BREAD.

Mix 2 cupfuls of sour milk, 1 cupful of sweet milk, 2½ cupfuls of Indian meal, 1 cupful of Graham flour, ¾ cupful of molasses, 1½ teaspoons soda and 1 teaspoonful of salt. Stir well and steam 3 hours in a buttered mold. Baking powder or straight coffee cans with tin covers answer the purpose very well.

TO CLEAN BRASS.

Rub with fine powdered pumice and sweet oil, washing and polishing afterwards, or make a paste of oxalic acid and whiting, keeping in a closed box and wetting with hot water when used.

BANANA CREAM PIE.

Scald 2 cups of milk and stir into it ¾ of a cup granulated sugar and ¼ of a cup cornstarch and ¼ teaspoon salt well mixed. Let it cool a little after it is smooth and thick and then after slightly beating together 1 whole egg and 2 egg yolks, add them to the mixture. Flavor with ½ teaspoon vanilla. Line a pie tin with pastry and fill with the custard. Have the oven hot to begin with and then lessen the heat to avoid boiling. When the pie is baked, slice 2 bananas over the custard, covering immediately with the meringue made of the 2 egg whites, 3 tablespoons powdered sugar and ¼ spoon vanilla. Brown delicately.

Good Health.

[By H. E. Pastor, M. D.]

Horrors! Cutting 'Em up Alive!

An agitation is on foot in this State at the present time having for its object the obstruction of State legislation authorizing the practice of vivisection under proper restrictions. Some people are born chronic obstructionists—like the Irishman who, on landing in New York and being asked his politics, asked in turn, "Have yez a guvermint?" "Why, certainly we have," answered his interrogator. "Then, be jabbers," responded Pat, "I'm agin it." Pat has plenty of imitators, and science has been opposed at every step of its slow and laborious progress by constitutional objectors.

Now, vivisection may be defined as the practice of dissecting live animals in the interest of medical science. It is denounced by its critics as being a cruel and unnecessary practice. Let us see. Pasteur experimented on living animals with a view of reducing the horrors of hydrophobia, with the result that in the 12 years after completing his experiments 16,213 persons were treated at his institute in Paris with a mortality of only one-half of one per cent. In former times smallpox was a scourge before which stricken mankind stood as helpless as if before grim Death itself; Jenner, by experiments on animals, produced a vaccine that is said to have saved from death by smallpox enough people to populate the world. We cannot go into particulars here in our allotted space, but it may be mentioned in passing that the antitoxin that controls that malignant disease diphtheria; that the mitigation of yellow, malarial and typhoid fever; that the antitoxin that renders man and beast alike immune against lockjaw; that the prospective control of cancer, tuberculosis, and the most dreaded of all venereal diseases—all these are due to scientific experimentation on animals of one kind or another—guinea pigs, dogs, rats, and others. The late epidemic of infantile paralysis led to extensive experimentation on monkeys, which has thrown much light on this dread disease, and promises satisfactory results. Why sacrifice children to save monkeys? Why should we shudder over the sacrifice of a few or even many animals when millions of human lives are rescued thereby? While it is admitted that some suffering is inflicted in these vivisectional practices, it is not done for the lust of inflicting pain, but for necessary and justifiable ends. The pain incident to this practice is no greater nor is it more cruel than that involved in dehorning a cow, or branding a steer, or castrating a boar, or spaying a sow, or caponizing a rooster. Man is given dominion over the lower order of animals by divine law, and in his relations with those animals, whatever procedures are necessary for man's behoof, whether for sustenance or for exemption from disease are proper and justifiable. Most of those who oppose vivisection, conducted scientifically and conscientiously, are either ignorant obstructionists or silly sentimentalists.

Sub-acid fruits are more wholesome than fruits strongly acid.

Big Ben

A
Westclox
Alarm



SEVEN A. M.—**BIG BEN** at his best—opening little folks' eyes—there's a race to hush him—a pillow battle—merry laughter—and mother to tidy the kiddies for school.

For the rising generation there's no better get-up. Big Ben's little men bubble health and cheer, and they feel as big as Daddy with a clock all their own.

He gets 'em to school long before the last gong and this habit lingers when the children grow up.

You'll like Big Ben face to face. He's seven inches tall, spunky, neighborly—down-right good.

At your jeweler's, \$2.50 in the United States, \$3.50 in Canada. Sent prepaid on receipt of price if your jeweler doesn't stock him.

Western Clock Co.

La Salle, Ill., U. S. A. Makers of Westclox

Other Westclox: Baby Ben, Pocket Ben, Bingo, America, Sleep-Meter, Lookout and Ironclad

Indoor Closet

More Comfortable, Healthful, Convenient

Eliminates the out-door privy, open vault and cess-pool, which are breeding places for germs. Have a warm, sanitary, odorless toilet right in your house. No going out in cold weather. A boon to invalids. Endorsed by State Boards of Health.

ABSOLUTELY ODORLESS

Put It Anywhere In The House

The germs are killed by a chemical process in water in the container, which you empty once a month. Absolutely no odor. No more trouble to empty than ashes. Closet absolutely guaranteed. Write for full description and price.

ROWE SANITARY MFG CO. 278B ROWE BLDG., DETROIT, MICH.

Ask about the Ro-San Washstand—Hot and Cold Running Water Without Plumbing

Specialists in Specimen Stock for Landscape Work.

Hardy Rhododendrons, Azaleas, Box-woods, Hollies and a complete line of Coniferous Evergreens.

WRITE FOR PRICES.

Cottage Gardens Nurseries, Inc., EUREKA, CALIFORNIA

Floral Department.

[By Geo. N. Tyler.]

ROTTING BULBS.

I received the following communication this week, which I think will be of interest to my readers:

"Some anemones (St. Brigid) and almost all varieties of tulip (Rev. Eubank, Gesueriana lutea) have putrefied in the soil where they were planted the last fall. These bulbs were bought in San Francisco. All bulbs started to grow at first, but when they had grown about two inches long from the top of the bulbs, the insides of the bulbs were putrefied, and many insects were in them—while the young shoots are not dead yet. I think this is not the result of using strong fertilizer, for we did not use any; or the cold weather, because the young growth is alive longer than the bulb itself; or caused by any insects, as they were hatched after the putrefaction."

In answer to the above, would state that in my opinion they were imported bulbs, and owing to the war were a long time on the way, and were heated in transit by being too close to the boilers of the vessel, or heated of their own accord on account of long packing. I have not used the imported bulbs for a number of years, owing to the uncertainty of their flowering when forced. There are several firms on the Pacific Coast who are growing better bulbs at a less cost than the imported ones. There are several growers in Santa Cruz, also a number up in Washington State; and C. W. Ward of the Cottage Gardens Nursery has started an enormous plant at Eureka for the growing of numerous varieties of bulbs; also azaleas, rhododendrons, and a lot of other stock that is usually imported from Holland, and they are meeting with great success.

Of course all varieties of bulbs cannot as yet be grown successfully on the Pacific Coast. Most of the earlier flowering tulips, hyacinths, lily of the valley, Roman or miniature hyacinths, and a number of other varieties of bulbs are still imported; but you can get the Darwin and Gesueriana tulips grown here; also gladioli, fresas, narcissus and daffodils in all the varieties—ixias, Spanish iris, jonquils, etc. There is no way you can tell whether a bulb has been heated or not when you get it; it generally comes blind, or starts to rot when planted. My advice is to get Pacific Coast grown bulbs whenever you can, and you will not be disappointed when you plant them out. I handle and grow nothing but the home-grown bulbs, and get the best of results from them year after year.

Good mattresses should have cotton covers to protect them from dust and soil.

This is the Roof Covering You Want

Everybody Praises It—**ELASTIC-GUM-COATING** is just the thing for covering roofs—Cheap and Efficient. Here is just the roof covering every California home owner should have—**ELASTIC-GUM-COATING**. It stops leaks, preserves wood, is low priced and easily put on. It cannot crack, scale, or blister. Thousands of gallons being sold. Has strongest endorsements of California ranchers and dealers.

Send today for free descriptive circular, price list and sample offer. If your dealer does not yet handle **ELASTIC-GUM-COATING**, write direct to.

Artisans Manufacturing Co.

C. M. WOOD, Western Representative, LOS ANGELES



"Young man, the best tonic for you is the right kind of food. I suggest for Breakfast

Ghirardelli's Ground Chocolate

It's easily assimilated — it's extraordinarily nutritious — and it is supremely delicious."

It comes **PROTECTED**—as all chocolate should—in $\frac{1}{8}$ -lb., 1-lb. and 3-lb. hermetically sealed cans.



Since 1852

D. GHIRARDELLI CO.

San Francisco



TO SACRAMENTO

Fast electric trains leave San Francisco every 2 hours during the day. One way fare \$2.50. Week end round trip \$3.35. Sunday round trip, \$2.50. Convenient and comfortable electric train service from Bay Cities to Sacramento Valley points, including Woodland, Marysville, Oroville, Colusa, Gridley and Chico.

Oakland, Antioch & Eastern Railway

San Francisco Depot, Key Route Ferry. Phone Sutter 2339.

There Is No Excuse for Ill Health Except Accident

A rational, simple, and natural way of conquering **CHRONIC DISORDERS**. It is a Certain, Definite and Positive method. **NEW SYSTEM** of individual treatment—**WITHOUT DRUGS OR SURGERY!** Write today to Drs. Ward and Aalders, General Offices, 509 Central Bank Building, Oakland, Cal. Private Sanitarium.

FORTY VARIETIES OF FERNS

In 4-in. pots now ready, 25 cts. each, \$2.50 per dozen. Am booking orders now for choice varieties of **CHRYSAANTHEMUMS**, commercial, show, single and pompoms. Forty varieties of **PELAGONIUMS** in four-inch pots will soon be in bloom, 25 cts. each, \$2.50 per doz. Also a large variety of other stock. Send for catalog.

GEO. N. TYLER, Brookdale Nursery, Los Gatos.

TIRES

We Guarantee

Goods shipped to all points O. O. D. Money refunded on goods returned intact within one week.

Size	Special Prices on Plain Tread	Gray	Red
28x3	\$ 7.20	\$1.85	\$2.05
30x3	7.65	1.95	2.20
30x3½	9.85	2.20	2.45
31x3½	10.40	2.25	2.50
32x3½	10.95	2.35	2.55
34x3½	12.05	2.40	2.65
36x3½	13.25	2.50	2.90
30x4	14.50	2.95	3.25
31x4	15.25	3.00	3.35
32x4	15.45	3.10	3.45
33x4	16.15	3.25	3.55
34x4	16.45	3.30	3.70
35x4	17.20	3.35	3.80
36x4	17.45	3.45	3.90
34x4½	22.25	4.05	4.55
35x4½	22.95	4.15	4.65
36x4½	23.35	4.30	4.75
37x4½	24.10	4.35	4.85
35x5	26.00	4.95	5.45
36x5	26.35	5.15	5.60
37x5	27.40	5.20	5.75

Non-Skid Prices in Proportion. **WE GUARANTEE.**

Prices subject to change without notice.

AUTOMOBILE TIRE CO.

SIXTH AND OLIVE STREETS, LOS ANGELES.

F3737 H. A. Demarest. Bdw 4049.

533 Van Ness Avenue, San Francisco.

1776 Broadway, Oakland.

Second and B Streets, San Diego.

Hotel Fresno Building, Fresno.

The Oldest Automobile Tire Jobbing Concern in the United States and the Largest in the World.

Open Sundays and Evenings

SAN FRANCISCO.

San Francisco, March 14, 1917.

WHEAT.

There was a general advance on all offerings during the past week, although the market showed some signs of easing off at the close—due to apprehension that the threatened railway strike might become a reality. Trade in futures has been marked with slightly firmer prices on the December option, but trading has been of small volume.

Sonora wheat	.....\$2.80@2.85
Northern club	.....None offered
Calif. Club, cti.	.....2.75@2.80
Northern Bluestem	.....3.05@3.10
Northern Red	.....3.30@3.20

BARLEY.

Barley quotations have been without change during the past week, although some houses were reported to be trying to get a small advance on red feed stock.

Seed, cti.	.....\$2.50@2.60
Shipping, cti.	.....2.35@2.40
Brewing	.....Nominal
Choice feed, cti.	.....2.25@2.30

OATS.

A scarcity of first quality stock and a decidedly larger country demand combined to bring higher prices on all varieties of oats during this past week. Red Texas seed oats is now being generally held at \$3.10 per cental, although the buyers of large lots have secured a ten-cent reduction from this price. The export demand was only normal but futures business is active.

Red feed	.....\$1.90@2.00
White	.....2.05@2.10
Red seed (Texas)	.....3.00@3.10

CORN.

The fancy prices being paid for hogs at the present time have led to a big call for corn here, the owners evidently figuring that the figure now paid for fat stock is such as to warrant the feeding of this expensive product. Northwest buyers were also in evidence here and quotations on corn were advanced 15@17½ cents per cental. [First-hand prices on strictly first-class grain, San Francisco.]

Eastern Yellow, cti., bulk	.....\$2.30@2.35
California, sacked	.....2.30@2.40
Milo Maize	.....2.15@2.35
Egyptian	.....2.35@2.40

BEANS.

While quotations on most varieties of beans have been advanced here this past week, it is very much of an open question in the minds of local dealers whether these gains will be held. The calling of a general railroad strike will mean sky high prices in the East for beans, and a big drop here because of the inability to ship goods out. Already the freight situation is so bad as to be the cause of general complaint, one house having received word that a car of beans which left here ninety days ago has reached El Paso, and that the railroad company hopes to move it again next week. For the last couple of days, business with houses East of Salt Lake has been at a standstill as none of the firms care to tie up their money in cars that may not leave San Francisco for several months. Some export business was reported, with limas and blackeyes the most favored varieties.

[Recleaned, f. o. b. San Francisco.]

Bayos, per cti.	.....\$ 8.25@ 8.50
Blackeyes	.....7.00@ 7.20
Cranberry beans	.....8.75@10.00
Horse beans	.....5.50@ 6.00
Small Whites (south)	.....12.00@12.25
Large Whites	.....11.75@12.00
Pinks	.....8.75@ 9.00
Limas (south, recleaned)	.....12.00@12.40
Red Kidney	.....11.75@12.00
Mexican Reds	.....7.75@ 8.00
Tepary beans	.....8.50@ 8.75
Garbanzos	.....4.25@ 4.50

HAY.

Still further advances on most grades of hay were reported for the past week, with light offerings the principal factor in this. During February of this year 7050 tons of hay were delivered on this market, as compared with 12,757 tons for the same month last year. Receipts for last week were 1045 tons, a gain over the 746 tons of the preceding week, but this was largely offset by a larger export call. Holdings in dealers' and consumers' barns here and in country public warehouses and farmers' barns are the lowest ever reported for this season of the year. Crop prospects are all that could be asked for, although buying here for feeding at interior points is still noticed. Alfalfa hay and straw are both scarce and in very good demand.

[Price per ton, carlots, San Francisco.]

Wheat, No. 1	.....\$22.00@23.50
No. 2	.....20.00@21.50
Tame oats	.....20.00@23.50
Wild Oats	.....18.00@21.50
Barley	.....18.00@21.00
Alfalfa	.....18.50@21.50
Stock hay	.....17.00@18.00
Straw, per bale	.....90@ 1.10

FEEDSTUFFS.

[Per ton, San Francisco.]

Beet Pulp, per ton	.....\$31.00@32.00
Alfalfa meal, per ton	.....23.00@24.00
Brn. per ton	.....30.00@31.00
Oil Cake	.....42.50@45.00
Cocoanut cake or meal	.....32.00@33.00
Cracked corn	.....52.00@53.00
Middlings	.....45.00@50.00
Rolls Barley	.....45.00@47.00
Tankage	.....47.00@48.00
Rolls oats	.....44.00@45.00
Rice middlings	.....31.00@33.00

POTATOES, ONIONS, ETC.

Spring vegetables are fast becoming a factor in the local market, with asparagus commanding the most interest at present because of its newness. Cold weather has held back this crop, and it is not expected that car lots can be shipped East before March 20,

THE MARKET REPORTS

Figures Given Are Independent and Reliable.
Prices Quoted as Paid to Producers.

against March 9 for the shipping date of the first car in 1916. Local receipts are running about 100 boxes per day, and are selling at prices that should net the grower 12½@30 cents per pound, depending on grade. The first car of rhubarb went East last Monday and increased offerings have brought a drop on this offering here. Lettuce fails to command as high prices as last week because most shipments show the effect of frost. The potato market seems to have definitely broken, largely due, it is said by local dealers, to an unannounced boycott on the part of the Pacific Coast housewives. Onions are also lower, with continued receipts of Japanese stock promising to further break the market.

Asparagus, per lb.	.....12½@30 c
Peas, per lb.	.....5 @11 c
Hubbard squash, per lb.	.....2½@3¼c
Lettuce, crate	.....\$ 1.50@1.25
Celery, Delta, crate	.....1.50@2.50
do, Southern, crate	.....2.50@4.90
Tomatoes, crate	.....Not enough to quote
Rhubarb, box	.....1.00@2.25
do, new, per lb.	.....8@10c
Potatoes, cti, Delta	.....2.75@3.25
Salinas	.....Cleaned up
Oregon	.....3.00@3.50
Sweets, per lb.	.....5c
Onions	.....5.00@7.25
Garlic, lb.	.....3@5c

POULTRY.

The offering of Eastern poultry in this market put a stop to the big demand for California hens this past week, and this line was moving at easier prices. Young fowl continued scarce and steady as to price, but any increase in arrivals is sure to be followed by a break.

Turkeys, live, lb.	.....22@24c
do, dressed, large, lb.	.....Nominal
Broilers, 18 lbs to doz and less	.....32@35c
do, over 18 lbs. to doz.	.....29@31c
Fryers	.....27@30c
Hens, extra, per lb. colored	.....24c
Small leghorn	.....22@23c
Smooth Young Roosters, per lb. (3 lbs. and over)	.....25@27c
Old Roosters, per lb.	.....15@17c
Geese, per lb.	.....13@20c
Squabs, per lb.	.....40@48c
Ducks	.....24c
Old	.....21@22c
Belgian Hares (live)	.....13@15c

BUTTER.

Last weeks break in butter prices led to a better shipping call, and the entrance of firms having Alaska contracts here helped to bring a rally. With the Eastern markets holding steady, no change of great moment, either in the nature of a decline or advance, is to be expected until grass butter arrives in large quantities.

Thurs. Fri. Sat. Mon. Tu. Wed	
Extras	.....33 33 33½ 33 34 34½
Prime 1sts	.....32½ 32½ 33 32 33½ 33½

lowed by a break. Three cars of Eastern poultry went on sale here this week, and were taken up immediately by a pool of larger retailers, leaving the market at the mercy of small lot buyers. However, this may be offset by a better call for fowl, this now being the cheapest meat item in the market.

Turkeys, live, lb. 22@24c
do, dressed, large, lb. Nominal
Broilers, 18 lbs to doz and less. 32@35c
do, over 18 lbs. to doz. 29@31c
Fryers 27@30c
Hens, extra, per lb. colored 24c
Small leghorn 22@23c
Smooth Young Roosters, per lb. (3 lbs. and over) 25@27c
Old Roosters, per lb. 15@17c
Geese, per lb. 13@20c
Squabs, per lb. 40@48c
Ducks 24c
Old 21@22c
Belgian Hares (live) 13@15c

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Old Roosters, per lb. 15@17c
Geese, per lb. 13@20c
Squabs, per lb. 40@48c
Ducks 24c
Old 21@22c
Belgian Hares (live) 13@15c

EGGS.

The local egg market has held up surprisingly well in the face of increased receipts, thanks to a brisk shipping call. The bulk of this is from Northern sources and the lots are ultimately intended for Alaskan consumption, with the East buying considerable stock outright in this market. The increase in offerings has increased much more than local receipts would indicate, as many of the local dealers are trading quite heavily in car lots at Petaluma, the stock being intended for storage at Los Angeles. Storing in local ice houses has been only nominal so far this season.

Thurs. Fri. Sat. Mon. Tu. Wed	
Extras	.....25½ 26 25½ 25½ 26 26½
Extra 1sts	.....25 25 25 25 25 25
Ex. Pul.	.....23½ 24 24 24 24½ 25
Ex 1st pul.	.....23 23 23 23½ 23½ 23½

Further advances on Young America cheese with Flats fancy and Jack steady at ruling quotations marked the week in the cheese market. Any lots that are available are still being traded for Eastern account.

Y. A.'s	.....23c
Fancy Calif. Flats, per lb.	.....21 c
Monterey Cheese	.....16@20c

DECIDUOUS FRUITS.

With the available supply of fancy grades about forty per cent short of holdings at the same time last year, prices on Newtown Pippins have advanced during the past week. The Bellflowers left on hand are of such poor quality that they do not warrant quoting.

Apples:

Bellflower, box	.....Not enough to quote
Newtown	.....\$1.20@1.50

CITRUS FRUITS.

Weather conditions have been unfavorable to the market and prices held generally unchanged under very slow sales. Fancy navel is ten cents per box higher.

Oranges:	
Navels, fancy, per box	.....\$2.50@2.90
do, choice	.....1.85@2.25
Tangerines	.....1.50@2.00
Lemons:	
Fancy, per box	.....3.25@3.50
choice	.....2.50@2.75
Lemonettes	.....1.50@2.00
Grapefruit, fancy	.....2.25@3.00

DRIED FRUITS.

Dried fruit buyers practically took a vacation during the past week, as the trade—despite a few announcements to the contrary—is very much worried over the international situation. No changes were reported in the prices previously offered.

[Net to growers, bulk basis, f. o. b. shipping point.]	
Apples, new crop	.....5½ @ 6 c
Apricots, per lb.	.....15 @16½c
Figs, black, 1916	.....6 @ 6½c
do, 1917	.....5½ @ 6½c
do, white, 1917	.....6 @ 6½c
Callmyrna, 1917	.....9 @12 c
Prunes, 4-size basis, 1917	.....5 @ 5½c
Prunes, 1916	.....5½ @ 7½c
Pears	.....6 @ 7½c
Peaches, 1917	.....6 c

NEXT POTATO CROP LIKELY TO BE LIGHT.

Reports from various parts of the State indicate considerably greater acreage planned for potatoes in the smaller-producing districts and large amounts to be grown in a multitude of small plantings, but all the news we can get from the Delta district seem to indicate not much greater acreage than last year. Growers have until June to make up their minds and seem in no hurry. Beans seem to many growers as promising as potatoes, and they cost about one-fifth as much for seed, so many acres will grow beans rather than potatoes unless seed of the latter comes down materially.

The feeling is general that prices will not be much lower until new potatoes come down in June. Canadians are alarmed lest they will not have seed enough; we are importing from Australia; Eastern U. S. is paying \$2.50 to \$10 per bushel for seed potatoes; and it was reported that on Mar. 1 there were only 1200 cars left on the Coast. Geo. P. Weldon of the State Horticultural Commission fears great reduction of the average crop per acre in 1917, due to use of inferior and diseased seed.

HOPS.

Trade in hops has been featureless during the past week. While some curtailment of acreage is reported for Oregon, present indications are that California will raise nearly as large a crop as was produced last year. Quotations remain unchanged.

Sacramento	.....6 @9c
Sonoma	.....7½ @9c
Mendocino	.....8 @9c

OILS.

The Standard Oil Company announces a reduction of one cent per gallon on Eocene oil, in cases of two 5s only. The quotation on this offering is now 19 cents per gallon.

Pearl Oil, per gal.	.....9c
do, cases two 5s	.....17c
Headlight, bulk	.....10c
do, cases two 5s	.....18c
Eocene, bulk	.....11c
do, cases two 5s	.....19c
Gasoline, bulk	.....20c
do, cases two 5s	.....28c

LOS ANGELES.

Los Angeles, March 13, 1917.

Receipts of week ending Mar. 13, 1917—305,730.

Receipts of week ending Mar. 13, 1916 357,450.

The market the past week was without feature. More rains and improved conditions of pastures, promising an early increase in production, caused a weaker feeling. But in the absence of stocks last week's closing prices maintained up to Monday, when a number of sales of extras were made on call at 32½c, a decline of ½c, though before the close the market worked back to 33c. Chicago and New York held steady throughout the week at last week's closing prices, 40c for extras in Chicago and 40½@41c for extras in New York. Receipts for the week were not heavy and were pretty well taken care of by the consuming trade, though the market was a little heavy towards the close of our review week. Tuesday there was no change in the Chicago market. On call only one sale in boxes of extra cut and wrapped at 33c.

Extra	.....33c
First	.....32c
1917	.....Wed. Thu. Fri. Sat. Mon. Tu.
Extra	.....33 33 33 33 33 33
1916—	
Extra	.....27 30 30 30 28 28

EGGS.

Receipts (railroads) for week ending Mar. 13, 1917—2918 cases.

Receipts (railroads) for week ending Mar. 13, 1916—4271 cases.

A rather firm market and fair demand was had the past week. Receipts, while very good, were all wanted by the consuming trade or storage buyers and prices ruled much the same as at the close of our last review. Monday, when in sympathy with declines East, prices went off ¼@½c, but at the decline the demand was good. While prices are lower than a week ago they are still 6c higher than this time last year. Chicago declined 2½c on first, and New York 7½c on first. It was this shrinkage in values that caused the market to break here. Tuesday there was a further break in the market. Receipts were not heavy, but with the Eastern markets sharply lower since last week the disposition of buyers here was to bear prices. Extras declined ½c, case count 1c and pullets 1c.

1917	.....Wed. Thu. Fri. Sat. Mon. Tu.
Extra	.....26 26 26½ 26½ 25 25
Case ct.	.....24 25 25½ 25½ 24 24
Pullets	.....24 24 24 24 23 23
1916—	
Case ct.	.....18 19 19½ 18½ 19 19

POULTRY.

Fairly active and firm market was had the past week. No Eastern poultry in and local arrivals only fair. This with a strong demand from the hotels and restaurants to satisfy the tourist demand, causing dealers to bid up for everything, hens, young stuff, turkeys and ducks all moving without trouble.

We quote from growers:

Broilers, 1½ to 2 lbs.	.....32@33c
Fryers, 2½ to 3 lbs.	.....28c
Hens over 4 lbs.	.....22@23c
Hens, under 4 lbs.	.....21@22c
Ducks	.....22@23c
Geese	.....18@19c
Roosters, 3 lbs. up (soft bones)	.....26c
Turkeys, heavy, 12 lbs. and up.	.....29@30c
Turkeys, light	.....24@25c
Squabs, live, per doz.	.....\$1.50@3.00
Dressed	.....3.75@4.85

CABBAGE AND CAULIFLOWER.

A draggy and weak market was had the past week. Receipts of cabbage were fair, but the quality was poor. But little of it fit to ship. Good firm cabbage if here would have sold fairly well at quotations, \$2@3 per cwt. Cauliflower like cabbage met with a poor market. Most of the arrivals were not fit for shipping. Season pretty near over. What little buying done was at \$1.20@1.30 per standard crate to growers.

HAY.

A more quiet and weaker market was had the past week. Receipts were much better and the high prices caused buyers to hold back and go slow. Dairymen, too, feeding more green stuff and pastures better all of which had its influence upon the market.

We quote f. o. b. Los Angeles:

Barley hay, ton	.....\$20.00@22.00
Oat hay, ton	.....21.00@23.00
Alfalfa, northern, ton	.....18.00@19.00
Alfalfa, local, ton	.....21.00@22.00
Straw, ton	.....11.00@12.00

BEANS.

The market brightened up the past week and there was a good demand.

Limas were advanced \$1 per cwt, and pinks 75c@\$.1, under buying from the country for seed. The consuming trade was inclined to hold back at these prices.
We quote from growers:

Limas	.....	\$13.00@15.50
Large white	.....	12.00@12.50
Small white	.....	12.00@12.50
Pinks	.....	9.00@9.50
Blackeyes	.....	7.50@8.00
Tepary	.....	5.75@6.25

Special Livestock Market Report.

San Francisco, Mar. 14, 1917.

CATTLE are still scarce and steers are marked up a quarter. Some stock is coming from packers' feed lots in Nevada and a few cars of cows came down from Oregon last week.

Steers, No. 1	.....	9 1/2 @ 9 3/4 c
No. 2	.....	9 @ 9 1/4 c
Cows and Heifers	.....	7 @ 8 c
No. 2	.....	7 @ 7 1/2 c
Bulls and Stags	.....	6 @ 7 c
Calves, light	.....	9 @ 9 1/2 c
Medium	.....	8 1/2 @ 9 c
Heavy	.....	7 @ 8 c

HOGS are all marked a half cent higher than the record prices of a week ago and the end is not yet seen. There is promise that high prices will stay a long time, and wise farmers are sacrificing none of their good breeding stock. All local arrivals are from California and they are scarce. Yet, while the high prices tend to hold back some stock because it is now profitable to feed the high priced grains, it is noticed that many underfinished pigs are being sent to market in apparent fear of a break. Not so many No. 1 hogs are being marketed.

[Rough docked 20 pounds, piggy sows, 40 pounds, stags 80 pounds.]
100 to 150 lbs. 12 1/4 @ 12 1/2 c
150 to 300 lbs. 13 1/4 @ 13 1/2 c
300 to 375 lbs. 12 1/2 @ 13 c

SHEEP: There is nothing to say about sheep because there is no slaughter stock in growers' hands to talk about. Prices are nominal for lack of stock movement.

Prime Wethers 10 1/2 @ 11 c
Ewes 8 1/2 @ 9 1/2 c
Lambs 12 1/2 @ 13 1/2 c

WOOL: The spring clip is on. Most of it was sold on the sheep's backs; though at least one district, Mendocino, seems unmovable. Cloverdale offers are 45 cents, and Oregon 40 cents. Everything else was nearly "sewed up." Sacramento Valley, spring clip. .39@40c
Mendocino, year's Nominal
Southern, spring clip 28@30c
Southern, 7 months 15@18c
Imperial Valley, 7 mos. 14@15c
Nevada, year's 31@32c

HIDES are still nominal for lack of movement.

Steers	.....	23 @ 25 c
Cows	.....	23 @ 25 c
Light hides, 25 to 48 lbs.	.....	25 @ 26 c
Kip	.....	20 @ 22 c
Calf and veal	.....	29 @ 30 c
Dry Hides	.....	32 1/2 @ 33 1/2 c
Dry Kip	.....	35 @ 36 c
Dry Veal and Calf	.....	38 @ 40 c
Pelts, long wool	.....	\$3.25@3.50
Short wool	.....	1.25@1.50
Horse hides, wet, large, ea.	.....	5.00@5.50
dry, large	.....	3.00@3.50

Los Angeles, March 13, 1917.

CATTLE: While the market the past week was firm there was no especial life to the trade. The continued high markets East are making feeders rather independent and except where their cattle are ready to come forward, are inclined to hold for higher prices. The supply continues to come from California and Arizona and some very good cattle were in during the week. Killers were all in the market, but while wanting supplies, were not anxious buyers, though took what cattle offered at old prices.

Per cwt. f. o. b. Los Angeles:
Beef steers, 1000 to 1100 lbs. \$9.00@9.50
Prime cows and heifers 7.50@8.00
Good cows and heifers 7.00@7.50

HOGS: There was another sharp advance in this market the past week. The sensational prices now being paid on the Chicago and Kansas City markets caused packers here to bid up to keep them from going East. Receipts during the week were not large, but some very good hogs were in, though mostly light weights. California and Arizona furnished most of the supply. Packers were all in the market and offerings were disposed of without trouble.

Per cwt. f. o. b. Los Angeles:
Heavy, averaging 250@300 lbs. \$11.00@11.50
Mixed, 200@250 lbs. 11.50@12.50
Light, 175@200 lbs. 11.50@12.50
Rough docked 20 pounds, piggy sows 40 pounds and stags 40 per cent.

SHEEP: The offerings continue light and the market remains firm under scarcity. Utah and Idaho furnished most, with a few small lots from California. Killers all wanted supplies and bid freely for what few were on sale, but refused to advance prices, which are thought already too high. Yet the market is firm.

Per cwt. f. o. b. Los Angeles:
Prime wethers \$9.00@10.00
Prime ewes 9.50@10.00
Yearlings 9.50@10.00
Lambs 13.00@14.00

CALVES: Offerings very good and market rather slow. Prices unchanged, selling at \$8.50@9.50 per cwt.

No. Portland, Ore., Mch. 12, 1917.

CATTLE: Today's receipts were rather small—only 1400 head. Demand from large packers was rather small, due to the heavy receipts of last week, but there was a good demand from local and coast butchers, who took their supply early at steady prices. The bulk of the day's trade was on a 10 to 25c basis. Best beef steers brought \$9.50 to 9.65; with very good kind at \$9.25 to 9.50. Good steers sold from \$8.55

to 9.00; with medium kind at \$8.25 to 8.75. Best cows sold at \$7.50 to 7.75; with very good stuff going from \$7.10 to 7.25. One prime heifer brought \$9.00 with a few other sales from \$6.75 to 8.00. The bulk of the good bulls

Special Citrus Market Report.

Los Angeles, Mch. 13.

Shipments of citrus fruits from Southern California from November 1 to March 11: Oranges 11,163 cars and lemons 2161 cars. Same time last year: Oranges 9165 cars and lemons 1975 cars. Shipments from Central California from November 1 to March 5: Oranges 4035 cars and lemons 161 cars. Same time last year: Oranges 4191 cars and lemons 140 cars.

With more favorable weather and frost damage reported in Florida, the markets at the East the past week did a little better both on oranges and lemons. Buyers took hold more willingly and bid a little stronger for the best known brands of highly colored fruit. Poor stock, however, showed no improvement. Shipments from Southern California for the week were 1486 cars. Shipments of lemons from Southern California for the week were 158 cars. It was this falling off in shipments rather than any improvement in the demand that caused a stronger tone to the markets East.

Locally the market shows no change from a week ago. Of course Orange Day brought a very good demand for the time being, but since the opening of the current week packers have

sold from \$6.50 to 6.75.

HOGS: Hog prices continue to go up by leaps, an advance of 50 to 75c being made today. Three loads of prime heavy hogs bringing \$14.35 with several bunches at \$14.25; the balance of the run was taken at \$14.00 to \$14.10. Pigs advanced 55 cents, bringing from \$12.55 to 13.35.

SHEEP: The sheep receipts were rather small, only two loads being received; demand was light and prices steady. One load of wool ewes brought \$9.75, a load of shorn wethers at \$10.00. There have been no lambs offered here this week; sheep are being quoted at \$12.90 to 13.10.

brought rather sparingly. The popular size highly colored oranges met with a very fair demand at 1@1 1/2c per pound in the grove picked, but others slow sale, the market still being full of culls which are cheap. Grapefruit in fair demand at 1 1/4 @ 2c in the grove picked.

AUCTION SALES.

New York, March 12.—Sixteen cars navel and two cars mixed oranges and three cars lemons sold. Market higher on oranges and lemons. Weather fair. California navels averaged \$2.00 to \$3.80. Lemons averaged \$2.75 to \$3.40.

Boston, March 12.—Sixteen cars oranges sold. Market stronger and higher on both oranges and lemons. Califor-

Make Your Own of high quality—to positively exterminate the Squirrel Poison pest—at low cost. Guaranteed sure death to Squirrels and Gophers. Kills thousands of these crop robbers yearly. Only 25c for formula enables you to rid your field, grove, orchard, or garden of these destructive animals. Formula guaranteed—money back if it fails.

C. H. KAUFFMAN,

Rm. 300, 427 So. Figueroa St., Los Angeles, Cal.

nia navels averaged \$2.45 to \$3.45. Lemons averaged \$3.00 to \$3.45.

Philadelphia, March 12.—Twelve cars sold. Market strong on oranges, but unchanged on lemons. California navels averaged \$1.85 to \$3.30. Lemons averaged \$2.75 to \$3.30.

ALFALFA LAND

FOR DAIRYING.

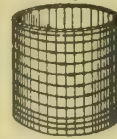
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SEND FOR SAMPLES. THEY TELL THE STORY
LABEL DEPARTMENT
SCHMIDT LITHOGRAPH CO.
SAN FRANCISCO

1917

1917 FEBRUAR

SUN	MON	TUE	WED	THU	FRI	SAT
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	1

APRIL 1917

SUN	MON	TUE	WED	THU	FRI	SAT
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	1	2

MAY 1917

SUN	MON	TUE	WED	THU	FRI	SAT
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

1917

SUN	MON	TUE	WED	THU	FRI	SAT
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
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1917

SUN	MON	TUE	WED	THU	FRI	SAT
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

1917

SUN	MON	TUE	WED	THU	FRI	SAT
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

All the year around tractor

THE SPRING RUSH is the busy season for Yuba tractors—no time for adjustments, not a moment to be used in making repairs. The busy plowing season is a test of the stamina and sturdiness of the Yuba.

But no matter how successfully a tractor comes through this endurance test, it is not necessarily a good investment. The spring plowing season does not last long.

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I am interested in Model 12-20. Model 20-35.

Name _____

Town _____ State _____

P. O. Box _____ Size of farm _____

[Check main crop raised]

___ Fruit ___ Rice ___ Grain
___ Grapes ___ Hops ___ Alfalfa

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THE PACIFIC RURAL PRESS

SAN FRANCISCO

MARCH 24, 1917

LOS ANGELES

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Community Building With a Dairy.

[Written for Pacific Rural Press.]

WHEN the LeBarron Est. Co. took over the management of the 200-acre dairy ranch known as the "home place" in 1915 they had several objects. The place had been rented for 25 years; and the tenants had badly overstocked the land and let the fences and buildings run down. When the lease expired in 1915, it was either a case of fixing up the fences and buildings and re-leasing to a tenant who would further run down the soil on the place, or fix things up and run a dairy themselves, with an intelligent soil-building policy in mind. Rational means of restoring fertility were devised and practiced.

Besides the 200-acre ranch, they were large owners of other dairy land in the district and also heavily interested in the local bank. For these reasons they consider that what is good for the dairy industry in the community must eventually be good for themselves; and it was more on this account than with the expectation of making their dairy pay better rent on the "home place" that they decided to manage the place themselves.

Former tenants had virtually "dairied" the soil to death, however surprising that statement may be to those unfamiliar with the locality. As is customary on most dairies of the section, the tenants had farmed only the lower, more level lands because of the tendency of the steeper hills to wash badly during the winter, when plowed and planted to grain or other field crops.

The lower land was continually cropped to hay, with a consequent reduction of fertility which might have been partially overcome by systematic distribution of manure and rotation of crops. But the average tenant in the district considers manure a liability rather than an asset because it has to be hauled, so the land got little fertility from that source.

The hill pastures also became poorer year by year because they were overstocked, the practice being to keep enough cows to consume every spear of grass in the spring season when the grass was growing. This did not allow the grass a chance of going to seed; or at best a very small amount of it, and resulted in a decrease of grass each year.

Good Cattle.—But fertility is not the only improvement contemplated by the LeBarron Co. on their own and neighboring ranches. They realize that the increasing cost of dairy operation demands a better-producing cow; and with that end in view, they have established a herd of purebred Ayrshire cattle; not expecting other dairymen to do likewise, but with the idea that more purebred bulls will be used on the grade herds as a result of their experience. It is interesting to learn from one of the firm that while dairymen a short time ago were looking for cheap bulls, and

the cheaper they were the better they liked them, a good many are buying purebred sires now and evincing a desire to breed higher producing cows.

Better Building.—With the demand for better farming and better breeding in the section has also come a demand from the market side for a better quality of cream and dairy products to secure the maximum price. To aid in this respect, one of the first works of the company was the construction of modern dairy buildings. The old barns on the place were utilized in the construction of the milking, calf and hay barns, all

three of which are connected with each other to insure convenience as well as sanitation. The milking barn provides for two strings of cows, having a well-drained concrete floor and good light and ventilation. Adjoining the milking barn and connected with it by an inclosed passageway is a well-lighted and ventilated milk room, also having a concrete floor and protected from flies by liberal amounts of screen. A steam boiler operates the separator and furnishes hot water for the washing of utensils. Besides the protection furnished the cows by the milking barn from the cold and wet weather of winter, long shelters have been built in the pastures. These are sided up on three sides and allow shelter from the weather at all times.

Restoring Fertility.—While it is still too early to show much progress in the fertility building scheme, an outline of the work started will give the reader an idea of what this company has undertaken. They are inaugurating a very different method of pasturing the hill land. The first year they had possession of the ranch they had only ten cows on it; and while in previous years the hills had been barren after the pasturing season, that year there was a heavy growth of bur clover all over the ranch. This was allowed to go to seed as well as most of the other wild grasses. A much heavier growth of grass is anticipated. Cross fencing is another subject which will be given consideration, as it will

permit better pasture regulation. Still another change of practice will be to keep the cattle off the pasture lands till rather late in the spring, giving the grass a chance to grow. It is reasoned that supplementary feeds have to be furnished the cattle anyway for year-round milking; and that it is poor economy to hurry the stock onto the pasture as the same amount of feed would have to be furnished later anyway; and the grasses suffer materially.

Last year being an extraordinarily dry one, some of the experiments in farming the lower lands did not turn out very well; but in normal

(Continued on page 372.)



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EDITORIALS

THE RIGHTS OF FREE MEN.

AS WE write on Tuesday it seems to be in doubt whether we are actually at war with Germany or not. Until today there has also been some doubt whether the American people are at war with the railways and their employes or not. There should be no such doubt in either case. Of course, as citizens of the world, we are automatically and everlastingly at war with any combinations of people at home or abroad who declare their purposes to infringe upon our rights as freemen, or by interference with the operation of public utilities infringe upon those rights without such declaration. Nations of men abroad and combinations of men at home must be taught that neither their necessities, as they are disposed to call them, nor their desires and ambitions, give them justification for passing beyond the exercise of their own rights into infringement upon the rights of others. If there is no way to arrest infringement of our rights except to win at the wager of battle, then we are at war, until we secure from the world international law and obedience to it, or from our own people national law which shall insure uninterrupted operation of public utilities, and make unlawful any human attitude or action which shall infringe upon our right to live and move and have our being in all things which are manifestly for the public good.

Whether we are at war with Germany or not does not seem to matter much at the moment, for Germany is acting as though a state of war existed—sinking ships, plotting, spying, exploding, and what not: things which automatically make war although more safely undertaken under cover of peace and declarations of good will, if a nation has the right kind of a conscience for it—but we are not intending to hold forth on that subject this week. At the moment a by-product of the prospect of war is a more important matter than the question of participating in war.

THE RAILWAY STRIKE PASSES.

THE United States has narrowly escaped making itself a laughing stock in the eyes of the world. We have recently been reasserting with considerable eclat the principles announced by our forefathers that true government is based upon the consent of the governed while we have been for months past frightened nearly out of our industrial life by the threats of elements of our own population which have been acting as though they considered themselves ungovernable. We have been preaching the consent of the governed and tolerating refusal to be governed. The chance of war has awakened us from this ridiculous anomaly and paradox, and has, we hope, settled forever the supremacy of public right in the uninterrupted maintenance of public utility—no matter what private rights of profit or wages may be involved in the operation. And settlement has arrived along two avenues which were surveyed by the forefathers and have been made smooth and straight by their successors for

several generations—the avenues of Liberty and Law. For a week past the business of the country has been paralyzed by the threat of a general railway strike to begin on the evening of March 19. At sunrise on that day, after almost continuous session for several days, representatives of the employers and employes and mediators designated by President Wilson, reached a conclusion, and the strike passed. The employing railways conceded the demands of the employes, and Secretary Lane, chief of the mediators, praised the railroad managers "for their high sense of obligation and their unwillingness to permit any embarrassment to the country at this time of extreme strain." Thus the railways agree to pay their employes something like fifty million dollars more per year than they have hitherto, without demonstration that they were entitled to it. It was a concession to their continued operation and uninterrupted public service.

SUPREMACY OF PUBLIC RIGHT.

THE result thus reached was a leap over a wall; it was not a creation either of Liberty or Law, for, at the moment of its attainment, one side surrendered its liberty because there was then no law which had passed the highest tribunal of justice and was dependable. The addition of fifty millions a year to railway pay-rolls may necessitate reprisals on the public interest and industry hereafter. Two things are, however, assured, and they are of incalculable value: first, the strike method of holding up public utilities is dead beyond resurrection; second, compensation of employes in public utilities will be determined by law, on the basis of investigation of rights thereto. For before the sun had reached meridian after it had dawned on the employers' concession, which Secretary Lane describes as patriotic, the United States Supreme Court rendered its decision that the Adamson law was constitutional, and the Chief Justice thereof made these declarations of the supremacy of public rights:

"Whatever would be the right of an employee engaged in private business to demand such wages as he desires, to leave the employment if he does not get them, and by concert of action to agree with others to leave on the same conditions, such rights are necessarily subject to limitations when employment is accepted in a business charged with a public interest and as to which the power to regulate commerce by Congress applied and the resulting right to fix, in case of any dispute, a standard of wages, necessarily obtains."

In other words, the Supreme Court holds that "the public interest begets a public right of regulation to the full extent necessary to secure and protect it." Also that the public right to have interstate commerce uninterrupted is a basic principle paramount to interests of the railroads or their operatives and subject to the supreme, unrestricted power of Congress to take any action necessary to maintain freedom and uninterrupted of interstate commerce.

BLUE SKY FOR CALIFORNIA.

OF COURSE, every State which puts out a pound of produce or merchandise beyond its own needs, or takes in a pound beyond its own production, has its industrial sky cleared by this incomparable declaration of the supremacy of public rights, but in the line of food products California can claim unique share in the transcendent azure. California counts distance of transportation to her markets by thousands of miles, while most States count by hundreds. California counts time of transportation by days and weeks, while most other States count by hours and days. California counts values in strictly perishable classes by hundreds of millions, while most other States count in millions. California counts carload freight rates in hundreds of dollars while most other States count them in tens. And when California can point confidently to the supremacy of public rights as a surety against any threat or menace of interruption by either strike or tie-up, she has a guaranty of increased production, which for volume, variety, and value is beyond the reach of most other States, and of development of which present achievements are but a promise. As one thinks of these things and

all they indicate in population, in prosperity and in Imperial Statehood for California and her rich and beautiful sister States upon this coast of the greatest ocean that is to be, it surely spreads a rosy glow upon our circumambient blue, and fills the heart with adoration for this new demonstration of the old American endowment—the supremacy of public rights!

This may sound a little fervid, and yet one only has to think a little to realize that it has naught too much either of heat or color. In contrast with the darkness and danger of the past it is not a ray too bright. We have had trainloads of scheduled perishables side-tracked all the way across the country in the past. We have had packing houses and freight yards full of our best products—lost after all labor and expense had been expended upon them. We have had embargoes placed upon shipments of stuff in prime condition because of the doubt whether wheels could be turned or not. We have seen a year's labor and outlay lost because some private interest refused a few days' action—hardship and loss brought upon thousands for the fancied rights of scores. In the public view such things are intolerable—and now, happily it has passed for all time.

The future of California demands that all avenues of public interest shall be held open by the supremacy of public rights. The face of the earth shall be open and free from barriers of private interests; the ocean shall be open and free from the menace by desperate inhumanity; the Panama Canal shall be open and placed beyond the possibility of seizure by European imperialism; the air shall be open for flight of men and the thoughts of men, without pollution by those who aim to prey upon our peace and prosperity. And all this we claim for California, of course, as a part of the indivisible nation in which we glory—this nation which has preached the supremacy of public rights to all the world for nearly a century and a half, and has but just discovered and laid hold upon its own most important share therein!

TOMATO TURNOVER.

THIS is not a kitchen recipe snatched by the printer from a "domestic gallery," to fill the space when the writer collapsed from the preceding flight of alleged patriotism. It is a fact of public interest that tomatoes have turned over, because it explains why buyers have been so busy contracting tomatoes long before the plants could safely go from seed-bed to fields which will still be for weeks too frosty for their comfort. We do not profess to know all about it, because canning commerce and finance are about as dark to us as the inside of a can when it goes into the processing vat, and yet we must express satisfaction if the activity of contracting buyers gives our growers this year a price nearer their deserts than they usually get, and nearer what the consumer has to pay when the product is up to him. There is perhaps another comfort in the demonstration of the fact that when our greatest canning combination ever was spiked up it did not shut the grower out of all the fun of making good contracts. It seems that after the great canning squeeze had placed its wholesale price on 1917 tomatoes at 92½¢ to \$1.05 per dozen, a smaller squeeze started in and lifted the price to \$1.20 per dozen—and got away with the price and rid of the goods. The successful invader has issued this statement:

"In surveying the tomato situation for 1917 our house came to the conclusion that \$1.20 was a fair opening price. We based our judgment on the continued heavy demand for tomatoes coming

California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau at San Francisco for the week ending at 5 p. m., March 20, 1917:

STATIONS	Part Week	Rainfall Data		Temperature Data	
		Seasonal To Date	Normal To Date	Max'm	Min'm
Eureka .....	.32	24.37	36.23	59	32
Red Bluff	00	15.67	20.04	66	34
Sacramento	00	12.19	15.96	66	38
San Francisco .....	.02	15.28	18.62	69	42
San Jose .....	.08	12.05	13.77	64	32
Fresno .....	.12	6.82	7.70	66	34
Independence .....	..	..	..	..	..
San Luis Obispo .....	.20	22.40	16.63	66	34
Los Angeles .....	.06	14.59	13.06	73	43
San Diego .....	.02	8.74	8.34	66	44

from the Eastern States and Europe and Canada, and on the heavy increase in the cost of materials used for canning. We refused to sell any portion of our pack of 200,000 cases at less than \$1.20. We held for the price and got it. Our entire pack has been disposed of and we do not look for the price to be any lower on 1917 tomatoes."

If the reasoning of the invading canner is right there may be a chance to give such a buoyant demand a few more tomatoes. This is a safer opera-

tion now than it might have been if the canning drive on tomatoes had been announced earlier, for then we might have gone short of barley because of the acreage going to love-apples. But it is pretty late now to make a new start from the seed. If, however, the seed beds are economically stretched it may be possible to increase the acreage with a good show of demand and no great risk in the investment.

By
the Editor

QUERIES AND REPLIES

Inquirer Must
Give Full Name
and Address

Corn for Grain or Forage.

To the Editor: I am taking care of a ranch and want to plant feed corn between young vines planted 7x9 ft. The land is black adobe. A neighbor tells me that after the corn has grown about six inches it should be thinned to one stalk to each hill and I should leave two ears on each stalk for a good crop. Please tell me if that is the right way to raise feed corn.—D. P., Cloverdale.

We suppose you mean by "feed corn" a crop to be cut in the roasting ear for green feed or the silo. If so, your neighbor is wrong, and even if he were advising about growing corn for ripe grain he would be a little too radical. On good land as a result of many experiments, three stalks per hill have produced more grain to the hill than one or two stalks and when more than four stalks there is usually less grain. You do not need to thin the ears unless you are growing samples for exhibition; it will not pay for the work. But if you are growing for green feeding do not plant in hills at all but in drills or furrows, planting rather thinly so the stalks will stand three or four inches apart. For the sake of the vines do not plant the corn too close to them and keep the rows at least 30 inches apart so you can keep up good cultivation both for the sake of the corn and the vines.

To Get Rid of Rabbits.

To the Editor: Please publish a way to get rid of rabbits, as they are destroying my garden. As fast as I can plant out the cabbage they take them.—A. F. K., Ripon.

Probably you will get most peace and garden truck for the money by fencing your garden with chicken wire netting—four feet wide, six inches let into the ground. If you do not care to do that you must sit in the window at dewy dawn and eve and shoot—or undertake the rather difficult job of poisoning. Take pieces of parsnips, carrots or apples about an inch through, open a little slit in each piece with a knife blade and prick in a crystal of strychnine. Put one piece on the end of a slim splinter and push the other end in the ground, so that the bait will stick up several inches above the ground. Rabbits like clean bait and like also to pull things out of the air. You might also prick strychnine into the soft parts of the stems of some cabbage plants and plant them outside the others—just to see what happens.

Heeling-in Trees.

To the Editor: I have heeled-in a good many trees this winter waiting for planting, and I have put them on the slant as I have seen others do but I do not know why I do this rather than stand them up straight. What is the reason for the slant?—Planter, Marysville.

We are not sure that we know all the reasons, but these two have satisfied us. First it is easier to put them that way, because they hold themselves in place for covering the roots, and it is also easier for you and better for the trees to lift them out than to pull them out. Second, when putting in on the slant the tops should always point to the southern sky, because the sun is low down and its rays hit the trees on the ends and not on the sides. Activity in the tree begins from sun heat on the bark and a tree slanting to the south gets less of it than if straight up and very much less than if the slant was toward the north, which would bring the sides of the trees at right angles to the sun's rays. Therefore a slant to the south keeps the heeled-in trees dormant longer.

Pruning the Almond.

To the Editor: Should almond trees of a few years' growth have the ends of the branches cut off the same as peach trees? If pruned that way what effect will it have on the trees?—D. W. P., Escalon.

The effects of systematic pruning of the almond are similar to effects of such treatment of the peach, viz.: larger fruit and growth of more vigorous bearing wood. But such treatment of the almond is not prevalent, for two reasons, at least: the increased cost of handling the trees and the fact that, on the average, the almond is not as sure a fruit-setter as the peach and it is therefore not so safe to freely reduce its wood capable of bearing. It is also a fact that as the almond is a much lighter fruit, there is not such requirement of limiting the number of fruits to save the tree from breaking. Still there is good reason to believe that it would be profitable to prune the almond in the same general way as the peach, though probably not so severely.

Cows in Clover.

To the Editor: I have 30 acres of irrigated land near Escalon. When would be the best time to check and seed for alfalfa? How many cows would I need to net \$100 a month? How can \$2,000 be used to the best advantage on this unimproved land?—Subscriber, San Francisco.

Get after it immediately or you will be too late to get good results this spring. If you do not care to move so fast, start in checking this summer, get the land well settled, by wetting down before the water goes out of the ditches, and sow next fall. How many cows it will take to net you \$100 a month depends on you, on the cows and on the prices of butterfat. You might do it with 20; you might miss it with 50. The best way to spend the money you speak of would be to put in alfalfa and buy cows—if you know how to handle them.

Cutting Wheat to Reduce Growth.

To the Editor: I have a stand of bluestem wheat. In the beginning it was all right; but now it is altogether too heavy and thick. Neighbors tell me to cut it. What would you advise?—F. G., Calistoga.

Wheat can be mown or even lightly pastured (when the ground is dry enough) without reducing the grain crop. The result to be expected would be increased stooling—more heads on shorter stems. But this must be done before the grain is too far advanced, and it requires experience to determine that. If your neighbors have themselves done the thing to advantage they ought to be competent to advise you, for they can see what they are talking about and we cannot. To cut too late will reduce the crop.

Apples in Bad Company.

To the Editor: Winter Pearmain apples are standing 18 feet from eucalyptus trees, also 18 feet apart. They are 8 years old, blossom well and have hardly borne at all. It is a silt soil. Summer apples bear in the same row 150 feet distant on the same soil. Shall we prune severely this year, or light? They were not pruned last year but were pruned heavily the year before. They are irrigated three times—June, July and August.—J. R. W. Corcoran.

We should not prune at all this year. Cutting hard into apple trees of bearing age often throws them out of commission for a time. Keep up irrigation and spread some manure. We doubt, however, if you get much from the trees. They are too near to the eucalypts and too near to each other to behave well.

Tangle-foot for Birds.

To the Editor: English sparrows and linnets have taken most of our fruit buds, and take all of our garden stuff as soon as the plants are through the ground. We are afraid they will do much damage to the cantaloupe crop. We are all shooting and poisoning, but there are so many we scarcely miss those we kill. In England they used a sort of bird-wax on the limbs of trees and hedges, which was a success in holding them fast. Can you tell me how to mix any such wax: resin and what else?—W. A., Turlock.

Dissolve powdered resin in castor oil, using heat to promote the solution. The oil and resin will combine in any proportions. Add resin until the stuff will hold fast enough to catch the bird. We doubt if you will catch enough birds to count much, but you may put up a good scarecrow of fluttering birds to frighten the flocks away. We would not put much of this stuff on trees you care anything for. It might be more effective daubed on small ropes from tree to tree or on the tops of fence boards and posts. Birds naturally take to such horizontal perches. You, of course, incur the risk of trapping song birds which the law protects and having some fines to pay.

Cutting to a Bud.

To the Editor: In pruning my young apple, pear, peach, and prune trees, I cut so as to leave not more than about a quarter of an inch above the bud to which I cut. Some tell me to cut even closer to the bud, while others tell me to leave half an inch. What would you suggest?—D. S., Santa Rosa.

In cutting to a bud, it is desirable neither to leave too long a stub nor to expose the backing of the bud. In one case it cannot heal over well; in the other, the drying back is apt to kill the bud. The best rule we know is to bring the blade to rest on the point of the bud and cut straight across. Sap flows to the bud at an angle from the opposite side of the twig so that too much of a stub above the sap stream would simply die out and could not heal over.

Apricots to Windward.

To the Editor: Will you kindly inform me what makes an apricot tree grow towards the prevailing wind while all others grow with the wind?—Nature Observer, Salinas.

You must ask the Lord who made the trees with that amount of spunk. We can only guess that his purpose was to teach apricot growers that they must head into their difficulties bravely and overcome them. If we were now exhorting prune and apricot growers to improve their attitude toward co-operation we should point to the apricot tree and say: "Go to it, boys, like a 'cot: don't turn tail like a prune!" And we are not sure that such is not the voice of the Lord.

Planting Sorghum.

To the Editor: Have been reading in the last issue of the Rural Press about sorghum and would like to know which is the best way to prepare ground which is weedy. It was plowed last fall and has been overflowed by creek lately. It is a sand sediment soil which overflows every year.—C. F. B., Yolo.

If you have a good crop of weeds now plow them under as soon as the ground will stand it and let it lie. Lightly disk out the weeds which start by planting time—which is when the ground is warm and frost danger over early in May. Sow so as to have ample room for cultivation and don't forget to do it both for moisture and weed control. Read carefully the suggestions on page 298 of our issue of March 10 last.

Transplanted Onions.

To the Editor: Can a crop of California red onions be grown from plants transplanted during the next month, or will it be too late for that kind of onion? Which is the best kind of seed to sow now for a fall crop—one that will keep best?—W. B., Glenn.

Yes: if moisture holds in the soil and a few late showers help them to catch on. Red onions can be transplanted as late as any other, if the plants do not get too large, but the crop will come later and therefore usually worth much less money. The Southport White Globe seems to have the call on popularity for lateness and long-keeping. Of course you are starting rather late for interior upland situation.

Who's Who and Why in Calif. Prune and Apricot Growers.

[Written for Pacific Rural Press.]



T. S. Montgomery.

Facts of Interest to Growers.

Outgrowth of Growers' Information Committee organized May 29, 1915.

Incorporated Feb. 23, 1917, with \$505,000 subscribed out of the total capital of \$2,500,000.

Over 4,000 prune and apricot growers had, on Mar. 15, signed up their crops in the Association.

Twenty-four trustees elected by subscribers by districts and one appointed by State Market Director, chose 13 directors living in 7 counties.

All officials have unqualified respect and confidence of growers in their districts.

The organization will fail May 1 unless \$750,000 in stock and $\frac{3}{4}$ of the total acreage of prunes or apricots shall have been subscribed.

Sale of crops to outside packers this spring may bring failure and loss to all.

It is estimated that \$85,000,000 are invested by growers in prunes and apricots.

Biggest prune crop was 210,000,000 pounds in 1912. High prices due to short crops since then have stimulated planting, so in five years the crop may be 400,000,000 pounds.



Jos. H. Bone.

Officials Command Confidence.

When a president was required for the organization that is to represent at least $\frac{3}{4}$ of the \$85,000,000 prune and apricot industry, the growers' representatives elected a man who had been 40 years in the real estate business in their midst, proving his words by his deeds. They chose a man who started as a newsboy without a dollar and who is now president of a leading bank in his district and president of the Agnews State Hospital; who received the highest number of votes of the growers themselves in both their primary and final elections of trustees for their organization—T. S. Montgomery of San Jose, a man with a kindly face showing the marks of many years, but capable of a most delightful twinkle when he says that a real estate man can be as honest as anyone.

For a general manager, they chose a man who has grown and packed prunes and apricots in a large way in Santa Clara Valley for 25 years;

and every year of it, has spent a month or more getting next to the Eastern dealers and their markets. H. G. Coykendall and two or three associates put big money into growers' pockets last year. When they discovered other California packers depressing the prune market by offering large quantities of fruit at $3\frac{1}{4}$ cents in the Eastern market before the crop was set and before the packers had contracted with growers for the purchase of that fruit, Mr. Coykendall and his brother, through their Eastern brokers, bought 15,000,000 pounds of these "short" sales, representing $\frac{1}{4}$ of the entire Santa Clara crop. They gave out the news that the other packers must have the prunes; and the growers who held on according to the Growers' Information Bureau advice made money.

When the old Cured Fruit Association had held a thousand cars of prunes over a year, they wanted to sell at $1\frac{1}{4}$ cents; but the Coykendalls sold them at $2\frac{1}{4}$ cents.

The merry war has left H. G. slightly gray, but ruddy, genial, portly, and able to take advantage quickly of every situation in dried fruit marketing.

Secretary-Treasurer.—When the prune and apricot growers got tired of being told always by dried fruit buyers that there was a tremendous crop on the other side of the Valley and in other parts of the State, they selected leading growers of every

Selling Crops Now May Bring Disaster.

The man who contracts his 1917 prunes and apricots now is not wise. Eastern retailers are forcing jobbers as never before. The jobbers are insistently ordering now on rising prices quoted them by California packers. Packers are buying from growers at 6 cents basis and upward to cover these orders.

Eastern food riots and newspaper talk about food shortage, the relative cheapness of dried prunes and our stocks of apricots, the fact

that many retailers cannot get enough canned fruits even of the 1917 crop, the prosperity of Eastern workers, the approaching control of the crop by the Association—all these conditions are forcing dealers to contract ahead for as much as they can get.

If the Association were complete, they could sell $\frac{3}{4}$ of their tonnage within a week at prices to be named by the Association when the crop is assured, is the emphatic statement of its General Manager, H. G. Coykendall.

Over 4,000 growers have thus far signed over their crops to the Association. Secretary-Treasurer

J. H. Bone states that over 90% of the extension agreements have been signed and most all of the rest are expected to come.

The organization is certain of success; except for one danger. If too many growers contract their crops to outsiders, they will kill the Association. Then its 4,000 members will rush to sell their crops and the

market will break. Those who have already made contracts will find much of their fruit rejected. If they do not kill the Association, then its members will get a higher price per pound than the outside contracts now being offered.

If prices go up, as there seems every reason to believe they will if the Association shall become fully organized, growers who contract crops now will lose the difference. If prices go down, much of their fruit must be rejected.

And the blossoms are not yet open on prune trees; while an unknown number of them on apricots are blasted by rain and frost.

California investigations made under direction of State Commissioner Hecke show that aphids will colonize on the Japan pear root; and while they may not cause as much damage as they do in working on the French root, it is plain that their board and lodging must cost something to the tree.

ABOUT THE DIRECTORS.

The president, vice president, and manager are directors.

W. G. Alexander, State Market Director's appointee, worked up from bookkeeper to General Sales Manager Sperry Flour Co. In 8 years quadrupled space required for Keystone Wholesale Grocery Co.

G. C. Alexander, Sonoma county, prominent prune grower.

F. A. Brush, Sonoma County, one of the largest and best farmers in the county, director 15 corporations, president of home bank.

H. C. Dunlap, Napa county, one of foremost young fruit growers.

D. Felsenthal, Ventura county, highly respected apricot grower.

C. G. Hamilton, Riverside county, manager most successful local co-operative dried-fruit association in the State.

J. O. Hayes, Santa Clara county, one of most extensive fruit growers.

A. Kammerer, Santa Clara county, president and general manager Cal. Farmers' Union, Inc., and large fruit grower.

Nathan Lester, Santa Clara county, well known fruit grower.

J. W. McAulay, Tulare county, progressive fruit grower.

THE TRUSTEES.

Four candidates were selected from each district except number four, in a primary election by ballots mailed to all growers who had signed up in the organization. At the final election by mailed ballots, two of the four were chosen. In district four, 12 trustees were elected from 24 candidates.

Wm. J. O'Connor	Butte
F. W. Wilson	Yolo
Henry Wheatley	Napa
Henry C. Melone	Napa
P. W. Bussman	Sonoma
A. B. Abshire	Sonoma
Geo. W. Glendenning	Santa Clara
J. J. Stanfield	Santa Clara
Irwin E. Pomeroy	Santa Clara
E. E. Johnson	Santa Clara
J. S. Williams	Santa Clara
R. P. Van Orden	Santa Clara
Jos. H. Bone	Santa Clara
Fred L. Barnhisel	San Benito
Henry Hecker	Santa Clara
Frank T. Swett	Contra Costa
J. C. Shinn	Alameda
Frank DiFiore	Santa Clara
M. J. Madison	Alameda
F. E. Bagnall	Ventura
L. E. Mills	Ventura
E. O. Eggen	Riverside
W. F. Riesland	Riverside
J. W. Arthur	Tulare
Arthur Swall	Tulare



H. G. Coykendall, General Manager.

(Continued on page 358.)

April-Pruned Grapes Did Well.

[Written for Pacific Rural Press.]

Being new at grape growing, and, like others in similar circumstances, being interested in the intercrop, J. W. Buchanan of Stanislaus county did not know last spring what to do with his 1800 Thompsons which had been planted the spring before as year-old rooted cuttings. They were spread out over the ground in April when Farm Adviser C. M. Connor called on Mr. Buchanan at the latter's request. He wanted to raise another intercrop of blackeyes; but he didn't want to buy stakes, and it was outrageously late to prune. Even Mr. Connor was stumped and he asked the College of Agriculture what to do. Being advised to prune them, anyway, all but one or two canes were cut off to spurs under a foot long, 2½-foot stakes were set for temporary use, and the beans

were planted. The vines bled heavily; but this winter do not seem much the worse for their late pruning, especially on the heavier soil. Some of the vines bore as many as 12 bunches of grapes.

Many slender waterspouts were produced on the vines where the soil is heavier, and many laterals on the fat fruit canes, which grew out of the wood left at the late spring pruning. The last year's wood is in fine shape. On a sandy strip where the subsoil is unknown, the vines are rather spindly and the growth short, though they were irrigated the same as the others. These would probably have done much better if pruned before they would bleed, as they were already weak and the bleeding weakened them still more. Late pruning may save the crop this frosty season.

Dipping Grapes to Dry Them Quickly.

To the Editor: We have some Thompson Seedless grapes which we dry each year, but on account of rains it is rather a laborious job. Is there a bleaching process by which they will dry in four to six days?—C. A. R., Turlock.

[Answered By State Horticultural Commissioner G. H. Hecke.]

For drying seedless grapes quickly, you may dip them in the following solution which has been successfully used in commercial raisin drying in the Sacramento Valley for many years. It goes without saying that the grapes should have the necessary sugar content, as near 24 per cent as possible.

Dissolve 30 pounds of bicarbonate of soda in 30 gallons of water, by thorough boiling; add 60 gallons of water to this solution and enough good olive oil to film the surface of the dip—about a teacupful will gen-

erally be right. If this dip does not sufficiently cut the bloom on the grape, add a pound or two of ordinary lye to the dip until it is strong enough to remove it. Keep this dipping solution at about 90 degrees F. and add a tablespoonful of the olive oil from time to time to replace the oil removed by dipping.

These directions, of course, are general, and will serve only as a basis for operations. Sugar content of grapes, cloudy days during the drying process, different brands of olive oil, all are factors in the successful adoption of this method, and hence, individual judgment is necessary to obtain the best results.

The raisins produced under this process should be of light amber color and will dry in less than half the time needed for the undipped product.

Durable Sulphur House.

"I'd like to find a material for fruit-drying sulphur-houses that would stand the sulphur," said E. B. Anderson of Contra Costa county last fall. "Sulphur disintegrates cement, eats out zinc, redwood, and building paper. The cement foundations in my sulphur houses which are in use four or five weeks with

steady fires each year, are half rotten after three years' use and will have to be renewed after three years more. Possibly some sort of paint would help it. The iron hinges on the doors must be renewed in less time."

"Galvanized iron is the material," said Frank Henry of Fresno county. "The sulphur doesn't take hold of that, but settles on it and drops off in an appreciable amount by the end of a season. It will last a number of years, but the sulphur at its base will eat even galvanized iron if dirt also is left piled up against it through the rainy season."

SAVES TIME IN PLANTING ALMONDS.

H. Mathews of the U. S. Malaki Reservation at Banning on March 12 was setting out 1300 almond trees. On account of getting started so late he did not plow his entire acreage, but just strips 3 feet wide and tree distance apart. After the trees are planted the neglected space which comes between trees will be plowed. He planted one row of Drakes to two rows of Ne Plus.

The Benson fruit standardization bill has been favorably reported to the State Senate.



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Almonds on Almond:

Texas Prolific	1600
Drake's Seedling	1200
Nonpareil	2500
I. X. L.	1000

Peaches:

Tuscan cling	1300
Phillips cling	1200

Cherry:

Royal Anne	2500
Black Tartarian	1300

Apricots on Cot:

Royal	4500
Blenheim	3000
Tilton	2000

Prune on Myro:

Sugar	1900
Robe de Sargent	640
French (on Almond)	709

Plum on Myro:

Santa Rosa	330
Chinas	270
Satsuma	1000

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	Per 1000
10 in. long, 7 in. wide	\$10.00
12 in. long, 7 in. wide	11.00
14 in. long, 7 in. wide	12.00
16 in. long, 7 in. wide	13.50
18 in. long, 7 in. wide	15.00
24 in. long, 7 in. wide	18.00
30 in. long, 7 in. wide	21.00

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Not Satisfied with Orange Prices.

[Written for Pacific Rural Press.]

We print below a table of the expenses of marketing a Sacramento county orange grower's crop the past season, as per figures furnished us by A. Chapman of Fair Oaks. This crop was marketed when the oranges from that district were generally sour and poorly colored, not up to the 8 to 1 test which many in that county are opposing vigorously.

The spread between gross and net prices would not be so great if the grower had marketed through the co-operative Exchange. G. Harold Powell states that it costs the grower an average of \$1.29 per box of or-

anges to grow, pack, and load them on the cars in California. This grower paid \$1.17 plus \$.35 (for packing), or \$1.52 instead of \$1.29; and his oranges sold cheap.

In an investigation conducted by the Exchange April 15, 1915, to Dec. 1, 1915, in 34 representative cities and including 4,138 jobbing and retail prices, the price delivered by growers to packing houses averaged 63 per cent of the price at which the oranges sold to Eastern jobbers. This Sacramento county grower got 42 per cent by selling outside the Exchange.

Shipments of Choice Navel Oranges by One Grower of Fair Oaks, Cal., for One Month.

Shipping Dates	From Folsom, Cal. to	Number Boxes	Price per Box	Grower gets per Box	Change for packing	Freight and refrigeration	Middleman's Com.	Total Price	Grower's Receipts
1916									
11/18	Ottawa, Canada.....	81	\$3.07 1/2	1.68	28.35	67.52	\$17.43	\$249.07	\$135.77
11/27	St. Paul, Minn.....	28	3.00	.65	.70	1.72	.28	4.03	1.30
11/27	Dayton, Ohio.....	50	2.25	.90	17.50	42.10	7.88	112.50	46.02
11/28	Des Moines, Iowa.....	80	2.25	1.38	23.00	66.40	15.40	223.00	110.20
12/6	Milwaukee, Wis.....	38	2.15	.78	13.30	32.99	5.72	81.70	29.69
12/7	Milwaukee, Wis.....	11	1.67	.23	3.85	10.66	1.28	18.37	2.68
12/10	Milwaukee, Wis.....	7	1.90	.52	2.45	6.26	.93	13.30	3.66
12/17	Dayton, Ohio.....	8	1.95	.61	2.80	6.83	1.09	15.60	4.88
12/18	Austin, Minn.....	52	2.65	1.28	18.20	43.18	9.65	137.80	66.77
12/19	Columbus, Ohio.....	15	1.50	.19	6.25	12.76	1.57	22.50	2.92
		344	\$2.54	\$1.17	\$120.40	\$290.42	\$61.23	\$874.84	\$402.79
			Average						
	Railroads get for freight and refrigeration.....					.332	per cent.....	\$290.42	
	Middleman gets for packing.....					.1376	per cent.....	120.40	
	Middleman gets as commission.....					.07	per cent.....	61.23	
	Grower receives.....					.4604	per cent.....	402.79	
							100 per cent.....	\$874.84	

Everbearing Blackcap Raspberries.

[Written for Pacific Rural Press.]

On the sandy loam of the Van Nuys district in Los Angeles county are many prosperous little farms on which are grown much fruit, berries, and garden truck. Here is located a 1 1/2-acre patch of blackcap raspberries belonging to L. M. Hartwick and Mr. Boulanger of Orange who propagated them from vines brought from the East and fruited on his own place last year.

Bear All Season.—If the vines over at Van Nuys fruit as heavily in proportion as the old ones," says Mr. Hartwick, "they will bear 10 quarts per hill this season. Many people say they can't get more than one crop per season. We get a new crop every time we irrigate once per month. You need to check the vines after picking the berries, then the water and warmth make them blossom and bear again.

Plants are obtained by covering ends of canes and their laterals with dirt after through bearing. These root at the tips and may be transplanted in the spring as late as April if the roots are not allowed to dry and if the plants are shaded for a while.

When the canes are 16 inches tall, Mr. Hartwick says their tips should be cut off. Three or four shoots from each cane will grow; and their tips should be cut off when they are three feet high. This gives lots of laterals for fruit bearing. On the Hartwick-Boulanger place, the vines had many branches, which were not cut back except to keep them from touching between the rows, which are eight feet apart. The hills average 30 inches apart from center to center, having one to eight canes each. Canes which bore fruit last year are cut out in winter. No trellis had been provided, though the canes are not very stiff. Water is run down between the rows

from a valve-equipped concrete irrigation standpipe at the head of each third center, the rows being about 100 yards long.

BORDEAUX WHEN BUDS ARE PINK.

To the Editor: How strong should we make Bordeaux spray for fruit when the buds are in the pink?—T. A. G., Mendocino.

[Answered from Wickson's 'California Fruits']

Lime 4 pounds, bluestone 4 pounds, water 40 gallons. Slake the lime and dissolve the bluestone with part of the water in separate vessels, hanging the bluestone in a bag just under the surface of the water. Do not use a metal vessel for the bluestone. Hot water will dissolve it more quickly; but both the lime and bluestone solutions should be cold when mixed and diluted with the rest of the water. The proper mixture will be a beautiful blue wash. A strength of 10-10-40 would be safe on dormant trees and would resist rains better.

IS LYE WATER GOOD FOR TREES?

[Written for Pacific Rural Press.]

Two years ago the lye water from the Banning Cannery flooded 80 French prune trees eight years old belonging to F. C. Jost. That fall, after the lye water had evaporated or soaked off, the trees were cultivated, working in about 200 pounds of peach skins and leavings from every ton of the lye water.

Last year the prunes averaged 57's, while the rest of the trees in the orchard produced 70's to 80's. In previous seasons they had all averaged 70 to 80. This year Mr. Jost has put in an eight-inch pipe to carry lye water from the cannery to his peach orchard.

OFFICERS HAVE THE CONFIDENCE OF GROWERS.

(Continued from page 356.)

prune and apricot district in the State as a Growers' Information Bureau. On May 29, 1915, we saw Jos. H. Bone diffidently accept the chairmanship of this Bureau. We watched the frantic efforts of packers to discredit their crop reports so they might contract from growers at low prices, and we saw the prices rise as a result of many growers' confidence. Mr. Bone had 40 acres mostly apricots, had been 10 years around San Jose, had held high positions in accounting departments of big business; and he had an inexhaustible store of boostiveness for the organization after he became convinced of the demand for it. He is its secretary-treasurer.

Vice-President W. A. Yerxa of Colusa county has for many years held the confidence of Sacramento Valley fruit growers. After successful experience in growing prunes in an old orchard, he has in the past two years planted 250 acres to prunes in his home county.

Know Your Soil

Many Soils That Look All Right Fail to Produce Good Crops

If you are not getting a full crop from your land—no matter whether it is set to alfalfa, fruit or grain—it is very probable that the principal fault is in the soil itself.

Looks don't count with soils, for many a fine-looking soil is deficient in some of the elements necessary to produce a good crop.

It costs just as much to cultivate a poor soil as it does one that is perfect. The difference in the crop obtained, however, often measures the difference between success and failure for the rancher.

Many ranchers who realize this fact have hesitated to have their soil analyzed on account of the knowledge that soil experts are expensive. All such will learn with interest, therefore, that a little machine has been devised, which will not only test soil accurately but will show just what is needed to bring it up to the maximum of bearing efficiency.

The initial cost of this little machine is very nominal, considering its earning ability in greatly increased crops. Once the device is obtained, the cost of each soil test is only a few cents.

No experience or technical knowledge is required to operate this soil tester; in fact, thousands of them are now in use by ordinary ranchers in all parts of the country.

These wonderful machines, which are fully guaranteed, are being placed upon the market under the name of the "Standard Soil Tester." They are being distributed on the Pacific Coast by Mr. Clement B. Stern, 613 Central Mortgage Building, San Diego, California, who will be glad to mail prices, testimonials, and full information concerning them, to any reader of this paper who will simply drop him a line.

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Nitrogen is the most valuable and expensive fertilizer element. Get yours for practically nothing by inoculating every seed you plant with All Crop Farmogerm. Prices: 5 acres \$5.00; 1 acre \$1.50; Garden Size 50 cents; Flower-pot Size 25 cents.

Send 10 cents for sample and booklet describing this wonderful product.

If you are planting legumes only, use our specific culture.

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No briars to tear the hands or clothing—an economy at harvest. The earliest berry to ripen—a guarantee of profit at market. A prolific bearer of gigantic fruit—in saving quantity. A true, almost seedless berry of unsurpassed flavor—the final requisite

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No briars to tear the hands or clothing—an economy at harvest. The earliest berry to ripen—a guarantee of profit at market. A prolific bearer of gigantic fruit—in saving quantity. A true, almost seedless berry of unsurpassed flavor—the final requisite

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Ask for prices.

ANNOUNCEMENT!

Owing to a fire March 15th, in the building in which our store was located, we are forced to seek a temporary location at 526 South Main Street. We were fortunate in having a large stock of Seeds and Supplies in warehouse and will be able to take care of all Mail Order, as well as our out-of-town business in the same careful and prompt manner.

SEEDS

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526 So. Main St.

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OVER FORTY YEARS' EXPERIENCE GROWING CITRUS

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ORANGES, LEMONS, GRAPEFRUITS

YOU want dependable trees. WE want your business. Real Estate exchanges considered. ORDER NOW. SALES OFFICE: 505 I. W. Hellman Bldg., Los Angeles, Cal.

Budded Avocado Trees (ALLIGATOR PEAR)

Write for new descriptive catalog. Largest, and most complete stock in California.

NEWBERRY-SHERLOCK, E. D. 2, Pasadena, Cal.

Visit our Sale Yard—542, South Hill St., Los Angeles, Cal.

Timely Orchard Suggestions.

Get a soil auger now and find out this summer how deep the irrigation goes. The roots will go no deeper.

Where walnut buds have not opened, it is time to spray with lime-sulphur 8 to 1 for aphids. You can't control them so easily after the leaves are on.

Plan to keep the brown mites or red spiders from defoliating your trees this summer.

Plant olives now, several varieties for a succession of ripening to keep pickers busy.

Citrus trees may yet be planted. Defoliate them to prevent evaporation until roots start to supply water. Whitewash them to prevent sunburn.

If the deciduous trees you have planted are not yet protected from sunburn, put up light-colored protectors or whitewash.

Look up at your library the bills before legislature that affect fruit growing and give your legislators a letter on what you think of each.

Don't leave any big clods in the orchard. Dirt is worth too much to

waste that way.

Don't leave any big clods in the orchard. Water costs too much to waste that way.

Soon will be the time to plant summer cover crop of sweet clover, alfalfa, beans, etc., if you have enough water. It will save fertilizer and add humus which will in turn save some of the water.

Try a few experiments with a few trees in each. Find out what fertilizers you need, whether you are irrigating right, whether your system of cultivation is best, whether a straw mulch might be better.

Plant olive trees for windbreaks. A few strawberry plants in the garden, of varieties that are especially good to eat, will make you independent of the less well-flavored and less well-kept berries that you would buy.

If there is any manure on the place, apply a good dressing to part of the trees and watch the effect.

Don't irrigate until after fruit is set, if the ground is moist.

Spray now with tobacco solution for apple, peach, and cherry aphids.

Size Only Maturity Test for Pears.

Sacramento, Placer, and Contra Costa county Bartlett pears were picked last season at various times and ripened at the University of California under supervision of Professors W. V. Cruess and P. M. Stone. Some were simply held at 68 degrees temperature and tests of sugar, starch, and specific gravity of juice made as the pears ripened. Some also were held in a refrigerator, in a desiccator, and in an atmosphere of carbon dioxide. The first pears picked in Contra Costa July 8 never did ripen into good eating fruit while those picked two days and more afterward, developed the juiciness and aroma desired, being better the later they were picked; though tree ripened fruit had coarser texture.

In their article published in the Monthly Bulletin of the State Commission of Horticulture, the following points are made:

The acid-sugar ratio or starch tests with iodine do not seem to be of much value in judging the proper

stage of maturity for pear shipment.

The sugar content increased so slowly that this is not considered worth anything as a test.

From the data at hand it seems safe to say that pears 2 1/4 inches in diameter or larger will ripen satisfactorily.

Similar pears stored in the refrigerator ripened in 21 days, while similar ones at 68 degrees ripened in 13 days.

Pears stored in air at room temperature ripened in 10 days, while those stored in carbon dioxide showed practically no ripening after two months.

Oxygen is necessary for pear ripening.

Pears ripen from the core outward and first at the stem end as shown by the iodine test for starch (which is converted to sugar during the ripening).

Pears received July 10 from Sacramento, Martinez, and Auburn required 11, 10, and 13 days respectively to ripen at 68 degrees.

Berry Prices are Good.

[Written for Pacific Rural Press by M. J. Moniz, Sebastopol.]

The berry situation in the Gold Ridge district is especially fine, owing partly to the good prices being paid outright by independent canneries. Among these are the Green Valley Co. of Graton, and the Central California Canneries. These have been paying \$50 per ton for Lawton and Mammoth blackberries and \$55 for Loganberries f. o. b. Sebastopol. This is the best in three years; and is likely to be exceeded by those growers who belong to the Sebastopol Berry Growers, Inc., who up to date have received almost as much for last year's crop. They are expecting more this season under the term contract with the California Fruit Canners' Ass'n now combined with the big merger. The Green Valley Cannery is offering three-year contracts at \$45. These prices will occasion more

planting now and next season. So far, the crop outlook is good.

Brawley reports a heavy movement of early vegetables from there to the Eastern markets. So far 400 cars of lettuce have been shipped from that point since the first of the year.

Mr. Grape Grower:

IT IS ALMOST TIME FOR MILDEW.

Let us send you an AMERICAN BEAUTY NOW, and when the time to sulphur comes, YOU will be ready, and YOUR CROPS will be SAFE.

REMEMBER—"A puff in time saves the vine."

THE AMERICAN BEAUTY SULPHUR MACHINE



was awarded the BLUE RIBBON and DIPLOMA at the 10th Annual District Fair, at Fresno, Cal., 1916.

It is not an experiment, not an imitation of any foreign device. It is a California product, designed and built in California by practical men, to meet the needs of California and West Coast growers. It is the result of two years' work and study, in field and factory, and has been subjected to the most rigid vineyard tests, under the personal supervision of one of the leading grape-growers of Fresno County.

It takes the sulphur right from the sack, crushes the lumps, and passes it through the finest screen ever used—then delivers it in a perfect cloud of fine, clinging sulphur, without waste. You will hear no "Bird Shot" rattling on the leaves from this machine. It will cover almost double acreage with the same amount of sulphur, because the sulphur is more finely

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DON'T lose valuable time tinkering with a poor machine. A few hours lost at a critical time may cost you your CROP. Insure success by being prepared.

Send us \$11 today, and we will send you an AMERICAN BEAUTY, all charges paid. Try it a week, and if you are not entirely satisfied, send it back at our expense, and we will cheerfully refund your money.

WE FULLY GUARANTEE EVERY MACHINE.

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Offices in REEDLEY, Fresno Co., Cal., and SEATTLE, Wash.



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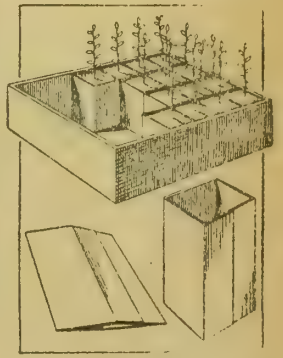
that will keep Squirrels, Rabbits and Gophers from barking your trees and give perfect protection from hot sun, sandstorms, barking in cultivation, etc. Tell us your pest and we will tell you what kind of a wrap to use. We make a number of kinds and can save every tree for you from pests.

Collapsible Planting Pots

These pots are bottomless. This allows you to plant pot and plant, never disturbing your plant nor stopping its growth in transplanting a single hour.

For starting early vegetables, such as Tomatoes, Cabbage, Eggplant, Cauliflower, Cucumbers, Cantaloupes and Squash; also for propagating Rose Cuttings, Geraniums, Eucalyptus and Conifers. It's the only practical pot on the market today for propagating work. Write us for samples of either Pots or Protectors. Tell us which you are interested in.

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Threads & Couplings Hot Asphaltum Dipped
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Two Fine Watermelons

Golden Nugget (yellow heart), Long Fellow (long, red, luscious), 15c per ounce, postpaid. All kinds of SEEDS.

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PEDIGREED TREES that will bear fruit true-to-name and bear quickly. You want uniform crops—fruit that will command the highest market prices?—then get our advice about citrus trees; don't take everybody's word for it. Over 20 years' experience—among the first to advocate budwood selection. These stand as your guarantee. Trees that we sell you are disease free. Now is the time to plant. See us—write or wire.

50,000 Valencia, Navel Oranges

Eureka Lemon Trees

First National Bank Bldg.

WALKER & HUBBARD NURSERY CO.

San Fernando, Cal.

Packing for Big Cherry Prices.

A very little extra trouble insures reward for the expensive California system of packing cherries.

[Written for Pacific Rural Press.]

Late last June, M. D. Kennison of Napa sold on the New York auction 10 boxes of 9-row Bing cherries at \$4.25, 20 boxes 9-row Bings at \$4.50, and two boxes 8-row Lamberts at \$6.37½, double or treble the ruling prices.

Mrs. Kennison packed them, and they both agree that the high prices so late in the California season were due to quality and packing. They take pride in putting up the best fruit, never an imperfect cherry; and, with these sizes, every layer packed. Each cherry is handled only once after picking.

Packed and Nailed Tight.—A very important part of getting such prices, is to get the perfectly packed cherries to market without their jarring loose or being pinched and bruised. This depends on the nailing of the boxes.

Neighbors tell Mr. Kennison that he takes too much trouble; but he says, "Why should I put up an expensive fancy pack and then for lack of a little extra trouble nailing, allow it to go onto the market, messy?"

He nails down the center of the bottom without bruising the cherries. Then he runs his finger along the outside top rows of the fruit; and if any are loose he nails the center of the top, and draws it down so everything is just tight and no more, using 4d nails on the top, but shorter ones on the bottom.

To prevent bruising when the center of the bottom is nailed down tight, the edge of the sidepiece of the box is rested on a block high enough to lift that side just free from the bench.

A hole through the cover is made with an awl. Then the nail can be driven without bruising fruit. The box is turned around and the other end of the center nailed similarly. If the top of the box must be tightened, the center of the bottom can rest directly on the block to take the jar, because it has already been nailed.

Then the boxes are packed in shipping crates which hold four or five each, to avoid the roughness of handling each separately.

Grape Mildew Annihilated.

[Written for Pacific Rural Press.]

Mildew attacked J. A. Schlueter's 8½ acres of 6-year Thompson vines with all its host of spores in repeated invasions. It also attacked the vines of his neighbors. It was victorious on some of the latter, but was slaughtered on the Schlueter place and not a spore lived through so far as you could see on the grapes or vines.

The artillery that slaughtered the enemy was simply knapsack sulphur sprayers, the ammunition was dry sulphur. Only one artilleryman was required to repel the first and second attacks in one day each. He began when the shoots were only four inches long.

After the vines became heavier, it took two artillerymen two days to repel each of the six attacks. Two extra sorties had to be cared for on

one end. The last battle was fought to a finish on Aug. 24.

The sprayers had sharp angles on the ends of their tubes to seek out the enemy in its most secure positions on the under sides of leaves. The tubes were held in the vines and worked back and forth, to get sulphur on every spore. The reason the enemy did great damage in other vineyards is that inexperienced or careless sprayers are likely to miss the lower and inside leaves just where the mildew thrives best.

Goggles were tried by Albert Schlueter, who did a good bit of spraying last season, but he says the sulphur would get on them and sweat would wash it into his eyes until he was nearly blind. It was better with the goggles off.

APPLE BOX SIZES.

To the Editor: What is the weight of contents and size of the standard apple box?—W. G., Sheridan, Nevada.

Under the California "Standard Apple Act of 1915," any box labeled "standard" shall be 10½ inches deep, 11½ inches wide, 18 inches long, measured inside without distension. The ordinary California apple box is 9¾x11x22 inches. Oregon boxes are 10½x11½x18 and Colorado boxes are 11½x11½x18. There is no Federal standard apple box so far as we know. There is no weight limit. The weight will vary with the size of the apples and the bulge.

LIME SULPHUR NOT POISON.

To the Editor: I have just recently sprayed a young orchard with lime sulphur solution and have been informed that the grass upon which the solution fell is poisonous to stock.—J. A. H., Calaveras county.

It will not hurt the stock.

Tree Protectors

That Really Protect



Quickly and easily put on. Will stay.

Fitted with galvanized wire ties.

If you want better protectors for less money write us for sample and prices.

Angelo & Son

Bay and Mason Sts.,
SAN FRANCISCO.

-for perfect results-

PLANT
Germain's Proven Seeds

Germain's Proven Seeds have given perfect satisfaction to critical growers all over the Southwest. They have been thoroughly tested for germination, purity and their adaptability to California soils and climate.

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Our buds for our Citrus Stock were selected from Pollard's Twenty-Five Year Orchard, which are as prolific and true to type a grove as found in California. We guarantee all trees to be true to name and absolutely untouched by frost.

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NORTH WHITTIER HEIGHTS CITRUS NURSERIES,
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CITRUS TREES

Planted from the famous San Dimas Nurseries, have produced the most famous groves. We have the largest Citrus Nurseries in the world, and plant for the most exacting growers from Tehama to San Diego and Imperial counties. We assume entire charge of developing and planting for non-residents. Irrigation systems installed. Satisfaction Guaranteed.

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NURSERY DEPT., SAN DIMAS, CAL.
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Only Guatemala Hard-Shell Avocados in California grown from imported buds. I grew only 81 trees from 41,000 buds that I imported. No wonder my trees are the highest priced in California. Also the Hard-Shell fruit is in a class by itself as to shipping qualities and finest flavor. Write for information and printed matter to

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GUATEMALA AVOCADO NURSERY.

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Growers of the highest grade budded trees in commercial quantities. Thirty varieties. All field-grown stock. Our years of experience will be of great value to those considering a spring planting. Come to our nurseries and see the wonderful growth of our trees.

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Handling Grain in Bulk.

To the Editor: This was just about the time last year that the sack question became a problem with our farmers, and it appears that it is going to be no less a problem this season. Having had the experience of erecting and conducting an elevator during the past season I have had several calls for information regarding how to construct, what experience, etc. I am enclosing you copy of a letter written to one of the inquiring persons.

About the first of May, 1916, in partnership with the Hayes Company, the work of constructing an elevator began. The building was finished for receiving grain in early part of July. This is important to the person building a new elevator, commence early for lots of things turn up short when wanted badly, and waiting after grain is ripe to cut doesn't pay. All who intend putting grain in elevators of their own or through other elevators should begin at once to look up information. This elevator is located at Athlone, Cal., along the Southern Pacific track, the lease for the location costing five dollars. An elevator erected by Wm. Colley at Chowchilla and one erected by Wm. Boyden at Merced give three elevators in this immediate neighborhood, all of different type, so any persons desiring to build may easily secure information.

Some of the farmers hauled their grain in bags from the machine to the elevators and used the bags several times and sold them for half price. Others used grain beds and hauled direct from machines as the grain was run from the machine into the wagon.

Crops are looking well now although for a time our farmers felt "kinder" weak in the knees. The April showers will tell the tale.

The bulk handling of grain or handling by sacks through the elevator is a success both as to saving time and expense; and now needs the co-operative efforts of the farmers. Had the warehouse men had their way there would be no elevators now in this county or perhaps anywhere else, for several reasons I have not the space to mention. However, there is plenty of room for both warehouses and elevators in California for years to come; though it should be said that the farmer that clings to sacks will find he is losing money. The sale of grain in bags seems easier now because the buyer gets more for his money and the farmer thinks he is getting more for his grain. There was about five cents difference per sack in the sale of barley last year in favor of the sacked grain. This difference would lead many farmers to believe that it would be useless to try the elevator if the selling price is different. The idea that a farmer is selling a ten or fifteen cent sack for five cents does not occur to him, and the buyer, especially milling companies, know in paying this difference they can easily value the sack for more than fifty per cent sack quotations.

The cost of construction of the elevator at Athlone was as follows: Materials, lumber, nails, cement, rock, sand, bolts, \$1817; labor and board of men, \$1242; equipment, cleaner, scales, belting, motors, elevators, conveyors, etc., \$1236. Total, \$4295.

The building is made of 2x4 mountain pine surfaced on two sides, laid on 2x10-inch sill which is bolted to cement floor and foundation. Dimensions of building, 56x28, and 32 feet to top of bin. Consists of eight separate bins 13.5 ft. square.

The top of the building is covered with cedar shingles, and no other covering for the walls is used, though the south end leaked during the storm of the present winter and should have covering of some kind. Capacity of all bins about 18,000 bushels.

There were 2,800,000 pounds of barley handled through the Athlone elevator last year. The handling of bulk grain through the elevator began July 12 and continued until about Oct. 1.

The cost of handling this grain for help and power, etc., was \$512.62, or a trifle less than thirty-eight cents per ton. This cost was for handling through cleaner into elevator and loading onto cars from the bins.

No effort was made to handle any outside grain, as space for storage was lacking, and the shortage of cars forbade taking grain in for immediate shipment. Under ordinary conditions when there is no car shortage, 75 to 125 tons of grain could be handled through this elevator and shipped each day.

Two men operated the elevator with ease and could have handled much more grain. The cost of preparations for handling grain in bulk is trifling on the ranch. Three grain wagon boxes should under ordinary conditions be sufficient to carry all the grain from the largest harvester. These beds cost \$42 if made strong enough to hold one hundred bushels of barley, or say fifty sacks of one hundred pounds.

The Holt Mfg. Company constructed a bin on the harvester used in the above handling of grain last summer which held about thirty sacks or sixty bushels. Sometimes the wagon was not on hand to receive the grain from the machine and the grain was run into this bin with no occasion to stop work. A hitch was made on the tractor and one side of the harvester to which the wagons were attached; and this could be operated while the machine was in motion. No horses used except to take away this wagon and bring it back. Several of the farmers never unhitched their horses, but when a wagon was loaded another drove under the loading spout.

My grain was harvested twelve miles away from the elevator and was stored into a field bin holding about 2,000 sacks, or 4,000 bushels. From this it was taken into the Athlone elevator in wagons and motor truck. This made an unusual expense; but it is practical and economical, even at this distance. The field bin was necessary when some delay of the machine occurred, or delay in transportation of grain to elevator at Athlone.

I desire to say that the elevator is a success and now needs only a few changes and the education of the farmer to how easy it is to change to the system. Elevator in field cost \$460, and was run by small one and one-half horse-power gasoline engine. One man was required part of the time to attend to elevator in field but will be dispensed with the coming season. This expense was \$156.00. All the expenses incidental to changes and operation of the bulk system would not exceed the expense of the sack sewer and helper. Where harvesting is near an elevator, the entire saving could be made, and the same cost will buck and haul the bulk grain as the sacked.

Le Grand. E. T. Cunningham.

FOR EARLY POTATOES.

"Flooding packs the ground, which should remain loose to encourage easy growth of potatoes," writes J. S. Goss in the Fresno Republican. "Therefore, dry farming is best for first-crop potatoes."

Peelings for Seed.—While it requires larger seed pieces to get large, vigorous plants and large potatoes,



Danger



Safety

"Armco" Iron Corrugated Culverts Make Dangerous Places SAFE!

Following the example of the railroads, highway builders are abolishing bridges wherever possible and substituting the safety, economy and convenience that is possible with

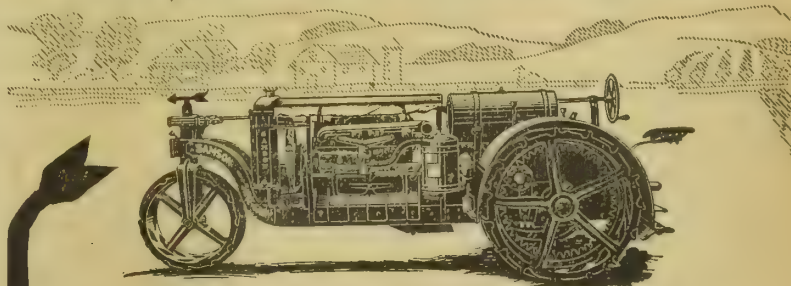
"ARMCO" IRON CORRUGATED CULVERTS

Never "closed to traffic", never put "out of commission" by floods or storms, never in danger of breaking down beneath heavy tractors or motor trucks, never requiring repairs, or painting, "Armco" Iron Culverts eliminate all the objectionable features of bridges and make travel safe and sure.

"Armco" Iron's remarkable rust-resistance results from its purity and evenness. It endures for years and years without one cent of cost for maintenance. The "Armco" Trade-Mark on every section is evidence that your taxes are being wisely applied.

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Built to Last!

Clean-cut and powerful looking, isn't it! It lives up to its appearance, too. Up-keep and working costs unusually low. Kerosene, distillate or gasoline used as fuel in the

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Two sizes—12-25 and 6-12 horsepowers. Ask us how Sieve-Grip wheels, Nodust-Moisto-Rizer, Roller Pinion, etc., on Samson Sieve-Grips can make money for you.

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Send me catalog and tractor-farming magazine "Samson Siftings."

Tear off
& mail!

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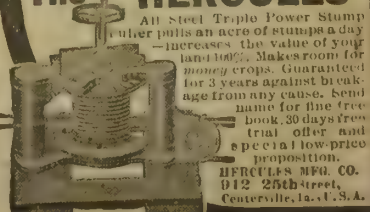
Address

Mr. Goss recommends for first-crop early potatoes that small seed or even potato peel, cut deep at the eyes, be used in this day of high-priced seed. He claims that his potatoes are always first on the Sanger market.

A meeting of the directors of fair associations in the State has been called by Prof. Gordon H. True at the University Farm at Davis during Farmers' Week, the latter part of May or the first week in June.

PULL OUT THE STUMPS!

The HERCULES-



All Steel Triple Power Stump Puller pulls an acre of stumps a day—increases the value of your land 100%. Makes room for money crops. Guaranteed for 3 years against breakage from any cause. Send name for free book, 30 days free trial offer and special low-price proposition. HERCULES MFG. CO. 912 25th Street, Centerville, Ia., U.S.A.

Growing 35 Tons Silage per Acre.

[Written for Pacific Rural Press.]

By growing 35 tons of silage corn to the acre on nine and a half acres of old alfalfa land in 1915, Framp-ton Bros., dairymen of Los Angeles county, believe they made a State record. But be that as it may they are sure that the land in question produced the most profitable crop of any land they have ever farmed.

Two factors were considered as all-important in the size of the crop: First, a soil that had been heavily fertilized for several years while planted to alfalfa, and secondly, a variety of corn which, in their opinion, is the greatest yielder of any corn ever introduced in the State.

In June, 1914, the alfalfa sod was plowed up with the intention of planting rotation crops for a year or two before re-seeding back to alfalfa. Potatoes were selected as the first crop and yielded abundantly in the fall of 1914. Also the cultivation they received left the ground in fine physical condition for the crop of grain hay that was planted in the winter.

But neither potatoes or grain hay solved the dairy cow feeding problem which presented itself in the way of having to buy high-priced mill feeds for the cows during the winter months, the monthly bill for which was \$90 as a rule.

The silo, they were advised, would overcome this monthly feed expenditure, so plans were made for the erection of a concrete silo and the planting of a small field of silage corn. A neighbor who had raised corn for a number of years was appealed to for seed, and furnished them with enough White Cob corn to plant their land.

As soon as the hay was off the land it was irrigated and plowed good and deep, planting being done with an ordinary corn planter. After that thorough cultivation was given the field, by which time it was so high that a team could not be driven down the rows.

Just before the corn began to silk out, deep furrows were run between the rows with shovel plows, the dirt from the furrow being banked up around the roots and butt end of the stalks. This served to strengthen the root system and by being careful not to overflow the furrows when irrigation was in progress there was no toppling over of stalks as is sometimes occasioned by irrigation at this stage.

Before the corn had reached maturity for silage purposes, it was seen that the one silo was not sufficiently large to care for the nine and a half acres and at the suggestion of the silo builders another of equal size was constructed with the understanding that it would be paid for by the month, with the money that had previously been paid out for mill feeds.

When harvested the last of October the two silos were completely filled, thus indicating a yield of 333 tons, based on the silo measurement.

Soon after this feeding was begun, the ration per cow being 20 pounds of hay and 40 pounds of silage, and by the time the first silo had been fed out it was paid for on the monthly installment plan. Also the

milk flow had been equally as heavy as when mill feeds were fed.

Actually the silos did not pay for themselves the first year if rent of land, planting, irrigation, cultivation and harvesting are considered, but with 35-ton crops of corn it is perfectly feasible to expect them to pay out the second year.

WHAT CORN FOR SILAGE?

To the Editor: What is the best variety of Indian corn for silage? Is there a variety that better suits the Sacramento Valley, and particularly this immediate district?—L. W. J. Winters.

So far as we know there is no one variety which has established itself as being the best, although Leaming Yellow Dent is probably the most extensively planted variety. Stanford Yellow Dent does well in the upper part of the Sacramento Valley and we have had highly satisfactory reports from Orange County Prolific the past year. Red Cob Ensilage has made some wonderful yields in the San Joaquin Valley but we know of no experience with it in your locality. Probably the University Farm at Davis could tell you.

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FLORADALE FARM,
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Messrs. Layne & Bowler Corporation,
Santa Fe Ave.,
Los Angeles, Calif.

Gentlemen:—

At your request have sent you photographs of our well on the
Burpee Floradale Seed Ranch, and am sorry that we do not have a more satisfactory
photograph to send you.

We would also say that the pump has given us good satisfaction. We
use a 20-H. P. Motor for irrigating our Sweet Peas, and find that with this power
the pump runs as steadily and nice as anyone could ask and pumps Nine Hundred
gallons of water a minute. We can highly recommend the Layne-Bowler Pump.
We have had it installed for three years and in that time have had very little
trouble with it.

Very truly yours,
W. Atlee Burpee & Co.,
Per *Harry F. Buchanan*

Write for Catalog No. 25

Layne & Bowler Corporation
900 Santa Fe Ave., Los Angeles, Cal.



**Barn
Silo
Hen-house
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California Redwood

Resists rot and fire

Whatever the new work or repairs you have in mind, you will find California Redwood the one best wood to use.

Resists rot—contains a natural preservative. Unaffected by the action of the sun, rain and contact with the ground.

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Will not shrink, swell or warp. Light weight and delightfully easy to work.

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California Redwood Association
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Ask for the Child's Story of the "Big Trees" of California—there's a copy for every child in the nation.



Furrows and Flood Irrigation.

[Written for Pacific Rural Press.]

In Orange county, orchard irrigation is quite generally by a check and flood system with short levees shoveled where needed. In Riverside county, it is quite generally by furrows, but growers there are beginning to notice that furrow irrigation carries the expensive nitrates to the tops of ridges between furrows, and evaporates, leaving the nitrate in a thin crust on top of the ground. This dries out and cultivation doesn't work it down to where tree roots could use it; so much of the nitrate is wasted. Flooding does not have so much of that effect.

Furrow irrigation is unsatisfactory too in many Orange county orchards. One of these is 60 acres of Valencias on the Carroll Ranch. The soil is a light loam averaging about three feet deep and tending to sand. It holds moisture pretty well if cultivated right, but Mr. Carroll says water in furrows would sink at the head of the row and never

get through nor soak sidewise. So big stream flooding is desirable.

This is made possible by his No. 7 centrifugal pump and electric motor on a well in which water comes within 20 feet of the surface. The whole place is piped with underground 14-inch pipe and supplied with irrigation valves and gates.

Flooding and Gum Disease. — He was irrigating late in September, having made two lines of checks per row of trees. The trees themselves were inside one row of checks and the water surrounded their trunks. This has been done many times without infecting the trees with gum disease, because there was none of that fungus in the soil and none was carried in by irrigation. But last winter, flood water broke over part of the place and stood on it some time. Inspection afterward showed the disease just starting. It was promptly cut out and painted with Bordeaux paste and other trees also painted for prevention.

of October, for they must be cured in little piles in the field.

In harvesting, two rows of beans

are cut at once, being thrown into a windrow, then three windrows are stacked into one row of little shocks. This year the last named row had to be partly doubled up by staggering the shocks, because the

vines were so heavy. They had grown to $\frac{3}{4}$ the diameter of your finger and made a dense mat. Pods three inches or longer mature from the moisture and food in the vines; and the beans do not shrivel.

DETERMINING SOIL LIME.

The benefits of lime, to increase the fertility of soils and for the liberation of plant food material in the same, is becoming more and more established in the minds of all thoughtful agriculturists. Authorities in Europe, and such eminent soil experts as Prof. E. W. Hilgard, Dr. Hopkins and Dr. H. J. Wheeler have long been convinced that most vital essentials for soil fertility are lime carbonates and humus. On page 354 of his Book on Soils Dr. Hilgard says: "In general, lower percentages of phosphoric acid, potash and nitrogen are adequate in the presence of a large proportion of calcium carbonate."

Most agriculturists do not know the carbonate and humus contents of their soils, because heretofore they have not been able to ascertain them, without a complicated or expensive analysis. Dr. M. O. Reiche, late soil chemist of Munich (Germany) agricultural experiment station, has recently perfected a device which is so simple that any child that can read the directions can operate it. It will determine, in a mechanical and automatic manner, the carbonate and humus content of soil at a cost of only about one cent per test and in a few minutes of time.

IRRIGATED LIMA BEANS GROW LATER.

[Written for Pacific Rural Press.]

"My beans shouldn't have been irrigated last season," said E. E. Dunning of Ventura county last September. "After as much rain as last winter in our location (about 20 inches) with fine cultivation, the beans would have thrived through the season and ripened in time. They were irrigated in my absence about June 21. Now we can't begin to cut them until the second week in October, and then there will be a lot of immature pods. It will also be more likely to rain on them."

As it happened this year, Mr. Dunning was lucky to have the vines unharvested in the early days

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A tractor cuts the costs of plowing power and labor.

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Send for it.



We will do all we can to help you find out about every part of the Yuba, its uses and its construction; to watch it under actual service; to use it yourself under your own conditions; to show you *why it is the tractor for you.*

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433 California St., San Francisco, California		
Gentlemen: Kindly send me catalog and prices on the Yuba Ball Tread Tractor.		
I am interested in Model 12-20		Model 20-35
Name _____		
Town _____		State _____
P.O. Box _____		Size of farm _____
[Check main crop raised]		
Fruit _____	Rice _____	Grain _____
Grapes _____	Hops _____	Alfalfa _____

and there have just been issued new Pump and Plow Catalogs which we will be glad to send prospective buyers.

Yuba Manufacturing Company, 433 California Street, San Francisco
(Formerly The Yuba Construction Company—change in name only)

Net Stacking of Alfalfa Hay.

[Written for Pacific Rural Press.]

Making good alfalfa hay is a work to which many California farmers pay too little attention; and it has usually been found particularly difficult to produce a good quality of hay when large acreages were involved, because of improper curing and handling.

On the Stanford University's ranch at Durham, Butte county, a good deal of attention has been given this phase of the farming operations because there are a thousand acres seeded to that crop; and hay making is continuous for several months as there are always six or seven crops to be harvested on the irrigated lands.

Crews are organized for the various parts of the harvesting operations at the beginning of each season, one crew doing nothing but mowing, another spending all of its time irrigating, and still another working on the rakes. Each part of the work is done with the aim of having the hay carry as large a proportion of leaves as possible when finally stacked; as it is the leaves rather than the stems which furnish most nutrients in alfalfa hay.

As near as possible, the alfalfa is mowed when it is just beginning to blossom out and raked into shocks soon afterward in order to avoid

excessive drying out of later cutting.

According to F. C. Franklin, managing foreman of the ranch, the greatest factor in good-hay making under extensive operations is the manner in which it is handled from shock to stack. At that time the greatest loss of leaves is apt to occur.

To prevent this loss, large nets are used, in connection with 20-foot racks that are divided through the center with partitions. The nets which are longer than the width of the compartment in which they are placed, are put on the bottom of the rack, with ends overhanging the sides. After the wagon is loaded, the ends of these nets are looped together at the top of the load.

At the stacking yard which is located in the alfalfa field, derricks are used, made of 40-foot cedar poles and having 25-foot booms that can be raised or lowered at both ends. Here the cable is fastened to the looped ends of each net and the entire netful of hay is lifted to the stack and dumped. This eliminates any rough handling of the hay after it is loaded; and according to Mr. Franklin, is a saving of about 30 per cent in the labor required in hauling and stacking. It also insures good leafy hay.

Early Rice Planting Advisable.

Early planting is a factor in profitable rice production of California that was quite generally overlooked by many last year, but one that experienced growers will not forget this year.

As an illustration of the seriousness of late planting W. E. Barnard of the Dodge Rice and Land Co. reports the experience of that company's tenants last season in the farming of 4436 acres of rice.

Owing to lack of machinery and organization a portion of the work was delayed so that some of the rice was not watered till after the first of May, while a large part of the acreage was watered before that date.

All of the acreage was given practically the same care during the growing season, but in checking up on the yields of the various tenants at harvesting time it was found that the average yield of all rice planted

before May 1 was 3234 pounds per acre, the lowest yield on that land being 36 sacks. On land watered for the first time after May 1 the yield was invariably lower, one field yielding as low as 24 sacks to the acre that was not watered till May 28.

So important does this company consider early planting that it has arranged for the hire of enough machinery so that they can plow, harrow and plant approximately 275 acres every 24 hours. This they consider is necessary in order for them to properly care for the 3700 acres that they will farm themselves the coming season.

It may also be of interest to intending rice planters that this company insists upon clean cultural methods of all rice fields and that the average cost of keeping their fields clean during 1916 was 20 cents an acre.

Experience with Sudan Grass.

[As described by W. E. Woodward, Ramona.]

Last May I decided to try some Sudan grass. I bought 25 lbs. which I sowed with a drill in rows 3 feet apart on a six-acre stretch, mostly bottom land but some hillsides. July 15 I pastured my first crop. I pastured four times on the bottom land and twice on the hillside last year. For Sudan one ought to plow deep and keep the soil well worked till May or June, then plant at least 50 pounds to six acres, leaving rows 18 inches apart instead of 3 feet.

This year I will put in 20 acres and divide it equally into three fields and pasture 25 head of dairy stock on it continually by transferring them in rotation. As Sudan does not need irrigation it beats al-

falfa for growing and I have tested it as superior for feeding. When I pastured on Sudan and fed alfalfa also, the milk flow increased to 60 gallons a day from 20 cows. When I changed from Sudan to alfalfa hay and pasture a marked decrease was noticed in the milk flow. [Sudan and alfalfa supplement each other to a considerable extent. Neither is economical alone.—Eds.]

The Santa Clara Blossom Festival was held at Saratoga March 17. There was soccer football by Stanford University team, a drill by school children, and an address by President Ray Lyman Wilbur of Stanford.

790 Bushels of Potatoes

PER ACRE, THE LARGEST CROP
ON RECORD IN THE U. S.

Were grown in California and awarded Grand Prize by International Jury, P. P. I. E. Not only was this the largest crop, but the quality was especially fine, bringing a price considerably above the market. The grower attributed a good part of his success to the use of

Gold Bear Fertilizer

The average crop of California is about 150 bushels. What do you get?

W. V. Shear, Potato Expert, says: "Don't try to save money by adopting cheap methods to cut from cost of production. Is it not

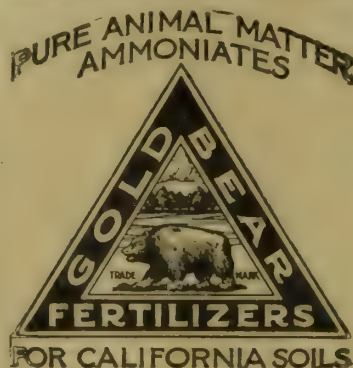
good business practice to spend enough money to produce a good crop and make money on the investment rather than use cheap methods and lose money?"

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Let us help you solve the problem of bigger and better crops.

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CALIFLORA BRAND

This is one of the best-known forage crops used in the Southern and Middle Western States. It grows from 5 to 10 feet high and will produce four crops of hay under irrigation and usually two crops without irrigation. It thrives in the valley and foothill sections of California. It yields more to the acre than any forage crop we know of, and the quality of the hay is excellent. The stock of this seed is short and we anticipate higher prices in the near future.

BUY NOW—lb. 50c; 10 lbs. \$4.00; 100 lbs. \$35.00.

Alfalfa Seed

CALIFLORA BRAND

This is our best grade of common Chilian alfalfa seed. On every test this brand of Alfalfa Seed has surpassed all others. We do not believe its equal can be had elsewhere. When buying this grade you are not paying for any weeds or chaff. It is the cheapest to plant because it is the best. Send for price and sample.

We also offer superior stocks of GRIMM, HAIRY and SMOOTH PERUVIAN and TURKESTAN Alfalfa Seed.

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Splendid stock of OREGON GROWN American Wonder, Early Rose and Garnet Chili Seed Potatoes. These are all good early varieties. Write for prices and quantities desired.

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ALFALFA

250 lbs. of MOCOCO Superphosphate per acre will increase the yield of alfalfa enormously. "In some cases the alfalfa growth has been tripled," writes Mr. F. F. Lyons, San Joaquin Co. Farm Adviser. Write for particulars.

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BETTER PRICES BROADER MARKETS

Part Played in Problem by Transportation—National Treatment for a National Enterprise.

IN every part of the country the farmers are turning their attention to questions relating to the handling of their products after they leave the farm. Transportation is a part of this problem. The cost of reaching their markets and the ability to reach them promptly at the right time are important factors in determining the returns from their crops.

Low Freight Rates

Fortunately the American farmer has at his command the lowest freight rates in the world. It costs no more to move a load of wheat 500 miles by rail than it does to haul it five miles from farm to station by team. A ton of farm produce of any kind can travel almost twice as far for the same charge on American railroads as on the government-owned roads of other lands.

The cheapness of transportation is not the whole issue. To meet the needs of the farmer transportation facilities must be ample. There must be plenty of tracks and cars and locomotives and sufficient terminals.

Billion a Year Needed

The railroads are anxious to provide means to take care of all the business they can obtain. But a vast outlay of money is required. A billion and a quarter dollars a year for the next ten years or more must go into railroads to provide the necessary transportation facilities.

During the past few years it has become more and more difficult to obtain, even in part, the money required for this purpose. This has been due partly to the poor promise of a satisfactory return on the investment; partly to the uncertainty created by numerous and conflicting regulations.

Regulate for All the People

Nobody seriously proposes that the public regulation of railroads shall be weakened. Certainly the railroads themselves do not. But it is a reasonable proposal that the regulation of this great national business should be handled by national agencies, on national lines, in the interest of all the people, and not by local agencies to serve local or sectional ends.

Regulation at cross purposes by 49 masters—48 States and the Federal Government—now imposes upon the railroads an annual burden of many millions of dollars of wasteful expense, from which the public derives no benefit. It is of primary importance to the farmer to cut down this waste in order that his products may be moved to market at the least expense and with the greatest possible expedition.

The farmer's interest demands free trade among the States.

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HOTBEDS FOR SWEET POTATOES.

[Written for Pacific Rural Press.]

An average crop of sweet potatoes in the Livingston district of Merced county is 75 to 100 crates of 100 pounds each per acre; and the average price year in and year out is \$1 per crate, according to F. L. Landram, who has been in the sweet potato business here since its infancy over a score of years ago. He raised 30 acres of California Sweets last year, and this is how it was done.

Hotbed.—The hotbed was made Feb. 10, covering it with boards every night, rather than a month later and leaving it open as he used to do. Some people plant any time in March, as it takes about eight weeks for the plants to grow ready for transplanting, which is done any time up to June 1 with reasonable safety from fall frosts. It takes about 12,400 plants per acre. Each seed potato will produce a first crop of about eight plants and three-fourths as many at later pullings. If only the first pulling is to be used, it is safe to allow 95 or 100 square feet of hotbed per acre to be planted. This will require about 300 pounds of seed potatoes per acre. Fewer seed are required if the second and third crops of plants are used, but such plants will produce crops that much later.

For Mr. Landram's hotbed, a hole was dug five feet wide and about 16 inches deep. Ten inches of fresh straw manure was firmed in the bottom and covered with three inches of sandy dirt. Boards were placed on edge around the hotbed so they would project several inches above ground. "Seed potatoes" $\frac{1}{2}$ to 1 inch in diameter were laid in the bed close together as possible without touching each other; for if they did touch, they would rot, according to Mr. Landram. Five inches of sandy loam are sprinkled around and on top of the potatoes to make them grow long sprouts.

IS FROSTED SUDAN GRASS DANGEROUS?

To the Editor: Is there any danger in letting sheep pasture on Sudan grass that has been frozen? I planted some 4700 feet above sea level last year. It grew 12 inches, was frozen down late in April, and then grew an average of 5 $\frac{1}{2}$ feet tall. About half of the seed was ripe when fall frost killed it for good.—G. H. A., New Pine Creek, Ore.

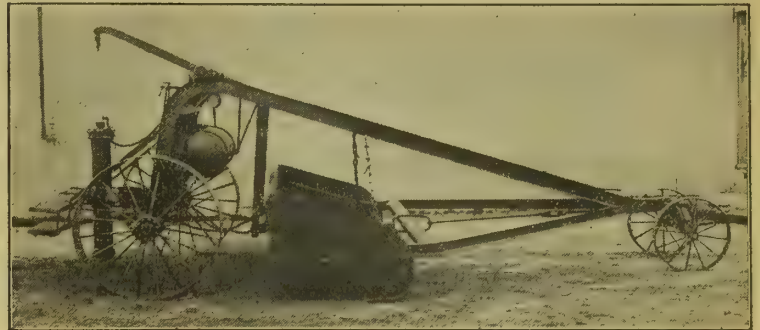
This question was answered rather doubtfully a few months ago, the supposition being that since it is of the sorghum tribe, pasturing on the new growth after being checked by frost might be dangerous. We hope some of our subscribers have tried it without serious loss and will tell us their experiences for the benefit of the rest of our readers.

SPRAYING FOR SQUASH APHIS.

In spraying the under side of the squash leaves where the black aphids hides, feeds and breeds in greatest numbers, the O. A. C. Press Bulletin editor, who practices labor-saving devices in his back-yard gardening, turns the vines over by taking up the end of each runner and carrying it back over the center of the hill. This inverts most of the leaves for a thorough drenching without undue

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*Strong germination
and vitality*

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SEEDSMEN

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loss of labor and material. Care is required that blossoms and young fruit are not damaged, and it cannot well be done after the fruit reaches too great weight. But if spraying is well done during the early growth, and the young growing tips are lightly sprayed later in the season, insect injury will not be serious.

An effort is being made to organize an alfalfa growers' association around Dinuba.



The Salof Self-Setting Gopher Trap.

Only trap having free passage. Will entirely rid your place of gophers in one season. Will catch all sizes. If you want a trap that will give results, try this one. If your dealer can't supply you, you will be sent postpaid for 50c; 3 traps, \$1.00. Circular free. A. SALOF & CO., 39140 39th Ave., Oakland, Cal.

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58 SUTTER ST., SAN FRANCISCO, CAL.

General Agricultural Review.

GRAINS AND FIELD CROPS.

Coachella Valley onions are about ready for shipment.

San Jacinto alkaline pasture lands are proposed for sugar beets.

The Orland Alfalfa Meal mill is to use first crop alfalfa this season.

Lima bean prospects are fine and the contract price is about 7 cents.

A sale of 1000 bales of cotton was made at Calexico last week at 18c per pound.

J. A. Brooks of Fresno county has patented a riding vineyard and bean cultivator.

A lot of 548 tons of Altamont hay was sold last week for \$20 per ton, to be shipped to Hawaii.

Canners are offering to contract for tomatoes in the Sebastopol district at \$10 per ton and furnish seed.

According to U. S. Dept. Agr., growers of California had only $\frac{1}{4}$ as much barley on hand as a year ago on Mar. 1.

L. H. Emery of the Lindsay Ripe Olive Co., is guaranteeing \$10 a ton

for tomatoes f. o. b. Porterville for canning at Lindsay.

It is announced from Imperial that a pre-cooling plant is being constructed there which will be used in shipment of asparagus.

Artichoke growing in Humboldt county to be based on the methods used in San Mateo county is exciting much anticipation.

Two dollars net to the grower for the last 750 sacks of barley held by a grower in Salinas Valley was paid recently by a Los Angeles mill.

At the Cloverdale Citrus Fair Feb. 21 to 25, the first prize feature exhibit, a Garden Wall, was installed by Mrs. H. I. Barker and Mrs. O. C. Williams.

More than half a million grain bags are already sold to farmers in the Paso Robles and San Miguel districts and orders for more are coming right along.

Eight hundred acres of beets for the Hamilton plant of the Sacramento Valley Sugar Co. are being planted near Princeton, Colusa county, on one ranch.

The Sperry Flour Co. is to hold a Corn Institute at Stockton Mar. 31, at which latest machinery and methods for corn growing will be shown. All interested are invited.

Stocks of corn on farms March 1, 1917, as reported by the Department of Agriculture at Washington, were 789,416,000 bushels against 1,116,559,000 bushels the same date last year.

Stocks of oats on the farms March 1, 1917, as reported by the Department of Agriculture at Washington, were 393,985,000 bushels against 598,148,000 bushels the same date last year.

Stocks of barley on the farms March 1, 1917, as reported by the Department of Agriculture at Washington were 32,841,000 bushels against 58,301,000 bushels the same date last year.

Stocks of wheat on the farms March 1, 1917, as reported by the Department of Agriculture at Washington, were 101,365,000 bushels against 244,448,000 bushels the same date last year.

Contra Costa County Sealer of Weights and Measures is inspecting hay balers' scales and notifying operators that they must label each bale with their names and the weight of the bale, also whether the hay comes from stack, shock, or bunch.

CITRUS, OLIVES, FIGS.

The Corning Olive Growers' exchange has decided to disband.

The Riverside district had shipped 1265 cars of oranges and lemons up to Mar. 10.

It is reported from Riverside that sixty per cent of the big navel orange crop of that section is still unpicked.

Spanish exports of olive oil were 82,670 metric tons during the first 11 months of 1916; while during the same period of 1915 they were 61,082 tons and in 1914, 42,274 tons.

Merced Calimyrna fig growers pooled their 1917 crop and sold them to the highest bidder last Saturday at \$230 per ton for first quality as against \$172.50 in 1916 and \$120 in 1915. There were 110 tons in the pool.

The investigating committee desired by Butte and Sacramento orange growers to investigate citrus standardization for two years seems likely to be recommended to the Legislature by the Assembly committee on agriculture.

Stanislaus county fig growers at a meeting held at Ceres last week perfected the organization of a fig growers' association. It is planned to increase the membership till every grower in the county is a member.

There is some talk of establishing a packing house and sending all figs out of the county packed under the association's name. A meeting of fig growers was also held during the week in Merced county, but no permanent organization formed.

GRAPES AND SMALL FRUITS.

Raisin Day comes April 30. There will be an elaborate celebration in Fresno.

About 5400 tons of raisins were shipped East in February. This is 2100 tons increase over Feb., 1916.

Vine pruners in the Fresno district who have formed an organization announce that they will expect a daily wage of \$2.50 for nine hours work instead of \$2.25 as now received.

Strawberries have begun to arrive from the Imperial Valley. A number of shipments were in last week and the berries were very good. They sold at \$7.50 @ 9.00 per crate of 30 baskets.

DECIDUOUS FRUITS AND NUTS.

Donald H. Graham planted 2000 pear trees in Antelope Valley this spring.

The last load of the 2000 box crop of apples from a Mendocino orchard was delivered at Mendocino in the middle of March.

Tulare peach growers have named a committee to contract their peaches to the highest bidder. They had 4,000 tons last year.

Early frost last fall and heavy winter frosts have killed a large percentage of young budded walnut trees in Sacramento Valley.

Sixteen fruit growers of Banning have clubbed together to make their own lime-sulphur spray. They have a carload of sulphur already this spring.

The Gridley Farmers' Union has contracted its peaches to the California Packing Corporation at \$40 for clings, \$25 for Lovells and \$22.50 for Muirs.

The Benson-Jones bill appropriating \$250,000 for a deciduous fruit experiment station has been approved by the Senate Committee on Agriculture.

When the California prune crop goes up to 200,000,000 pounds again, if we can't sell any abroad, every person in U. S. will have to eat two pounds per year. Horrors!

No more 1917 unpeeled dried peaches can be sold by the Cal. Peach Growers until the crop can be estimated, as all the orders that are safe have already been received.

About 150 tons of prunes were contracted around Ukiah about Mar. 15 at 5 1/4 cents for this year's crop and 4 cents for the next two years. This was when growers in other parts of the State were getting 6 cents where they were foolish enough to contract.

Reports received from many counties by the State Commission of Horticulture show a remarkable increase in acreage planted to trees and vines last month in California. Madera county planted 84,924 trees during February exclusive of several hundred thousand cuttings, the major portion being peaches, apricots and figs. Yolo county, 72,030 trees, with almonds in the lead. Large increase in all fruits. San Luis Obispo county, 65,050 trees, also shows almonds holding first place. Total increase here more than 30 per cent. Kings reports an excess of 109,000 trees and plants; apricots ranking first, prunes and peaches following in order mentioned. Yuba county: 385,316 trees, vines and plants were received for planting, prunes leading other trees.

MISCELLANEOUS.

The Saratoga Blossom Festival was postponed to Mar. 24.

The Linda Vista Poppy Festival will be held Mar. 31 east of San Jose.

N. P. Searles has been elected to succeed himself as Yolo County Farm Adviser.

Kill Squirrels Kill Gophers

The only exterminator that is 100% efficient and guarantees results or money back is

KILMOL
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WASTE BALLS \$6.00 PER THOUSAND

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Give the roots a chance

You can go deep without bringing up trash, stones or manure. You can at the same time pulverize and level. For thirty crops rely upon the forged sharp, penetrating disks of the

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Disk Harrow—Single or Double Action—light in draft and built for a lifetime of service. If your dealer has not the genuine CUTAWAY, write to us direct. Be sure to write as for our new free book, "The Soil and Its Tillage."

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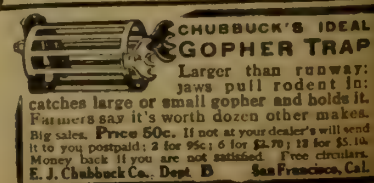
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The Gridley Herald prints a list of standard farm books available to its readers on application to the Gridley High School.

Morris and Snow, seedsmen of Los Angeles, were bothered by a fire recently, but continue to fill all orders as if nothing had happened.

The Farmers Protective League has secured amendments to the State Market Director's commission men bill so that it does not apply so severely to co-operative organizations.

Loss to packed goods in transit may be avoided and a saving of lumber can be made by revising the methods of making boxes, according to the District Forester, 114 Sansome St., San Francisco.

The Western Pacific Railway has bought 104 miles of the Nevada-California-Oregon Railroad to get into Reno, Nevada. They also hope to get the road from Hackstaff, Cal., to Reno, and the road from Blairsden through Chilcote to Plumas Junction.

The Tri-States Agricultural Congress is to meet in Riverside Apr. 24 and 25. It will include presidents of the universities of Nevada, California, and Utah, and the Governors of the three States. The Salt Lake Railway will have a demonstration train there.

To prevent diversion of water from irrigation and to prevent destruction of scenery at the eastern gateway of Yosemite, a bill is pending in the Legislature to prohibit sale of electrical current generated by water power within the State, to communities outside the State.

As an evidence that Riverside county is growing prosperous we submit the following: Last year its orange and lemon crop brought in \$3,500,000; deciduous fruits, \$750,000; hay and grain, \$2,500,000; beans, beets and other staples, \$1,000,000. Its alfalfa sold during the year from \$15 to \$20 per ton; its olives sold at \$75.00 to \$175.00 per ton. Its bean acreage was increased from 1,100 acres the year before to 3,000 acres last year. Its deciduous and nut acreage is now put at 25,444 acres and its citrus acreage is 25,477 acres. There are in the county now oranges, 19,844 acres; lemons, 5,664 acres; grapefruit, 467 acres; apples, 3811 acres; apricots, 8156 acres; peaches, 3287 acres; prunes, 586 acres; cherries, 412 acres; almonds, 1545 acres; walnuts, 2205 acres; olives, 1870 acres; grapes, 2571 acres; cotton, 5000 acres; beans, 2799 acres; beets, 3220 acres; potatoes, 425 acres; alfalfa 29,168 acres, and grain, 122,701 acres. Dates are now grown successfully in the Coachella Valley. There are now 40,000 imported and 500,000 seedling date trees in the valley.

FROST DAMAGES FRUITS.

Peaches and prunes have not been damaged much by frosts but apricots have, in certain parts of the State. In Kings county they have been thinned. In Riverside they had three nights of cold, including snow and ice. Almonds and peaches also suffered here. In Butte county, smudging as a community proposition saved most of the almonds. Those who used frost pots in Santa Clara county saved their crops, but there was considerable real damage due to several frosty nights. Prunes were not open enough to be hurt. Pajaro Valley apricots seem to have escaped with little damage and the apples were not out. San Luis Obispo IXLs were somewhat damaged but little else was hurt. Apricots of the Pomona district were nicely thinned. About San Bernardino some late peaches were in bloom and these suffered some along with plums, almonds, and apricots. East of Bakersfield 'cots on low ground were damaged some. In Ventura county there seems to have been severe damage to apricots. In Fresno county 'cots were hard hit in some localities, but peaches only slightly touched.

CLEAN CULTURE OF RICE AT SMALL EXPENSE.

[Written for Pacific Rural Press.]

Clean rice culture has been a topic for much discussion among rice growers of California ever since the industry assumed commercial proportions and while many still refuse to expend time and energy to keep their fields clean during the growing season, more progressive growers are finding that such practice materially lengthens the time rice may be grown on land without rotation.

That the cost of clean culture is of minor importance is subscribed to by J. H. Harlan of Woodland, who farmed about 75 acres of his poorest grain land to rice last year and who harvested 38 sacks of good clean seed rice, while most of the rice on the neighboring acreages produced smaller yields of poorer grain, even though it was the first year the land had been cropped to rice.

Early in the growing season Mr. Harlan instructed the workman who was caring for the irrigation water to pull any water grass or off varieties of rice he might find in the checks when going through the field. For a time the man followed instructions, but was persuaded by neighboring growers that it was a waste of time, so discontinued that part of his work.

The next attempt at getting the field cleaned was made by Mr. Harlan's son, but he also succumbed to the neighbors' advice. Convinced of the value of such cleaning, another man was hired who followed instructions till the rice was ready to harvest, with the result that the field was entirely clean.

The chief reason for Mr. Harlan's insistence in the matter was his fear of Italian rice, which ripens earlier than Waterbune, the variety he grows, shattering out badly before harvest time and re-seeding the ground heavily for the next year unless pulled before ripe.

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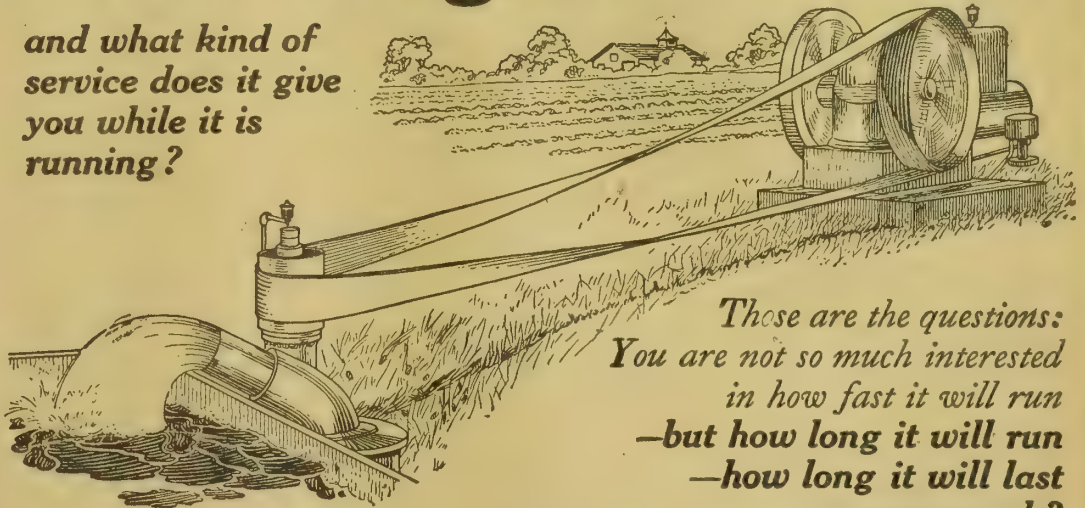
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HOW TO BUILD A FARM PILE DRIVER.

[Written for Pacific Rural Press.]

The floods in Southern California in the spring of 1916 tore out many fertile fields, changed many water-courses, flattened out many creek beds so they would not be confined at all in event of high water, and left remaining good soil in danger of future floods.

Among the common means of protection being installed are piling, driven and connected together to direct the streams along harmless lines. The Yucaipa Land Co. did this last winter on a little job of 116 piling driven at three curves where otherwise there was no knowing what the creek might do. Old telephone poles about 16 feet long and costing \$2 each were used. A \$100 pile driver and three men drove an average of six pilings per day of 9 hours, according to one of the workmen, putting them about 12 feet into the ground. This is certainly no record, and could have been greatly exceeded had a gasoline engine been used instead of the horse, to raise the 1750-pound pile hammer. As their pile driver frame was too elaborate and expensive for any but a co-operating bunch of farmers to undertake, we describe a simpler one based on our experience in building several for bridge work.

Have an iron hammer cast, at least a foot wide, weighing at least 1000 pounds and with grooves on two sides a full six inches wide and not less than two inches deep. Get or splice 4x6 straight grained timbers at least six feet longer than the piling to be driven. These are to be the "leads."

Lay them parallel on the ground with a 4x6 about 12 feet long cross-wise under one end. Bore a 9-16-inch hole through the four-inch diameter of each lead in the center six inches from the end, countersinking it. Cut a shoulder on the outer flat side of each, on that end, 3/4 inch deep and about 11 inches from the end, adzing out the wood 3/4 inch deep to the end. Now lay two 3x12

plank about 16 feet long outside the 4x6s with their ends on the same cross timber. Bore holes through these six or eight inches from the end, to correspond with the holes in the 4x6s. Run half-inch bolts through the leads and the planks (which are to be the "sills"), drawing the nuts up to fair tightness. Now shove the leads ahead so the cross timber they are resting on will be about eight inches back of the end. Fasten the crosspiece to the sills by screw-ended U-bolts so the sills are just wide enough apart that the pile-hammer fits between them with perhaps 3/4 inch play. The cross piece is to brace the pile driver from tipping over sidewise under strain. Spike or bolt a cross piece on the other end of the sills to prevent spreading. Now bore a 9-16-inch hole in the center of the top end of each lead and through a 4x6 cap which is to hold the top ends of the leads at the right distance apart and support the block and tackle by which the hammer is to be lifted. This cap should extend a few inches past the leads on both sides. Raise the top end of the leads and support them by a piece across the sills about their center. Bolt the end of a straight-grained 2x6 to the outside of each lead three or four feet below the top, countersinking the inner end of the hole to prevent the pile-hammer catching the head of the bolt. The 2x6's must be long enough so that when the leads are vertical, they will slope backward and bolt to the sills at an angle of about 60 degrees. Tie your pile-hammer rope to the cap so its ends may be used for temporary guys. Raise the leads by pushing up the 2x6's. When the leads are square with the sills, nail or bolt the lower ends of the 2x6's to the sills and nail crosspieces on them for a ladder. Spike or bolt 2x6 braces from near the top of the leads to the outer ends of the cross-piece 4x6. Run your rope through double and single blocks; and hang them; also a snatch block to run the rope back to the nigger head on the

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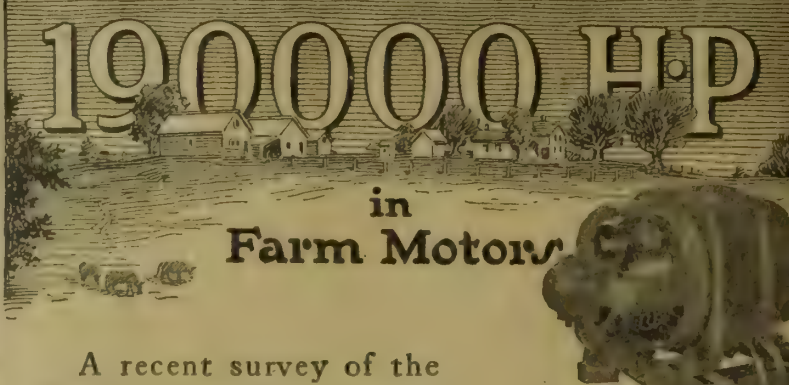
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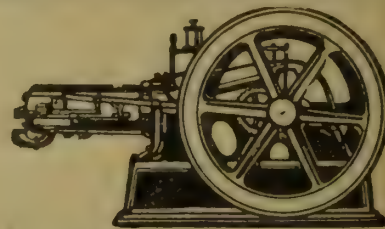
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engine. Spike or bolt level braces from the leads to the ladder at intervals of about eight feet. Fasten crosspieces on these five inches clear of the leads to hold them stiff. A 2x4 crosswise of any of these or the sills and next to the leads, will hold the pile-hammer wherever you wish. About four feet from the top, bolt strap irons to the leads so they will hold a 2x4 flat against them. This is for the hammer to rest on while you are raising the piling and placing it. An X-brace on the sills or corner braces from them to the ends of the cross 4x6 will keep the frame square when moving. Set the engine on the sills where convenient.

Drive the piling small end down so they will be tight all the way around and up and down. Do not point them or they will shoot to one side when they hit rocks, etc. Trim down the small end to a square about half the diameter of the end. To hold the piling in place as it is driven will require one man with a couple of wooden handsticks about two inches in diameter and four feet long. He will place these between the leads and the piling to prevent it from giving outward. It can be kept from giving inward by laying a gas pipe across the level braces in front of their cross piece if desired, though it can be thoroughly controlled with the handsticks. Keep the leads greased. The hammer trip for the Yucaipa Land Co. was a scissors arrangement which naturally hung closed. In position, the shoulders on its lower ends clutched the triangular block fitted between iron plates which were fastened to the top of the pile hammer. Between the leads near the top but six inches lower than would be absolutely necessary, were sloping blocks which forced the upper ends of the scissors together, thus releasing their hold on the hammer. The six-inch leeway is to prevent undue strain on the rope when the hammer is tripped.

Long moves are made by hitching the rope to a post in the distance and winding it up on the engine, using plank for runners. Short moves are made with crowbars and handsticks.

A new 3/4-inch manila rope is plenty strong to lift the hammer for three months of steady work if not otherwise strained or rotted with internal moisture.

POWER REQUIRED FOR PUMP.

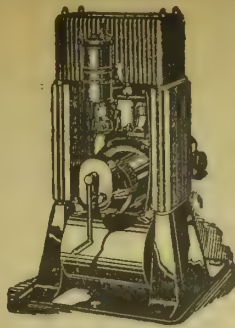
To the Editor: I have a small irrigation plant—3-horse engine and Typhoon pump, 2-inch pipe. For more water I want to install a 2-inch centrifugal pump. Pump sets about 40 feet from river with about 10 feet lift. Lift above pump for irrigation about 40 feet, through 400 feet of pipe. Engine cuts out nearly half with present pump. Have I power enough for centrifugal?

Also, I have to fill a 6000-gallon tank daily, with a lift of 20 feet more—about 60 feet in all. Will centrifugal make this satisfactorily, or would it be better to leave force pump in to fill tank, and use the other for irrigation only? I will have a short turn below pump in pipe, and two above. Will this reduce efficiency much?—E. P.

[Answered by Prof. S. H. Beckett, University Farm, Davis.]

A two-inch centrifugal pump is rated to discharge approximately 100 gallons per minute. On a 30% efficiency basis this size pump will take .08 horsepower per foot lift of water or 3.2 horsepower total for

the 40 feet. Onto this will have to be added sufficient horsepower to overcome the friction of the water in the discharge pipes. Forcing 100 gallons per minute through a two-inch discharge pipe will create an excessive friction head and in order to keep the friction head within reasonable limits the discharge pipe will have to be increased to at least three inches in diameter. With this friction head plus the friction of the water in the elbows plus the horsepower required in raising the water, the horse power of the engine would have to be increased.



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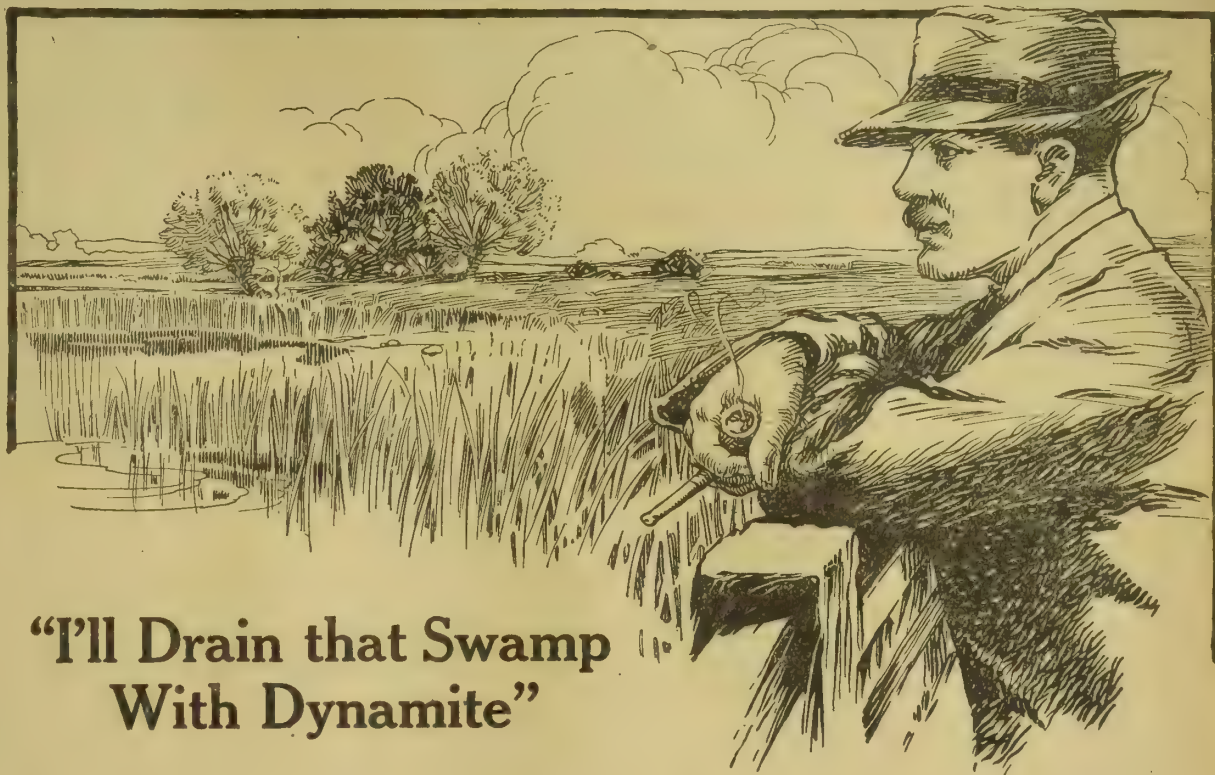
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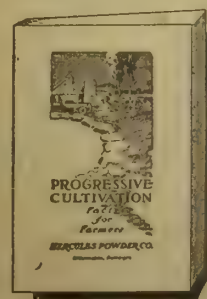
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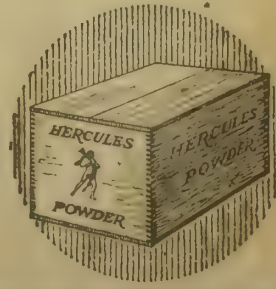
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Control of Abortion in Cattle.

Abortion is a disease so widely disseminated that few herds of dairy cattle are free from the infection, according to Dr. W. I. Williams, Research Professor of Diseases of Breeding Cattle at Cornell University, who lectured before cattle breeders and veterinarians at Sacramento December 26 last.

The infection may even be present in cattle without the occurrence of abortion. When the virulence or disease-producing power of the germs is high, losses occur in the herd from abortion, sterility, retained afterbirth, or diseased ovaries and they also cause diseases of new-born calves such as calf scours, pneumonia, joint disease and similar complications. In infected herds not only the aborting cows but non-aborting cows, bulls, and calves may harbor the infection, and calves and young heifers should be protected. Heifers carrying the first calf are more liable to abort than older cows. The two periods when the germs of abortion infection are most liable to gain entrance to the offspring are at the time the heifer calf is born and at the time she is first served by the bull. The entrance of the germs at these times is especially liable to cause damage. In order to obviate as far as possible the infection, Professor Williams recommends the following procedure to all cattle owners having animals valuable enough to warrant the extra expense:

Care in Breeding.—Before and after service irrigate the sheath of the bull with one-fourth per cent Lugol's solution. It is advisable to administer a vaginal douche of this solution an hour or two before service to cows which do not conceive at the first service. Dr. Williams has discovered that the use of this solution does not interfere in any way with conception. If the cow still fails to breed, enlist the services of a qualified veterinarian.

When the cow has reached her 270th day of pregnancy or earlier, if calving seems probable, give her a thorough bath with warm water and soap, lathering the skin repeatedly until thoroughly clean. Rinse off the soap and water with a one per cent solution of compound solution of cresol. Place the cow in a clean, disinfected stall. After the bathing wash the tail, vulva, thighs and udder daily with warm compound cresol solution, one and a half to two per cent, and douche the vagina daily with one-fourth per cent Lugol's solution.

After Calving.—When the calf is born rub it dry and disinfect the stump of the navel cord. Do not tie it. Do not touch the navel stump with the hands. Fill a goblet or glass to the brim with 1-1000 corrosive sublimate solution and having the calf held on its feet, push the goblet against the navel region so as to submerge the navel stump completely and keep it submerged for fifteen minutes. (Corrosive sublimate tablets can be purchased of a size that one to one pint equals 1-1000.) Then dust the navel stump over heavily with a powder composed of equal parts of powdered alum and boric acid. Place the calf in a clean, dry, comfortable stall and keep it alone until two or three

months old. Do not permit the calf to suck.

Care of Calf.—According to Dr. Williams, it is best in most cases to feed calves on boiled milk. Some very young calves do not thrive on boiled milk, and when it does not appear practicable to boil the milk the following special precautions should be taken to protect the milk for the calf from infection:

Before drawing milk from the cow to feed the calf, wash her thoroughly according to the plan recommended prior to birth. The milker must first disinfect his hands and use a sterile pail. The first milk from each teat should be discarded. Repeat the washing immediately before each milking. Repeat the douches heretofore described daily until all discharges have ceased. At eight or ten days of age nearly all calves may be safely placed on boiled milk. The milk which is boiled may be drawn from any economic source. In order to prevent scorching a large double boiler or water bath should be used to heat the milk.

When all discharges after calving have ceased, the douching of the cows may be stopped, though it would be well to continue the external washing daily in the interest of clean milk as well as of the general health of the herd. When abortion or retained afterbirth occurs, each case should be handled individually by a skilled veterinarian and by the special treatment restored to health as promptly as possible. Much needless loss might be saved by owners of valuable purebred cattle if the services of veterinarians skilled in the special work perfected by Dr. Williams were available. By a monthly or quarterly veterinary examination of all the animals in a herd, cases of sterility will be discovered before it is too late to cure them and incurable or dangerous cases can be eliminated before they have done irreparable damage to the bull or other cows.

Don't Sell Cows.—This does not mean, however, that all animals infected with abortion should be disposed of. As a matter of fact, in herds in which abortions are occurring a cow that has aborted once or twice may be just as valuable for breeding as one that has not. Cows seldom abort more than two or three times. Cows that are not made sterile by abortion will in all probability resume normal reproduction. On the other hand, if they are removed to make way for fresh animals there is a possibility that the newcomers already are or soon will be infected and are more liable to abort than the old ones. The elimination of infected animals is, therefore, not to be recommended as a means of controlling the disease unless their value is not great enough to warrant the expense of treatment.

By keeping pregnant animals, the disease will be brought to a standstill more quickly than if new susceptible material is continually added in their place. Some cows apparently become immune without aborting. It is the history of the disease in the great majority of



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The best recommendations for Empire Milkers that we have seen have come from users. They will interest you. Send for our illustrated pamphlet "What Dairymen Say."

herds that after reaching its height, it gradually subsides of its own accord until only a few slips occur each year or it may disappear entirely. In herds where abortions have not occurred in several years, or at least only rarely, the owner should take particular pains to prevent its introduction. Every case of abortion should be regarded as infectious until proved otherwise.

Scours.—For outbreaks of pneumonia and scours in calves Dr. Williams recommends the frequent use of enemas of physiological salt solution and the daily injection of liberal amounts of calf scour serum in addition to the special precautions to be taken at time of calving mentioned above.

The butter situation East continues bullish. The government's report of stocks in cold storage held by 257 firms March 1, 1917, showed on hand 15,467,475 pounds against 29,808,296 pounds February 1, indicating withdrawals during February of 14,340,821 pounds. On March 1, 1916, there was in store in the hands of 215 firms 15,032,769 pounds against 14,582,975 pounds held by the same firms March 1 this year; 449,794 pounds less than a year ago. It is this shortage in cold storage stocks and the lateness of spring that has caused the market to

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Down they go—to smash! In a HALF! Thousands of farmers are selling their No. 1 hay, milling off grades. They're making the grandest alfalfa chop; fattening hogs, cattle, sheep, poultry and pigs; making it cheaply, easily, with our famous patented Recutter Attachment (suitable for field use). Handles leaves, stems and all; no waste; no injuring color of hay. Makes dandy combination feeds from clover, rice, straw, cornstalks, bean straw, pea vines, oats and rye. Biggest guaranteed capacity! 1200 to 2700 lbs. per hour with Junior Mill (run with 6 to 8 h. p. engine). (Cracks peas, corn and beans.)

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SEVEN SIZES. Tremendously simplifies silo filling. Grip Hook Force Feed (able automatically feeds cutter, saves wage and board of from one to three men. Makes richest feed, increases silo tonnage.

Flower built independent of cutter. Let your fan spin fast or slow, the speed of knife shaft is unchanged. No belt to slip, wear out, and waste time, money, power. Patented low-speed one pulley chain drive is faster, cleaner, saves 1-4 to 1-3 power cost! Powerfully built. A fourth heavier, with wonderful record for long service.

Write for latest catalog and sample of chop to Pacific Implement Co., San Francisco, Cal., or Smalley Mfg. Co., Dept. 41, Manitowoc, Wis.

hold up as it has and rule higher than a year ago.

A Practical Bull and Calf Barn.

Purebred breeders are coming more and more to the belief that the well-cared-for dairy calf is a better prospect for future usefulness than one which has been stunted by poor or improper care and feed, and that this applies alike to bull and heifer calves.

With a realization of this the J. S. Gibson Co. have erected during the past winter a bull and calf barn that is both sanitary and convenient as well as spacious.

This building is 100 feet long and 36 feet wide, with a loft overhead large enough to accommodate a year's supply of hay. The lower floor is divided in the center by an eight-foot feed alley. The floor of this alley at the end used for calf pens slopes to a drain so that it may be hosed off quickly.

Calf pens are located on both sides of this alley at one end of the barn, hay racks being built next to the outside wall in each pen with feed trough underneath and hay holes in the floor above so that hay can be thrown directly from the mow into the racks.

The partition separating these

pens from the alleyway is partially made of stanchions, a shelf extending along the front of the alleyway providing a place for the milk buckets used in feeding the calves. As this is directly over the concrete floor, any spilled milk is easily cleaned out by the use of hose and water.

The bull pens are for the young sale bulls rather than for the service bulls, they being smaller than the calf pens and each one holding a single animal.

They are all equipped with individual watering troughs, made of lumber and supplied from a master trough which is equipped with a float valve. This keeps all troughs filled to a given height at all times. It is a useful device.

A litter and feed carrier runs the entire length of the building, over the alleyway, and outside corrals are provided for each stall or pen on both sides of the building so that ample exercise may be secured. Not only does the barn insure better health of the young stock, but better growth also, as the cold winds and rains do not affect them.

Making Silage Overdo its Mission.

[Written for Pacific Rural Press.]

"My silo has been a life-saver." Such is the answer pine out of ten dairymen in the Sacramento Valley who have had a silo to feed from the past winter will give you when questioned as to their experience.

Probably there are other similar experiences that could be related which would tell of the benefit of a silo better than the following, because they would show better judgment in the balancing of feeding stuffs; but here at least was the story a small dairyman told us while attending a farmers' meeting not long ago.

Two years ago he erected a small silo having a capacity of about 65 tons. During the winter of 1915-16 he had alfalfa hay to feed with his silage; but high prices appealed to him in the fall of 1916, with the result that he had nothing but a silo

full of Indian corn to go through the present winter with.

Apparently, he says, the cows ate greedily of the silage ration till about the middle of April when a little grass started to grow in his pasture. Before that time his cows had held up well in their milk despite the cold winter, and were in apparently as good flesh as ever. But as soon as they got a taste of the green feed they refused to eat heartily of the silage, their milk flow dropped off some and he was anxious to know what was the matter with his silage.

Of course it was natural for his cows to want a change of diet and he had overdone the silage. But he has carried his cows through the winter when, as he says, "I'd have gone out of the dairy business but for the silage."

SKIM MILK FOR DAIRY COWS

To the Editor: I have a surplus of skim milk and would like your advice on the value one would get in mixing it in the beet pulp and cocoanut in feeding it back to the cows.—L. W. F., Cupertino.

[Answered by Prof. F. W. Woll, University Farm, Davis.]

Several years ago the question of feeding skim milk to dairy cows was repeatedly discussed in the dairy press, and practical experiences were published of farmers who had adopted this method of utilizing the milk. There has been no mention of this practice of late years, however, so far as I am aware, and it is a fair inference that it is no longer followed, or has been adopted only in very exceptional cases. Trials that were made at the time showed that better value was obtained in feeding the skim milk to hogs or calves than to cows.

If the correspondent has a surplus of skim milk above what the young stock will take, there will be no difficulty in getting the cows to take it by mixing it with beet pulp and

cocoanut meal, as suggested; its value for this purpose would very likely be about one-sixth to one-eighth that of an equal weight of grain.

RIDDING HOGS OF LICE AND FLEAS.

Hogs as well as hog-house floors may be kept free of lice and fleas by bedding with coarse shavings that have been well sprinkled with crude oil.

Such has been the experience of Jack Finlay, herdsman of the swine herds at the University Farm, who says that since he began with this method his hogs have been entirely free of lice, except on small spots back of the ears which are not touched with the bedding ordinarily. By the use of a spray pump and disinfectant on these parts once in a while, however, the hogs are kept entirely free of vermin.

Where shavings are not available straw will answer the purpose fairly well. Either are simple remedies and much more economical than

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SILOS TANKS PIPE

For dairymen, farmers, feeders in all sizes and proportions.


For water, wine, oil, vinegar, acids, for storage, mixing, fermenting, pickling.

For irrigation, power, water supply, in all diameters and for all pressures. Costs less than any other pipe of equal efficiency and endurance. Outlasts any pipe except cast iron.

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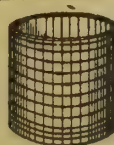
More calves have been raised on Blatchford's Calf Meal than on all other milk substitutes combined.

100 lbs. makes 100 gallons of milk substitute, costing only one-third as much as milk. Prevents scouring and insures the early maturity of sleek, handsome calves.

It is steam-cooked and no trouble to prepare or use.

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REDWOOD TANKS — SILOS. Thirty-five years in this business in Stockton.—A 500-gal. on tank, \$12.00. A tank 6 ft. 2 1/2 ft., \$10.00. Other tanks equally cheap. I deal direct with the consumer, saving 10% to 25%. All sizes in stock. Clear dry redwood direct from the mill. Write for prices today.

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Registered Jacks

Range raised; Guaranteed satisfactory breeders. Field Jacks a specialty. Registered Shire Colts. Will trade for young mules, horses or land.



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NO BETTER SERUM MADE.

An ounce of prevention is worth a pound of cure. Find out about this serum today. Price Right.

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CARRUTHERS FARMS, MAYFIELD, CALIF.

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(The Bacon Hog)
Largest Herd in the State

DUROC - JERSEYS

Mature Stock and Weanlings of both sexes. Sure to please.
SWINELAND FARM,
W. O. Pearson, Prop. Woodland, Cal.

Paddy Rice for Livestock.

[Written for Pacific Rural Press by H. O. Jacobson, Butte City.]

Rough rice has been the leading stock food for centuries in the Orient; for there it is the cheapest available grain. The Chinese and Malays are very familiar with the fact that fattening ducks, geese, and chickens with rice imparts a flavor and texture to the flesh obtained by no other means. The enormous numbers of swine killed annually in China are, of course, mostly fattened on rice.

The hulls of rice fall off readily. When rice is fed to swine, a careful observer will notice that in eating the paddy the hog will reject a considerable proportion of the hulls, but will manage to retain the kernel. This causes slow eating, more complete mastication and more perfect assimilation. If examination is made of the manure passed by horses and mules, cattle or hogs fed with rough rice it will be found that seldom does a hull, apparently whole, contain the kernel. The percentage of hull in rice ranges between 13 and 16 per cent by weight. Rolling the rice assuredly puts it into a better

form for feeding out to livestock.

The writer has had under observation this winter about 1500 hogs pastured on rice stubble. The hogs varied in age from 12 weeks to two years. Not one of them appeared to suffer from any unfavorable action of rice hulls, but all did well, ordinary hogs of badly mixed breeding weighing about 150 lbs. when put on the stubble gained 75 to 90 pounds in 60 days.

At the present time we are feeding rolled rice to 150 head of mules and horses, which are doing heavy work, in connection with grain hay or volunteer hay, and the stock is being maintained very well. The teamsters are perfectly satisfied with the feed. The daily ration per animal is about ten pounds.

Basing our judgment only on our experience, we believe rice has no local superior for fattening swine. Very ample corroborations of this statement can now be obtained in the California rice districts, especially the older ones, notably about Richvale, Biggs, and Gridley.

Community Building with a Dairy.

(Continued from 1st page.)

years it is expected that vetch, Canadian field peas, sweet clover, rye grass, and root crops will contribute their share toward the necessary supply of dry weather feed as well as provide rotation crops for fertility-building. Corn was tried last year and did very well on about two and a half acres that were sheltered from the ocean wind by eucalyptus trees; but the balance of the 13 acres planted did not yield well. Beets and carrots are already proved crops in the section; and as these furnish succulence in the fall and early winter, a six-acre piece will be planted this season. Rye grass and clover as well as sweet clover will be planted on the low pieces of overflow land, with the idea that they will withstand the excessive moisture of winter and still yield a large amount of feed and provide excellent pasture at certain times of the year.

Besides the rotation of the above crops, all of the manure will be applied to the land systematically, rather than haphazardly. As a further aid in breaking up the fertility elements of the soil, superphosphate and limestone were applied last year. The fact that this work is being undertaken by the community's staunchest business family and banking counselor, as well as one of the largest land-holding companies in the district, is having the effect that the LeBarron Co. wished—more serious thought as to the future welfare of the community followed by more progressive action.

The entire work is figured on a business rather than a philanthropic basis, for as sure as the world every dollar added to the community by more progressive methods will materially benefit all business, including the bank and the large landholder looking for a tenant.

Chute for Rapid Dehorning of Cattle.

[Written for Pacific Rural Press.]

De-horning 500 yearling steers in a day and a half was the record set on the Stanford University's ranch at Durham this spring by Superintendent J. F. Van Loben Sells and Managing Foreman F. C. Franklin as a result of a simple but efficient de-horning chute and stanchion.

This chute, which is built of heavy lumber, as are the corral fences, is long enough to hold a number of steers. The steer cannot back out when a piece of two by four is placed across the chute in slots cut for the purpose.

Access to the chute is gained from the holding corral, and exit is made into an adjoining corral. At the end of the chute a heavy stanchion was built, its uprights extending beyond the frame work of the top of the chute about two feet and each being equipped with a small pulley close to the top. When in operation a small rope is securely fastened to one of these uprights and then carried through the pulley on the opposite swivel, then back again through the one it is fastened to. A man stands several feet away from the stanchion, and as soon as the steer is driven in and blocked from behind, so he cannot back out, a quick jerk is given the rope, pulling the uprights up tight around his neck and holding his head secure while another workman clips off the horns with de-horning clippers. An application of tar and sheep dip quickly follows; the heavy door on the side of the chute is opened, the rope let out, and the job is done. By that time another workman has another steer ready to put into the stanchion.

CARRUTHERS' FARMS FIRST ANNUAL



Shorthorn Sale

MAY 2nd, 1917

MAYFIELD, CAL.

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Offers for sale a select lot of weanling registered bulls, sired by such bulls as Fond Lavender, College Count 3rd, Besie's Council and Whitehall of Orange. For prices and particulars apply to

DAVID J. STOLLERY

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Hillcrest Stock Farm.

Shorthorn Cattle, Shropshire and Merino Sheep



Shorthorn Bulls for Sale, sired by such noted bulls as King Lancaster, Knights Perfection, Greenwood Knight and Greenwood King. Nearly all offsprings of the famous King Edward.

These Bulls are conceded to be the best offering ever made from the Hillcrest Stock Farm.

For Particulars Apply—

T. S. GLIDE
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King Lancaster, sired by King Edward, grand champion bull State Fairs, 1909-10-11.

ORMONDALE SHORTHORNS



Golden Goods, Jr., Herd Sire.

Our 1916-17 offering of yearling bulls is small but select. They are all heavy boned, solid red in color and of Scotch and Scotch-topped breeding. Suited for either the range grower or breeder.

DUROCS.

Our Durocs are of the big type, with big bone, well-arched backs and carrying good hams.

We have a few head of service boars, now ready for service, solid red in color and out of prize-winning animals.

Every Animal Positively Guaranteed

Whether you buy or not, visit our ranch, 7 miles from Palo Alto on Woodside Road. We welcome inspection. Prices and pedigrees on application.

Shorthorn Cattle
Duroc-Jersey Swine

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HOPLAND STOCK FARM

REGISTERED SHORTHORN BULLS

A fine lot of individuals. Ready for service on the range. Registered Berkshires, Holstein Bulls from high-testing cows.

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Los Angeles Hog Raisers Handicapped.

To the Editor: On Feb. 27, 1917, the Los Angeles County Board of Supervisors passed a very drastic ordinance which is designed to make the garbage hog feeders clean up and keep clean; it tells them how they are to handle the food and how it shall be fed. It provides for every swine breeder in the county to obtain a license to carry on his business and also provides that the owner shall pay a fee of \$3.00 per hundred hogs or fraction thereof every three months. Do you know what we are up against? We are feeding \$50.00 grain, \$16.00 hay and various concentrates which cost \$40.00 to \$60.00 per ton. We are compelled to market in one of the poorest livestock markets of this country. We take our hogs to Los Angeles and ask the packer to please give us all that he can for them. On the Pacific Coast there is but one union stock yards where hogs are sold at auction, and where the best hog gets the best price; this is at Portland, Ore. At Sacramento, Cal., a union stock yards is to be built immediately. At San Francisco one packer pays for hogs on their dressing percentage. Los Angeles, except in a very few instances, does not discriminate between a good hog and a poor one, when he is buying it. We take what we can get and say thank you. We of Los Angeles county are unable to get our stock to any other market reasonably enough, so that we can force the Los Angeles packer to pay

more. The packer would laugh at us if we asked him to pay us for the expense we were put to in complying with your ordinance. Ordinarily we do not get our hogs on the market in less than 9 months; a car of hogs numbers 80 to 100 head. To pay for the fee you ask, we would have to get \$9.00 per car more than the Kern county breeder, the Ventura breeder, the Imperial breeder or any other breeder so that we could compete with him on an equal basis.

Not one-tenth of the hogs killed in the county are raised here. If this ordinance is put in force as it now reads, all of the hogs killed here will be raised elsewhere. Your act so discriminates against the legitimate industry of swine raising that we will be forced out. To you it may seem a small matter, when you ask us to pay \$3.00 per quarter per hundred hogs. To us it is a great big thing, because the cost of everything to us is increasing, and because we are unable to get the money back. The dairyman makes the consumer pay for his cleanliness and inspection, etc., as does the hotel keeper or the saloon keeper, but we are powerless to get that money back. If we ask the packer to pay it to us, or if we insist on having it he simply will pass up our hogs and buy from a breeder outside of this county who is not handicapped by any such license and fee.

Donald H. Graham.

Antelope Valley.

Dairy Laws Pending in Legislature.

[Written for Pacific Rural Press.]

A number of bills introduced into the 1917 legislature have to do with the regulation of dairies in California. A few of these are summarized in the following:

Assembly Bills 475 and 476 are amendments to the present dairy laws designed to relieve the dairyman with less than four cows from all control or inspection by the State Dairy Bureau or other sanitary commissions.

Assembly Bill 948 would repeal in whole the dairy law passed by the legislature of 1915 which calls for tuberculin testing of dairy cows or pasteurization of all market milk sold for human consumption, also the grading of milk.

Assembly Bill 1124 is designed to include butter as a dairy product under the 1915 bill. It would require all cream used for the manufacture of butter to be either from tuberculin-tested cows or pasteurized

before being used for manufacture.

Assembly Bill 1337 is a revision of the 1915 law above referred to. The bill provides for the grading of market milk, but proposes to lower the score under which certain grades can be produced. It also provides for the marking of reactor cows with a small "T" in the ear. While it includes butter as a dairy product it allows the use of the "flash" system of pasteurization of cream. It also calls for the branding of all butter sold in boxes or cubes with either the words "pasteurized" or "from non-reacting tuberculin-tested cows" requiring the name of the producer of such butter.

Assembly Bill 1123 is a bill similar in design to the one above noted but less explicit and paying more attention to market milk than to other dairy products. It also includes butter and provides for the marking of all reacting cows.

Rice and Rice Straw for Horses.

Rice straw as a roughage for horses, mules, beef cattle and sheep holds much promise to the livestock grower in the rice districts, as a result of experience in using it the past winter and spring when other roughages were scarce and high priced.

Among others who had satisfactory results with this new feed was the Tweede Ranch and Land Co. of Glenn county, who fed chopped rice straw to their work stock and cattle all winter. They state that their

stock is in as good condition as when fed other higher-priced feeds in other years.

According to Mr. Tweede, rice straw has a higher feeding value and is more palatable than straw of the other small grains, because it is cut when green instead of after maturing, thus leaving a large percentage of the nutrients which would otherwise go into the head, in the straw.

Ground or whole paddy rice is also recommended as a horse feed by J.

Do You Want Long Distance Breeding?

We have a son of the California State Champion three-year-old for sale. Born October, 1915; Sired by **PRINCE ALCARTRA KORNDYKE**, whose dam is **TILLY ALCARTRA**.

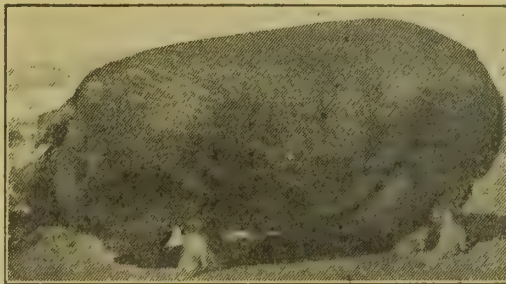
The Dam of this young bull is not a fifty-lb. cow, but she has to her credit 21,208 lbs. milk and 860 lbs. butter in one year, which is the largest record ever made in California by a Junior three-year-old.

If you are in the market for a bull, it will pay you to visit our ranch and see what we have to offer—at prices that will surprise you.

J. S. GIBSON CO., Box 97, Williams, Cal.

"THE NAME GIBSON INSURES QUALITY."

BASSETT'S POLAND CHINAS



GRAND CHAMPION SOW,
P. P. I. E. 1915; Sacramento, 1916.

For many years at widely separated show rings, under many different judges of varying type ideals, my Poland Chinas have been consistent prize-winners. My herd is large and I cull closely. The animals sent out as breeders are the very tops of a large number. I KNOW that my kind of Poland China is a profitable farmer's hog, for I send carloads of them to the packer every year—uniform in size, high in quality, quickly and economically matured and finished.

Young stock, \$30 Up.
M. BASSETT,
Box 1, Hanford, Cal.

KINGS COUNTY JACK RANCH

BREEDERS AND DEALERS

AMERICAN JACKS AND JENNETS.

LARGEST HERD IN THE COUNTRY

80 Head Jennets

40 Head Jacks

CAN SUPPLY YOUR WANTS AT ALL TIMES.

Write, or Come and See Them.

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Sale Barn in Hanford near S. P. Depot.

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Send for Sensible folder on feeding hogs
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BULLS - Shorthorns - HEIFERS

REGISTERED AND TUBERCULIN TESTED.

Animals of either sex ready to deliver in car lots or singly.

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CATTLE FEED FOR SALE

I have both wild feed and hay to be sold together, and fed out by owner. Write me at once for prices, etc.

JAS. McCORD,

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HIDES SHEEP SKINS GOAT SKINS FURS

ARE WORTH MONEY NOWADAYS.
Get best results by shipping to the long-established, reliable house of
W. B. SUMNER & CO., 220 Townsend St., San Francisco

L. Mendenhall of Colusa county, who has fed his work stock a ration of one-third barley and two-thirds rice with entire success the past year.

LIVESTOCK IN GLENN CO.
Ord Leachman, Market Agent for the Glenn county Farm Bureau,

shipped two carloads of cattle and hogs from Willows and a carload of cattle from Orland early this week. As a result of his work prices on all kinds of livestock in Glenn county have been materially improved. He will ship three carloads of hogs to Portland later in the month.

Live Stock and Dairy Notes.

[Livestock breeders all over the State are invited to send on postal cards, notes regarding their sales, State and County Fair intentions, new stock, etc.]

DAIRYING.

Glenn county Jersey breeders organized Oct. 17.

A. R. Bates of Modesto becomes a member of the State Dairy Board to succeed E. P. Nissen.

Visalia Co-operative Creamery paid \$26,980 for February fat. About 79,900 pounds of butter were made.

Kings county dairymen received \$185,000 Mar. 15 for February cream at 42 cents per pound for the fat in it.

The highest butter score at the California Contest Mar. 7 was made by P. Peterson of the Valley Flower Co-operative Creamery of Ferndale. It scored 94½.

The American Jersey Cattle Club has just issued a sheet showing the "Highest Yields of Jerseys." Sophie 19th of Hood Farm leads with 999.1 pounds fat in a year.

The Napa County Livestock Ass'n met Mar. 3. E. C. Voorhies of University Farm faculty told them that no man can tell the fat content of milk by looking at it.

D. D. Williams, H. P. Hopgood, W. M. Paine, F. M. Paine, M. Grafton, and T. M. Clark of El Centro have recently placed orders for a 100 ton Indiana silo for each.

Sealed cans for cream are advocated to prevent mixing cream of different quality so all producers may get price according to quality.

Milk produced in U. S. according to Sec. of Agriculture D. F. Huston increased from 7,506,794,000 gallons in 1914 to 7,696,844,000 gallons in 1915, to 7,959,656,000 gallons in 1916.

The new shoots of alfalfa are the parts which cause bloating, according to the University of Arizona.

J. B. Brite of Tehachapi recently sold a carload of 91 hogs at \$12.25, a total of \$1830, to Los Angeles packers.

A detailed study of the cost of producing milk on four farms, recently conducted by the United States Department of Agriculture, leads to the conclusions that on those farms feed accounts for one-half or more of the total cost, the remaining charges being divided equally between labor and other items, such as shelter, use of equipment, use of bull, interest, depreciation, and overhead.

SWINE AND SWINEMEN

An experiment at University Farm to learn the relative value of milled threshed dry and soaked and on the head for hog feeding will be shown to visitors at the picnic April 28.

John Meyers of Ohio, who for the past two years has been field man for the American Berkshire Ass'n, will arrive here this week to take charge of the Carruthers Berkshire herd at Mayfield, for a year.

Elmer Lamb of Ceres reports sales of purebred Durocs since the last State Fair to C. J. Boyd, Hickman; John Estillarte, Modesto; Sadie B. Fowle, Denair; Sydney Smith, Hughson; E. W. Beebe, King City; D. Power Booth, Ceres; H. J. Sherwin, Tonopah, Nev.; Andrew Schendel, Turlock; H. J. Layman, Maxwell; Jack Mongovan, Point Arena; Clifford Farms Co., Strathmore; F. E. Dickie, Vacaville; F. S. Ingram, Willows; H. P. Jorgensen, Snelling; Geo. E. Spencer, Blythe; Berglund & Sundstrum, Turlock; L. A. Welch, Chowchilla; S. P. Summers, Ceres; Chas. L. Metzger, Manzanar; L. S. Pardee, Hughson; V. C. Hague, Fresno; A. J. West, Hughson; A. R. West, Hughson; C. J. Bucholz, Merced; Ralph Lockie, Merced; Dr. Geo. E. Spencer, Sacramento; Earl N. Dargitz, Acampo; and Nicholas G. Jesch, Northam, Nev.

BEEF AND SHEEP.

Oakland is considering a municipal abattoir.

Hay stored for 16 years near Klamath Falls is being fed to stock.

Practically the whole of the wool and textile trade of the United Kingdom is under government supervision.

Argentina exported over 80,000 tons of wool Jan. to Oct., 1916. This is over 6,000 tons less than for the same period in 1915.

Swift & Co. of Chicago have recently purchased 42,000 acres of the Chowchilla ranch in Madera county. The price is said to be \$2,000,000.

S. Traywills of Selma succeeded in getting 148 per cent of lambs in spite of cold weather and poor feed this spring. The ewes are high grade Shropshires.

The Sheepmen's Protective Ass'n was recently formed at Dixon with J. D. Grady, secretary, to urge the legislature to require all dogs to be tagged or subject to killing.

A meat packing plant in Fresno county owned by the Universal Meat Packing Co. of Fresno and built on a \$14,000 site donated by Fresno stockmen and merchants, seems practically assured.

G. P. Rixford of San Francisco, special agent for U. S. Dept. of Agriculture, reports a large new acreage of Deglet Noor and other varieties of date palms being set out in the Coachella and Indio sections.

Siskiyou County Health Officer Dr. J. Roy Jones and the County Supervisors are inaugurating a campaign to eliminate rabies, principally by poisoning the coyotes, says the Scott Valley Advocate.

El Dorado County supervisors seem to have struck the wrong note in abolishing the office of County Horticultural Commissioner; for growers soon held a meeting endorsing the Commissioner's work.

It is said that the Secretary of Agriculture has authorized Supervisor Chariton of the Angeles National Reserve to advertise for the grazing of 4200 head of horses and cattle. There are now about 6000 on the reserve.

News comes from Bakersfield of the sale of the Landers stock ranch near Isabella to T. F. Doyle of Santa Ana. The ranch contains 4000 acres of grazing land on the south fork of the Kern River. The price is said to be \$150,000. Two thousand cattle go with the ranch.

The Stockton Independent prints figures showing that U. S. uses 600,000,000 pounds of wool per year. The clip of U. S. has decreased in five years from 325,000,000 pounds to 288,000,000 pounds. The clips of Australia, New Zealand, and Argentina also have decreased.

Sheep growers as well as hog raisers have made good use of the rice stubble in the Sacramento Valley this winter, finding the rice that is left at harvesting time an excellent fattener. Feeders report no ill effect from the rice hulls on the paddy rice after several months feeding.

An increase of 25 per cent in grazing fees on all national forests instead of 33½ per cent increase as contemplated, will be made for 1917. The charge is to be made according to the value rather than according to administrative cost, to prevent national forest profits from going to a few stockmen.

Superintendent Frazelle of the Fennell Land Co. is en route from the Middle West with a carload of registered Shorthorns. Most of the shipment consists of heifers which will be used as a nucleus for a purebred herd at the company's ranch in Tehama county. H. L. Murphy of Perkins and W. H. Hammond of Chico,

both Shorthorn breeders, accompanied Mr. Frazelle.

W. M. Carruthers of Mayfield writes: "Regarding the fifteen matured, registered Shorthorn cows which we are putting in our sale on May 2, they will either have calves at foot or be far along in calves, guaranteeing them breeders. Among them will be Golden Queen, which we consider one of the very best two-year heifers in America. She will be hard to beat this year at any of the fairs on the Coast; also Roodwood Ury, a three-year cow, which will be eligible to show this fall, with a calf at foot. Both of these cows are sired by Count Avon, the International Grand Champion. Lady Dorothea 6th, also to be sold, is a large red cow and will have a calf at foot the day of the sale. The Dorothea family is one of the best families of the Crookshank strain. A Dorothea was Grand Champion at the Portland Exposition; a Dorothea was Grand Champion at the last International at Chicago; a Dorothea was the mother of Ringmaster, the only bull who was four times Grand Champion at the Kansas City Royal. Many of the other cows are Orange Blossoms Minas, and other good Scotch families."

HORSES AND MULES

Applications for registration of stallions have been coming to Sec'y C. W. Paine of the California Stallion Registration Board at the rate of 25 per day.

The Kings County Jack Ranch recently sold a jack to the Camera Ranch Co. of Ventura for \$3,000, and one to Pete Muller, Gustine, for \$1250.

Jack Barrymore, the world's champion saddle horse, was recently shipped to E. D. Moore of Columbia, Missouri, by H. B. Thornberry of Stockton, to be prepared for the coming campaign for saddle horses this season throughout Missouri, Kentucky, and elsewhere.

MISCELLANEOUS.

Yolo County Fair Oct. 4 to 6.

Fresno, Kings, and Kern counties are mixed as to Fair dates.

A woman graduate of University of Cal. expects to become a veterinarian. There are only two women veterinarians in U. S.

An auction sale of Holstein-Friesian bulls will take place on Thursday, May 24, at the Third Annual Butte County Spring Exposition to be held in Chico May 21 to 26. Twenty head from the best breeders in the State will be sold by the California Breeders' Sales and Pedigree Company.

WASCO HOG AUCTIONS.

Kern County Farm Adviser Geo. C. Kreutzer writes as follows: "At our first hog auction at Wasco Feb. 10, we disposed of about \$5,000 worth of stock, the top price being \$9.40. The second sale was held at Wasco March 10, and approximately \$9,000 worth of hogs were sold by auction, the buyers being well represented. The top price for carload lots was \$12.70 per hundredweight. Hogs, a little light, but grain finished, brought \$12.60, and one car was sold at \$12.50. All the above prices were f. o. b. Wasco. In all about 20 different lots of hogs were brought in by the ranchers and the whole institution was conducted by the Farm Bureau. Three per cent commission was charged by the Marketing Department, which, of course, leaves a comfortable profit in their treasury, either to be used by the Farm Bureau to make improvements in the sale yards in the way of scales, or to be refunded as a dividend to farmers who sold fat stock. Bringing the farmers together in this way seems a desirable thing, as the various types of hogs are studied in accordance with the prices, and at the same time it seems to suit the buyers in that they can come to one of our communities in one day and purchase what we have to offer."

WASTING TEN YEARS WITH SCRUB BULLS.

[Written for Pacific Rural Press.]

J. R. Gallagher of Bodega, Sonoma county, has been dairying 18 years; but the first 10 years he wasted because he used scrub bulls, according to his own version of the matter.

Like many dairymen Mr. Gallagher thought a bull was a bull in those early days; and it took a long time to convince him that the only sure and economical way of building up a herd of dairy cows is through the use of purebred bulls.

The original stock on the ranch when Mr. Gallagher took charge was of Durham breeding, selected as is so often the case by guessing at the amount of butterfat in a bucket of milk. When he finally became converted to the better bull idea, he decided to use Jersey bulls on Durham cows; and like others who have tried this cross, he realized good results.

But he does not content himself with simply a registration paper along with his purebred bulls. He selects big-framed bulls from families that are usually large-framed, as well as from heavy producers, and from those having good-sized teats. By this method he is able to raise grade Jerseys larger in size than the average, and ones having good teats as a rule.

At first he depended upon the creamery returns as a check on the results he was securing from the better bulls; but for the last three years he has had his entire herd tested in the local cow-testing association, of which he is president and all round booster. As a result of this he is able to select his cows with more precision and accuracy. In relating his breeding experience he says that he has increased the average production per cow fully 100 per cent since he began using registered bulls.

But as with all breeding experiences, Mr. Gallagher's methods of feed and care have also been contributing factors. When he took charge of his present ranch it had been heavily overstocked, as is so often the case nowadays in the coast districts of California. His first step was to reduce the number of cattle carried on the place by about half, giving the grass a chance to grow and seed, rather than keeping it pastured down close in the growing season.

To still further aid in this work as well as to milk the year round, instead of during the grass season only, he feeds concentrates and hay from early in the fall till about the first of April as a rule, at which time the pastures are good enough so the cows do not fall off in production when on pasture alone.

The mill feeds usually used are coconut meal, dried beet pulp, dried brewer's grain and malt sprouts. These are fed in equal parts by weight, a good big scoopful per cow being the regular ration fed twice a day. Both alfalfa and grain hay have been fed in connection with this ration the past season, Mr. Gallagher preferring alfalfa hay in the dry seasons of the year, but finding grain hay more satisfactory when there is some green feed. Because of the high price of feeding

stuffs the past winter the above ration has cost 14 cents a day per cow; but normally it is fed for 11 cents a day.

Still another advantage which results from the better feeding practices on this ranch is the physical condition of the cows when green feed comes on. Particularly is this true in a winter like the past one. On other ranches in the district we noticed many cows in a starved condition for lack of supplemental feeds; but on Mr. Gallagher's ranch the cows were in good condition, though they had been milking a pound of fat all winter. In this condition they are able to take full advantage of the green grass and put the succulent feed into the pail instead of onto their backs.

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BOARS of serviceable age all sold. We have a few choice gilts bred to John Henry; an exceedingly choice boar. Also have a fine lot of Fall pigs, either sex. Bar N Ranch, E. A. Noves & Son, Fresno, Sutter, Calif.

POLAND-CHINAS—Bred gilts, \$15; young boars, \$10 and \$15; bred sows, \$25. Weanlings, either sex, \$8. Registered and crated, purchaser to return crates. E. A. Hall, Waterville, Cal.

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LAKESIDE STOCK FARM POLAND CHINAS are money-makers. Satisfaction or money refunded. Geo. V. Beckman & Sons, Lodi, Cal.

POLAND-CHINAS—Big type combined with quality. Choice bred sows, gilts, boars. W. D. Tresholt, Box 82A, Hanford, Cal.

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KNOR HILL STOCK FARM—Registered Poland-China Swine. A. M. Henry, Farmington, Cal.

AMAVAGE FARMS—Poland-China hogs and Holstein cattle. G. H. Loughery, Visalia, Cal.

POLAND-CHINAS—Prize-winners. Money-makers. W. Bernstein, Hanford, Cal.

REAOAKS RANCH herd of registered Poland Chinas. W. J. Hanna, Gilroy.

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CHOLERA IMMUNE BERKSHIRES—August Masterpiece boars September values. Bachelor boars and November Ames Rival boars. \$20 to \$35 each. Fall gilts, \$25. All registered and from choice dams. Prices for March only. W. H. Waugh, Riverside, Cal.

REGISTERED BERKSHIRES—Progeny of Improver B. Young stock now ready for sale. Start your herd with breed and strain of established reputation for California conditions. Geo. G. Meckfessel, Berlin, Cal.

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CARRUTHERS FARMS BERKSHIRES.—Cholera immune. Second annual sale August 2, 1917. Mayfield, Cal.

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LARGE NUMBER of excellent young boars ready for immediate service. Weanlings of either sex. Sired by Joker, first prize boar at Wisconsin State Fair, 1915. Sows and gilts, sired by Iowa Wonder and bred to Joker and Sunnydale's Chief. For prices and further information write, Geo. A. Smith, Corcoran, Cal.

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PACIFIC GUERNSEY HERD—Cattle selected from best Imported and Advanced Register Stock. Now offering choice bulls. C. S. Rasmussen, Leta, Cal.

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AYRSHIRES—Registered; all ages. E. B. McFarland, 412 Claus Spreckels Bldg., San Francisco.

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SHORTHORNS—Herd headed by grandson Whitehall Sultan. Calves sired by \$10,000 Prince Imperial for sale. One or a carload for sale. Get our prices before buying. Butte City Ranch, Box P, Butte City, Glenn Co., Cal.

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D. O. LIVELY STOCK FARM, INC., 216 Hobart Bldg., San Francisco, breeders of Hereford cattle. A few choice heifers for sale. We buy and sell livestock on commission. Farm at Mayfield, Cal.

REGISTERED YEARLING SHORTHORN Bulls—Heavy-boned, thick-meated Scotch and Scotch-topped breeding. Ormondale Co., Route 1, Redwood City, Cal.

BREEDERS OF REGISTERED SHORTHORNS—Milk strain. Choice young stock for sale. John Lynch Ranch, Box 321, Petaluma.

REGISTERED AND UNREGISTERED—Shorthorn bulls for sale. Palacios Ranch Co., 320 Sharon Bldg., San Francisco.

INNISFAIR DAIRY SHORTHORNS—Registered young bulls for sale. Alexander & Kellogg, Suisun, Cal.

HOPLAND STOCK FARM—Registered Shorthorns. Prices on application. Hopland, Cal.

REGISTERED HEREFORDS—H. H. Gable, Diamond G Ranch, Esparto, Cal.

SIMON NEWMAN CO., Breeders of Registered Herefords. Newman, Cal.

GEORGE WATTERSON—Breeder registered Herefords. Bishop, Cal.

SHORTHORNS—Carruthers Farms, Mayfield, Cal.

SHORTHORNS—Fair Oaks Ranch, Willits, Cal.

SHEEP AND GOATS.

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HORSES AND MULES.

REGISTERED SHIRES—Black Hawk Stock Farm, Importers and Breeders, Easton & Ward, Proprietors, Burlingame, Cal.

MISCELLANEOUS.

SAN FRANCISCO LIVESTOCK EXPORT Co., Eugene R. Croley, Manager, solicits foreign orders for purebred registered and merit breeding animals and fowls. California has great diversity of climate and other conditions that enable us to select animals that have been raised under conditions similar to those of the location for which they are intended. We should be informed regarding these conditions and be allowed ample time to make selections. Nearly all disappointments in buying are the result of insufficient information as to conditions or to lack of time for proper selection. Our plan and terms for "raising animals to order" to fit into peculiar foreign conditions is worth investigating. References: Dun or Bradstreet, or San Francisco banks. Office, 319 Underwood Building, 525 Market St., San Francisco.

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CROLEY'S BALANCED DAIRY FEED—the cheap milk producer; and Croley's Alfalfa Meal—the best California calf raiser. Geo. H. Croley Co., Inc., 631-637 Brannan St., San Francisco.

Fast Pig Vaccination Carefully Done.

[Written for Pacific Rural Press.]

We watched Dr. R. W. Ritter of Imperial county vaccinate a lot of pigs averaging 40 to 50 pounds, for L. B. Rogers, not long ago. There was no cholera in the herd and the 300 vaccinated that afternoon were simply insured against the disease at a cost of about 40 cents per pig. Since these pigs are likely to sell at \$16 to \$20 each, the insurance cost 2 to 2½ per cent. Lots of farmers without similar insurance have lost their work, feed, and stock for a whole season or longer.

About 190 pigs of similar size were corralled while the doctor prepared his outfit. It took an hour to vaccinate them. A box was set just over the low fence beside which he was to work. A bucket of creolin solution and sponge or cloth to wash dirty pigs was put handy. The bottles of serum and virus, with labels properly attached to show the date after which they must not be used, were set out. A cup was provided for the disinfectant for the point of injection, and a brush like a wide toothbrush was used to apply it. Syringes for virus and serum had graduates; and a nut on the handle of each could be turned to the right point so enough but not too much could be used at one injection. The serum syringe held 60 c.c. or enough for three average pigs. The virus syringe held less, for only one c.c. of virus is used per 20 of serum. Needles for both are removable, and of course hollow. They were ¼ inch long for the virus and twice as long for serum. The disinfectant was half iodine and half alcohol, which is as good and less expensive than all iodine. A hollow needle was provided to stick through the corks of the virus bottles. To fill the syringe with virus, its needle was taken out and the syringe fitted down over the needle in the cork. The whole thing was then tipped upside down and the syringe handle pulled back to withdraw virus from the bottle. Thus no virus could touch anything outside nor could foreign matter get into it. The serum was simply poured into a cup from which its syringe was filled once for every three pigs vaccinated.

The end of the corral was paneled off about 6x8 feet and a bunch of pigs run in whenever needed. Thus it was handy for one man to catch

a pig while one held another for the doctor to vaccinate.

The man holding the pig would lean against the fence, grasp the pig's hind legs, holding its back against his stomach and its head between his knees. Meanwhile the doctor took both syringes into his left hand, and with his right hand washed the dirt off from between the hind legs and the belly with creolin solution if it was dirty, and disinfected the surface with his iodine brush in every case. Then he shoved the virus syringe needle through and under the skin at a point just below the deepest hollow between ham and belly as the pig was held with his legs in line with his belly. The handle shoved to the set-nut injected the virus and the syringe was withdrawn. Immediately changing to the other side of the belly, about half of the serum (as regulated by the nut on the syringe handle) was injected into the folds of connective tissue but never into the muscle, and then the rest of the serum was immediately injected into the first side considerably below where the virus had been injected, so the serum and virus would not mix. The serum would swell the skin out in a lump when injected. Very seldom would a pig jerk away during the injection; but in such a case there would be a great spatterment of serum over all those present, for the needle opens on the side. On small pigs the point of injection would be pinched to prevent serum running out. The dosage was varied each time according to weight. Always the wound was iodined; and at every fourth or fifth injection the needles were disinfected.

Of course there was an accompaniment of music; but the pigs did not seem to squeal or kick harder during the injection than at any other time. They were turned loose in another corral just over the fence to keep them separate.

To vaccinate a hog of 100 pounds, it was held about the same way but with its head on the ground and the extra man holding it. An easier way was suggested: lay such a hog in a sloping trough with a strip across to catch and hold it. Hogs too big to handle are corralled with movable panels and vaccinated behind the ears.

Hanging Block to Exercise Bull.

[Written for Pacific Rural Press.]

Exercise is a fundamental requirement of all kinds of breeding stock, as most practical breeders agree; but few dairymen put this knowledge into practice with their bulls, keeping them, instead, many times in small corrals from which they are seldom taken except to serve a cow.

Several years ago John Guill of Chico decided that his bull was not getting sufficient exercise, so he fastened a block of wood on the end of a strong chain and suspended it in the bull corral from the limb of a tree.

Careful watching failed to find the bull using this harmless plaything; but in time it was found that the wires joining chain and block were worn through from rubbing. Since

then heavy wire cables have been used to fasten block and chain, and even these have been worn out, although it is seldom that Mr. Bull can be caught near. It is a simple and safe way to give the bull the much-needed exercise, and Mr. Guill believes he is more vigorous and healthy as a result.

CUMBERLAND SHORTHORNS.

To the Editor: Are Cumberland Shorthorn cattle beef or milk type? —F. B., Emmett, Idaho.

[Answered by W. M. Carruthers, Mayfield.]

I presume your inquiry means the shorthorn bull, "Cumberland," which was used so successfully in the Charles Saunders herd at Manila, Iowa, for a number of years.

Points

that make

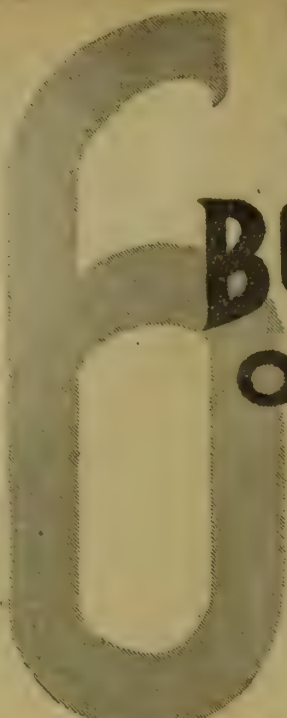

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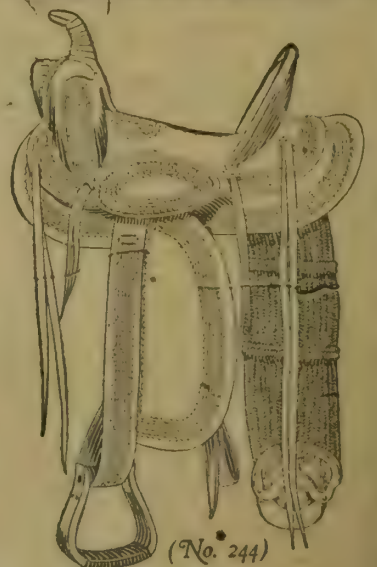
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I know that "Cumberland" sired a great number of good milking Shorthorn cows, but I would term him a beef bull, as he has sired many of the best beef Shorthorns which have been seen in the American show-rings in the last ten years.

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One of the best and most productive ranches in the State of California is offered for sale. 87 Acres of rich sediment land, located north of Santa Clara, 1 mile from station, and 1 1/4 hours from San Francisco. The ranch is all level, but with sufficient slope for irrigation. It is fenced and cross-fenced, and divided into 8 fields, each supplied with water in concrete troughs.

The improvements consist of a good hard-finished house of 7 rooms, well built and substantial with modern plumbing and other conveniences. Large horse barn, good dairy barn, sheep, pig and poultry houses, cottage for help, yards, corrals, etc. All in perfect condition.

The water supply on the place is excellent; besides a flowing artesian well, which supplied all buildings and fields without pumping, the ranch borders on a stream of permanent running water, from which the whole place is irrigated. The price of this valuable property is only \$27,500. Terms of payment can be arranged. Tools and implements included.

This is one of the best and cheapest ranches in the State. Rigid investigation invited.

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MOUNTAIN VIEW,

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The best blood of the best breed on earth. 25 choice young boars, six months old. Sell your sub-seller scrub and buy a money-maker for \$25.00.

DR. J. A. CRAWSHAW,
Hanford, Cal.

Extensive Bottle Feeding of Lambs.

It doesn't often happen that range sheep growers are willing to give lambs away at lambing time when they have already contracted with buyers to sell them at \$7 a head when ready for the market in July, but owing to the heavy percentage of twin lambs in most parts of the Sacramento Valley this year, the J. S. Gibson Co., large breeders of purebred Holsteins at Williams, Colusa county, were able to get 450 new-born lambs for the asking. Naturally these were the culls of the band, being mostly the poorer twin lambs from old and poor ewes that could not care for them properly.

Ordinarily such a gift would be a liability instead of an asset; but with plenty of good cow's milk to feed them, and ample space in old brooder and chicken houses to house them, they have been carried along with but small losses.

The way the lambs have been fed is striking; and to anyone who has tried to raise lambs on a bottle, the work of feeding 450 may seem almost impossible.

This has been greatly simplified on the Gibson ranch by the construction of a special lamb feeding device that can be moved. A V-shaped trough was made, with holes bored through one side about six inches apart. This was set on a substantial frame, about two and a half feet from the ground. A small stall for each opening was made with half-inch boards that extend forward from the trough to the ground in an inclined position.

This trough accommodates 16 half-quart beer bottles, which, when filled, are laid on their sides in the trough, with neck protruding through the hole. At feeding time, which is three times a day, a workman with cart, bottles, nipples, bucket, and milk tank makes the rounds of the various houses. The bucket is equipped with a faucet near the bottom for filling bottles which is accomplished in short order. As soon as the nipples have been fastened on and the bottles placed in the trough a pen of lambs are let out of their enclosure; quickly consuming their milk and then quietly going

back to their pen.

Whole cow's milk is fed in this manner till they are old enough to drink out of a trough, by which time they also eat sparingly of alfalfa or other roughage. Some trouble has been experienced with bloat; but except for that no difficulty has been encountered; and a neat profit is expected from the experiment.

HEIFERS LOSE FIRST CALVES.

To the Editor: My two-year heifers lose their calves six or eight weeks before time. They are fat and running with milk cows. Have fresh water every day; fed Indian corn and sorghum silage all winter with chopped alfalfa and foxtail hay. They get some green grass now but no silage. Have had seven or eight similar cases in the past three years and all carry their next calves the full time. One of the last heifers to lose her calf about six weeks ago is still discharging cream-colored matter and has never again come in heat.—R. A. L., Porterville.

Your trouble is contagious abortion. Employ a competent veterinarian to outline a course of treatment for your particular herd and to act in an advisory capacity as well as to apply the proper treatment to those animals needing same.

MILK TAINTED WITH BLOOD.

To the Editor: A cow freshened a month ago with a good flow of milk, but it is still tainted with blood, kind of pinkish under the cream.—F. O., Rio Vista.

Give this cow two drams potassium iodide in water twice a day for a period of one or two weeks.

H. P. Slocum and Son of Willows report the following sales from their recent importation of brood sows: Two to Geo. E. Spencer, bred to a grandson of Kings Col.; nine to Spalding Co. of Willows (six of which with one of the Slocum boars are to go to Honolulu); three to W. L. Smith, Willows; one granddaughter of Kings Col. to Mr. Layman, Maxwell; one to W. V. Bennett of Nord; one to Rev. C. R. Hedges and John McMartin, Glenn; one to W. H. Otterson, Glenn, and a Berkshire sow from Iowa to A. Pelko of Glenn.

SHORTHORN Sale and Show

by the

Northwest Shorthorn Association

86 head—52 bulls and 34 cows and heifers—of choice Shorthorns, from the best herds in the Pacific Northwest will be shown and sold.

TUESDAY

April 3rd, 1917

At the Portland Union
Stock Yards, Portland, Ore.

Opportunity for the bull buyer, and the man who wants to buy foundation females, that will prove a profitable investment.

See the show the day prior to sale. It affords opportunities for comparison of bulls and females that will be appreciated by buyers, and valuable lessons may be learned therefrom.

A sale under the same auspices will also be held at Spokane Union Stock Yards, Wash.,—consisting of 55 head of Shorthorns—on April 5, 1917. Plan to attend one or both sales.

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Raising Poultry for Profit

HOW TO PREVENT POULTRY PARASITES.

[Written for Pacific Rural Press by Susan Swaingood, Pomona.]

Everybody knows that prevention is better than cure; and this holds good in the prevention of poultry parasites as it does in any other line of work. The idea that fowls must and will have a certain number of lice, or that you can't prevent mites from getting in your buildings is erroneous.

The large body lice that infest hens live on the skin and at the roots of the feathers. They are not blood-sucking animals; but when a hen has many of them, they annoy her and keep her scratching. The smaller kind of a sort of yellow animal that darts like a streak of lightning when you open up the feathers, these exist on the skin and feathers too, as also does the little red louse. All these varieties, however, have a common meeting ground—they all go to the vent to drink; also they all must breathe through their own skin. Now there are two ways of getting these animals and one good one to prevent them. But before you can prevent their growth you must first be sure you have rid the hens of them, and that is just what few people do. They dust a hen once and expect that to last, while the fact is if you kill every one the hen has on her she will have a new batch hatched out in ten days. Good insect powder, tobacco dust, or anything that will clog the pores of the skin on these pests are sure to destroy them, but it must be repeated at intervals of about six days for a full month. After that keep a good dusting ground for the hens and mix in the dust bath a little flowers of sulphur, good commercial insect powder, or tobacco dust and keep all dry.

Now to get them at the vent: a great deal of noise has been made about mercurial ointment; I have recommended it and have used it, but no more. Those who want to use it do so at their own risk. Mercury paralyzes the organism in some place. In breeding stock I tried it and found that it ruined the fertility, according to the strength of the ointment, and that in all cases the eggs hatched better from hens that were never anointed. To clear hens of lice by this method it is necessary to repeat it so as to get the nits as they hatch and then it must be repeated to prevent them from getting on the hens again. But here again we have a choice of ointments; an ointment made from red precipitate of lead, lard, and tallow, and applied in the same manner as the mercurial ointment is quite as effective and not so injurious.

For Little Chicks.—If mother hens, turkey hens, etc., are rubbed under the wings with a few drops of oil of cedar about once a week it will prevent head lice on the chicks, turkey poult, etc.; but mind, it must not be done just once and then let go at that, but once a week; and it is both cheap and easy to apply.

The Mite Question.—"Now we've got you," says somebody. "If you

can tell us how to prevent mites your fortune is made." I'm not so sure about that; I have been telling poultrymen lots of good things for years and I am neither rich nor famous. Mites get in a chicken house from different causes; many of them unavoidable for the average person. But there is one thing, or rather two things, absolutely necessary to produce mites in quantities. These things are warmth and moisture.

If your poultry house can be kept dry, with a circulation of air under it, and you spray the interior, say once a month with distillate and crude carbolic acid at the rate of one quart of acid to a gallon of distillate, you surely can prevent mites. But the spraying must be thorough and no nest boxes under the dropping boards; that is about the worst kind of advice that can be given, namely to economize space by putting nest boxes under dropping boards.

If your houses are not too heavy to lift or not fastened in any way to the ground, block them up at least one foot for summer and give free circulation, then rid your house of mites by spraying, and, believe me, your mite question is solved. Mites seldom bother in winter. Why? Because the air is not warm enough. These pests must have warmth and moisture and they breed fast when these conditions are supplied, perhaps if we had two-story buildings for summer, where the sun would dry out all moisture from the droppings, and everything clear of the ground, we would not have to do anything else to prevent mites.

Ticks come under the same class as mites. They are blood suckers and they hide in the buildings under the shingles, shakes, boards, or cracks and it takes awful good spraying to reach them. I have known where a place did not have any chickens for three years and the man built a new house, using just one old board that he took from an old blacksmith shop, and the ticks that were not visible to his eye when he nailed that board on killed two fine chickens for him the first night, and he had quite a time to save any of them. Now both mites and ticks breed in the ground as well as in the houses and both must have the same conditions—warmth and moisture. The only preventive, then, is to raise the houses and let in plenty of air to dry, and keep dry the ground where the houses are.

LOOK OUT FOR COLDS.

[Written for Pacific Rural Press by Susan Swaingood, Pomona.]

There are many complaints of colds, probably owing to the weather changes, and also because hens that have been laying all winter are a little depleted. But we must draw the line on depriving the hens of nourishment or they cannot hold up. The egg basket does not usually suffer first; it's the hen's health that breaks down at her weakest point. If she has had forbeas that had a weakness for taking cold, then it will affect a hen that is a little run down in that

way. If the forbeas were addicted to rheumatism, that will affect the hen that is run down. If you find your flock taking colds without apparent reason, build them up with better feed. The tendency towards feeding too much bulky feed is showing in these complaints; we must remember that hens are not cattle; they will do very well on less if they must, but not on poorer quality.

Dr. Prince T. Woods says, "We used to believe that drafts were dangerous to chickens. We believe now that poultry troubles are not so liable to be due to drafts as from other causes. We have kept healthy birds in good order in drafty quarters all through severe winter weather without bad results. We like a house that is really tight on three sides and open in front, because it is more comfortable. But we have, for three seasons, wintered in an open-front house that is single-walled and that has good-sized cracks between the boards in sides and back."

Dr. Woods might have gone further and said that the reason his poultry stood drafts was because he fed them to keep up their stamina.

All forms of poultry colds, roup, canker, etc., are contagious; and if one takes a cold today and is not removed, it is but a short time till there are many more cases, owing to the number of fowls that are in close quarters. Continued exposure to chilling winds may start colds much quicker than cracks or drafts, but after poultry have been so exposed, if they are given shelter and made comfortable, no ill effects will be noticed, if they are in good condition.

An almost sure cause for large flocks of poultry taking cold is to

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EXTRA QUALITY White Leghorn chicks, 12c until March 1st, then 10c. Carefully line bred from MacFarlane, Young, Martin, and Cyphers strains of foundation stock. Eggs, \$1.50 per 15, \$2.50 per 30, \$5.00 per 100, \$50.00 per 1000. Acres of free range connected with our breeding pens, 20,000 feet under roof. Only Jubilee incubators used; disinfected every hatch. Don't save 2c per chick in buying and lose a dollar per pullet in raising; get the Best and Succeed. Newton Poultry Farm, Dept. 1, Los Gatos, Cal. Catalogue free.

THE J. K. BIGELOW POULTRY RANCH and Hatchery—300 acres devoted to superb vigorous Hoganized White Leghorns. Bigelow chicks are incomparably superior to the product of ordinary commercial hatcheries. Prices same as former seasons—10 cents each till April 1, 9 cents during April and May, and 8 cents thereafter. Shipped on approval; examination before paying. The Bigelow Poultry Ranch, Sonoma, Cal.

HIGHEST CLASS—Winners at State Fair, Oakland, Modesto, Reno. White Rocks and White Leghorns. Incubator chicks. Rocks, \$25.00 per 100; Leghorns, \$20.00 per 100; Hatching Eggs, \$2.00, \$5.00, and \$10.00 per 15, according to quality. Rock Eggs, \$10.00 per 100; Leghorn Eggs, \$6.00 per 100, from range flocks. The best of stock and a fair deal. Mahajo Farm, P. O. Box 597, Sacramento, Cal.

BARRED PLYMOUTH ROCKS — COCKERELS—Cockerels—Cockerels—Yes, we have them; also Hens and Pullets—all bred from our Champion Winners at California's leading shows. Also hatching eggs. If it's Barred Rocks you want, get in touch with me right away. Have bred them exclusively for fifteen years. Send for Catalog. Chas. H. Voden, Box 398, Los Gatos, Cal.

"FINEST HATCHERY IN THE WORLD"—Baby Chicks, White Leghorns and Rhode Island Reds, settings, 100's, 1000's, hatched right in our \$60,000.00 brick and concrete hatchery from our quality heavy layers. Reasonable prices. Stock, Hatching Eggs, Peabody Poultry Farm and Hatchery, Sunnyvale, California.

BABY CHICKS—From large, healthy, vigorous, heavy laying thoroughbred Single-Comb White Leghorns, \$10 per 100; \$2 per 100 when order is booked, and balance 5 days before delivery. I pay the express to your nearest express office. H. A. Schlotthauer, Exeter, Cal.

WHITE LEGHORN AND BROWN LEGHORN day-old chicks from healthy, vigorous breeders. Per 100, March \$10.00; April and May, \$9.00. Reduction in larger lots. "Chicks well hatched are half raised." San Jose Hatchery, 373 Meridian Road, San Jose, Cal.

ROOFDEN RANCH CHICKS are good chicks, well hatched from first-class utility breeding stock—money-making egg producers. The prices are right—7c to 14c, depending on breed, month, quantity (dozen to thousands), White, Buff, Brown Leghorns; Black Minorcas, Rhode Island Reds, Barred Rocks for dollars and sense. Send card for circular. Roofden Poultry Ranch and Hatchery, Campbell, Cal.

BABY CHICKS—From white Leghorns that are the result of severely hoganizing for the last six years. Our Barred Rocks are thoroughly hoganized; none can be better. April May and June hatchings. Aterbury Poultry Farm, Route No. 1, Box 183, Turlock, Cal.

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BABY CHICKS—HATCHINGS EGGS—White, Buff, Brown Leghorns, R. I. Reds, Barred Rocks. Sturdy chicks from well-mated fowls. Prompt, efficient service. Write for circular. Campbell Poultry Ranch, Campbell, Cal.

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HATCHING EGGS—90 per cent fertility. From Hoganized S. C. White Leghorns only. Re-mated in February. Prices reduced for March and April. Write at once. Pine Tree Poultry Farm, Los Gatos.

HOGANIZED AND TESTED—220-egg type White Orpingtons and Buttercups. Hatching eggs, chicks and cockerels for sale. Reasonable prices. For particulars, write M. Woodhams, San Mateo, Cal.

SELECTED S. C. White Leghorn and Barred Rock eggs for hatching from hens typed to lay 200 to 250 eggs per year each. Baby chicks in season. Write for prices. Jay Maxwell, Madera, Cal.

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RICKS JUBILEE HATCHERY, Petaluma, Cal.—White Leghorn and Black Minorcas chicks and hatching eggs. Circular "How to Raise and Feed Chicks" Free.

GIVE the Black Minorcas a trial. Guaranteed first class. Eggs \$6 per hundred, \$1.25 per setting. Chicks, \$12 per hundred. Ezra Mosher, Union Station, Napa.

BABY CHICKS—From select free-range White Leghorn stock. Place orders early. Prices on application. Western Hatchery, Petaluma, Cal. W. S. Waldorf, Prop.

EARL E. SANDERS, Modesto, Cal., breeder of M. B. Turkeys, S. C. White Minorcas, S. C. Black Minorcas and S. C. Barred Plymouth Rocks. Nothing but the best.

S. C. RHODE ISLAND REDS—Pullets and Cockerels. One Black Orpington Cock Eggs from R. I. Reds and Silver Campines. Mrs. R. S. Spaulding, Woodland, Cal.

MODEL POULTRY FARM—White Leghorn specialists. Our thirteenth year. Baby Chicks and Hatching Eggs for sale. W. C. Smith, Prop., Corning, Cal.

"EASTMAN'S BRED-TO-LAY" Barred Plymouth Rocks—Chicks and Eggs. We Hoganize and trapnest. Fairmead Poultry Farm, Fairmead, Cal.

ANCONAS—Prize winners everywhere exhibited. 35 first prizes in last two years. Catalogue free. T. E. Silva, 3620 Grove St., Oakland, Cal.

INCUBATORS—For Essex Model Incubators at factory prices, write Geo. H. Croley Co., Inc., Poultry Supplies, 631-637 Brannan St., San Francisco.

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RHODE ISLAND RED and White Leghorn Eggs and Chicks. Splendid layers, large eggs. Send for circular. Rosedale Ranch, Hayward, Cal.

BLACK MINORCAS—Largest egg; whitest flesh. Eggs, \$1.00 per 15; \$5.50 per 100. Edward A. Hall, E. F. D. 1, Watsonville, Cal.

HATCHED CHICKS from Barred Rocks, R. I. Reds, White Leghorns. Good stock. Send for circular. G. L. Hawley, Madera, Cal.

CHICKENS, DUCKS, GEESE, GUINEAS, Pea Fowl, Pigeons. Wm. A. French, 545 W. Park St., Stockton, Cal.

THOROUGHBRED WHITE PLYMOUTH ROCK—Eggs, \$1.25 per setting, prepaid. H. G. Nickel, Dinuba, Cal.

LASHER'S HATCHERY, PETALUMA—Write for booklet, "The Day-Old Chick Business" and price list.

WHITE PLYMOUTH ROCKS—Hatching eggs from splendid layers. Mrs. J. B. Tupper, Route A, Ceres, Cal.

PEARL GUINEA FOWL—\$2.00 per pair. Mrs. Kate Lambert Newark, Cal.

RHODE ISLAND REDS—Eggs, \$1.00 for 15. P. M. Cox, Sonoma, Cal.

TURKEYS, DUCKS, AND GEESE.

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PEKIN DUCK EGGS—\$1.00 per setting. L. D. Collins, Denair, Cal.

leave them in a chilly wind for a few hours, then feed them a hot mash. After they have filled up on the mash they will crowd in corners and next day you will have a nice job on your hands. The best thing, to feed on cold days is good hard grain in clean litter and let the hens get up circulation by scratching for every kernel.

The best recipe for these colds is prevention. If you can't afford to feed all you have well, sell a part of them to do justice to the rest. Hens that are well fed will stand all sorts of weather changes and come out in fine condition, while poorly fed hens will take cold with every change and with the least draft or exposure. Many people bring on "colds" by throwing lime around promiscuously. The lime irritates the lining of both nostrils and throat, causing them to run and the hens are seized with sneezing and coughing. Dry lime has no place in the poultry house.

The cheapest and most efficient germ destroyer for poultry houses is crude oil, or some of its products. Spray and spray often if you want to kill and keep germs out. Pour a little coal oil on top of all drinking fountains when any of the flock have a cold. This cleans out and heals the nostrils. A little of it will go down the throat with each drink and act as a mild physic. This and good feeding will soon rout the colds.

COST OF PRODUCTION A FACTOR IN DISTRIBUTION.

To the Editor: My acquaintance with the Pacific Rural Press runs back over nearly thirty years, and I desire to comment on your editorial of February 24 touching the State Marketing Law, the State Market Director and his critics. As a producer who happens to be now an executive officer of a producers' marketing association, I want to thank you. Among our fellow-citizens, male and female, who champion loudly the cause of the oppressed consumer there seems to be prevalent a surprising indifference to the cost of production, united with a profound ignorance of the cost of distribution and its incidence.

The latter point is perhaps most clearly illustrated by the continual repetition of that much-overworked phrase—"Eliminate the middleman." So far as the writer can make out this means, in most cases at least, the wiping out of the jobber or wholesaler, who takes the product in bulk from the grower and delivers in suitable quantities to the retailer. Now the legitimate cost of this comparatively crude service (including the receiving and subdividing the product, delivering the same and carrying the account) is really a very small part of the cost of distribution. Under normal conditions the jobber is satisfied with a profit of 3 to 4 per cent on his turnover, and he relies on volume of business for a sufficient return on his investment.

Actually, by far the greater part of the cost of distribution is the expense of retailing, and this is a matter that lies absolutely within the control of the consumer. The expense of retailing has risen rapidly in recent years. Lines that formerly figured 20 per cent as the cost of

doing business now find it runs as high as 30 per cent, and it is constantly increasing. Why is this? Because the consumer demands and receives an increasingly elaborate and expensive service, which must be paid for.

It may be that this is inevitable. Possibly it is an accompaniment of modern civilization to which we must perforce be reconciled. But that is a question for the consumer to consider very seriously when he complains of the extent of the gap between what he pays and what the producer gets. And ladies who point an accusing finger at the "extortionate middleman" would do well to pause and consider how much of the admittedly excessive cost of distribution is due solely and directly to their own demands for an elaborate and costly retail service.

I spoke above of the legitimate cost of jobbing. It is unfortunately true that the jobber of food products has often by more or less questionable means secured an illegitimate profit which has come out of the pockets of either the producer or the consumer or both. It is equally true, human nature being what it is, that, speaking generally, he will continue these practices wherever opportunity is afforded. His reasons for doing so need not be gone into here—they are commonplace to every student of marketing conditions. Suffice it, that being usually a very decent chap and a good neighbor, like the rest of us, he justifies himself broadly on the ground of unsatisfactory market conditions and the consequent necessity of protecting himself and his business interests.

Now it is precisely these bad market conditions and the bad practices which arise from them that the California State Market Law, as interpreted by our State Market Director, aims at correcting. The approved method is organization of the producers. This results in standardizing of the product, does away with speculation and with waste in distribution and consequently tends to stabilize the market. The net result aimed at is better returns to the producer and better values to the consumer. The writer believes that no candid observer will deny that this method is producing just such results wherever it has had time for a fair trial.

J. H. Barber.

Asst. Gen. Mgr. Poultry Producers of Central Cal.

POULTRY QUESTIONS.

[Answered by Susan Swaysgood.]

Comb Black.—I have a cockerel. The points of his comb turn purple, almost black at times, then for a few days it will be all right.—Mrs. J. B.

The trouble is most likely due to inactive liver, or from worms. Either of these will affect the comb in that way. If you have been feeding a great deal of mash, beef-scrap, etc., then it is from the liver, and the remedy is to stop the feed that causes the trouble. If it comes from the worms, give 20 drops of oil of turpentine through a medicine dropper, early in the morning, confining the bird; after one hour give a good physic, say half an ounce of castor oil, and turn him loose.

Too Thin.—I am feeding my poul-

try moist mash twice a day and yet they are going thin.—K. C.

A feed of moist mash lasts a chicken just about as long as a plate of soup lasts you, and if you are feeding the mash morning and night, as I infer from your letter, the chickens have no food in the craw for a number of hours at a time, hence they get thin. Feed them good hard grain of some kind once a day at least, and that at night, then they will have a little to sleep on.

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WANTED.—Young men and women to attend the Western Normal Courses—Normal and Academic. The Normal Course gives an adequate preparation for teaching, at a great saving in time and money. Academic course gives practical finish to education. Write for Bulletin "A." Western Normal, 524 E. Market St., Stockton, Cal.

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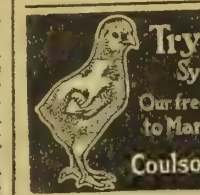
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1376 Market St., San Francisco

Mrs. Best's Letter.

MODISH FABRICS.

Dear Friends: Thinking you might be interested in the new spring fabrics this week I will tell you of them.

There is the washable satin-finished silk La Jerz, probably the most fashionable stuff for sports things. It comes in white and colors and is wide but expensive.

Tussah silk is sand-colored like pongee, but heavier and firmer. It is shown with pure colored rings and stripes as well as plain.

There are various so-called sports silks—pongee plain and figured, the figures being circles of combined colors looking like a little bouquet of flowers. Stripes of equal widths of bright color and plain pongee, and stripes in a cluster of narrow lines are shown at reasonable prices. Then there is a silk heavier than pongee and more rough in white or sand or bright colors, and even with the big circles of color like the Khaiki Kool material. This sells for \$2.75 a yard.

The Khaiki Kool is going to be even more popular than last summer. It is a heavy rough silk, wide but expensive. It comes in oyster white, grey, bright blue, yellow, pink and purple. Bags are made of this stuff—simple, gathered bags and pocket-books of a combination of colors. The material also is used for new collars—the bright spots or stripes cut out and appliqued or used as they come in the goods. Skirts and sports suits are fashionable made of this material and the small flat parasols even, and hats too, are fashioned from it. There are several other materials very similar to Khaiki Kool called Sea Breeze, Zephyr, etc.

In the wools there is the greatest assortment of weaves and colors. In serge there are plaids of grey, green and purple; blue, green and white; blue, tan and white; red, grey and white; green, yellow and blue. In stripes half is white, half color. The color is composed of combinations of grey, blue and yellow; blue and yellow; blue and green; grey and green; brown and yellow; purple and yellow; green and yellow. Skirts are made of such cloth by plaiting it white out, color hidden except where the plaits open. Heavier cloth also is shown in these new weaves and some skirts are really as heavy as winter clothes when made of this stuff.

Chiffon cloth is displayed with gay stripes or rings of color for blouses, or use on afternoon dresses.

There is a cotton tussah being shown in one shop that is a mercerized material. Shown in sport patterns it is advertised for sport suits. It has the advantage of being thin and quite inexpensive.

Cotton crepes are very fine this spring. The material is wide with a double border on one edge of a darker or contrasting shade for trimming purposes. In these, too, are stripes or plain colors. There are many new shades and interesting possibilities present themselves with this material.

The voiles as usual in the spring-time are shown, but this year they seem extra nice. There are stripes, of course, in dainty colors, and

ribbed and corded effects. There are also checks, and plaids. The flowered material and the elaborate border is shown, but is not as good style as the simpler effects. These voiles are made up in combination to advantage; that is, the upper part of the skirt white, the lower a plaid or stripe in color and the waist likewise. Soft organdie colors may be purchased all made up which help to finish a dress made at home in the correct style.

Scotch gingham too are displayed in lovely combinations of soft colors in plaids.

There are new cotton materials called sports suitings in a sort of a twill in white with brilliant colored figures like the silk sports stuff. The ever popular linen and rep, too, is shown.

Corduroy is still a favorite for separate skirts. It comes in white, sand, and colors and is washable—i. e., the good quality if washed with care stands the water and looks like new after every laundering.

This I hope will give you an idea of the spring materials.

Rosabella Best.

DRIED PEACH-RHUBARB CONSERVE.

One-half pound dried peaches, 2 lbs. rhubarb, 2 oranges, 7 cups sugar, 1 lemon, $\frac{1}{4}$ lb. blanched almond meats. Soak dried peaches all day, drain and put through food chopper. Peel rhubarb and cut in $\frac{1}{2}$ -inch pieces. Cut orange pulp in small pieces, grate rind of 1 and add juice of the lemon. Put layer of rhubarb in large bowl, then layer of dried peaches, then sugar, orange pulp and lemon. Repeat until you have used all your material. Let stand all night; next morning, boil about $\frac{3}{4}$ of an hour or until thick, adding the cropped almond meats 10 minutes before taking from stove. This should cook quickly so as to retain the yellow color. Fine on cold meats or fowl.

HOUSEHOLD HELPS.

A stick with a notch in the end is a wonderful help at house-cleaning time, to lift pictures from the walls. The wire slips into the notch and does away with the necessity of the step ladder.

To clean a very rusty stove wash well with vinegar, giving a second application if necessary. After thoroughly dry, polish with a dry polish.

A teaspoonful of lemon juice added to the water in which rice is to be cooked will whiten the kernels and improve the flavor of the rice.

Soak the cut-up rhubarb in soda water—1 teaspoonful soda to 1 quart of hot water—for a few moments before cooking and much less

sugar will be required to sweeten it.

Try baking a ham by covering it well with a paste made of flour and water rolled out in a thin sheet. Cook in a moderate oven six hours.

Brass andirons which need brightening up should be rubbed with a mixture of oil and rottenstone. Apply with a chamois cloth.

Meat and fowls may be made more tender if when cooking a teaspoonful of vinegar be added to the water.

White suede slippers may be cleaned with equal parts of powdered alum and fuller's earth. Apply to the slippers with a dry brush and rub until clean. For glace kid slippers use gasoline and apply with a flannel cloth.

Tortoise shell or ebony toilet articles with silver decorations require to be treated very carefully when the silver is cleaned, as ammonia and silver powder ruin the finish on shell and ebony. Small, blunt sticks, covered with chamois, should be used and this should be followed by a rubbing with dry chamois.

OILED PAPER.

There are many uses to which oiled paper may be put to good advantage. It has long been used for wrapping butter which is to be put on the market. If a small piece of oiled paper is put over the knife with which butter is to be cut a smooth cut will be made and the butter will not stick to either the knife or the paper. The appearance of articles when they are brought to market often does much toward selling them and there is nothing cleaner or neater than oiled paper for covering lard, cakes, candies and numerous other things in the edible line. In the household it also comes in handy for covering foods which are to be set away. When putting up lunches, if oiled paper is put between the different articles it will keep them from mussing or mixing together. One of the worst parts of carrying lunches is having the pie run all over the bread or the vinegar, from the pickles soaked into the cookies, but by wrapping up the pickles, putting in layers of paper and crumpling up small pieces of paper to fill the vacant spaces, the lunch is kept stationary and all articles are kept separate. When oiled paper is kept handy it becomes very convenient as well as useful.—E. R. F.

TO BRIGHTEN LINOLEUM.

Wash with skim milk and water. Once a month rub over with linseed oil, or if a linoleum polish is desired, prepare the following: Palm oil, 2 ounces; liquid paraffine, 18 ounces; kerosene, five ounces. Apply with a cloth when the floor is clean.

THE HOME CIRCLE

Good Health.

[By H. E. Pastor, M. D.]

Too Much Soap.

Soap is so closely associated with our efforts to remove dirt from our persons, from our clothing, and from our domestic surroundings that the word "soap" has come to be regarded as synonymous with cleanliness. And yet the use of soap may easily be overdone, and is, to a certain extent by people who consider its cleansing effects only, without taking into account the harsh action of the alkaline content of soap when applied to the human skin. A writer in a late number of the Literary Digest, quoting from the Liverpool Medical and Chirurgical Journal relative to the abuse of soap, says: "The secretion of the skin is sluggish, and the excessive removal of the natural grease leaves the skin rough and branny. * * * Pruritus (itching) is not infrequently brought about by a too zealous use of soap. The delicate skin of new-born babes is sometimes irritated by the zeal of the nurse in rubbing not wisely, but too well, with soap and water. * * * It is notorious that frictional eczemas are invariably aggravated by soap and water."

We know several ladies with delicate and enviable complexions who are almost as much afraid of soap touching their faces as they would be of oil of vitriol. For the removal of the inevitable deposit of dirt they prefer the use of a good cold cream applied with the fingertips and wiped off with a soft cloth. However, most of us can't be as dainty and dilatory as My Lady, and we have to employ the rough-and-ready method of scrubbing our mugs with plain soap and water. It is just as well, nevertheless, to be not too lavish with soaps on our face and hands, especially in the arid atmosphere of California, if we have any regard for our personal appearance, and to buy only the best quality for this purpose. There's such a thing as being conservative about cleanliness even.

The Poor We Have Always with Us, Likewise the Crotchety.

The anti-vaccination hallucination has seized upon some member or members of our State Legislature and several bills designed to discredit the well-established efficacy of vaccination have been introduced. One of them would force our public schools to admit the unvaccinated children of ignorant, careless, or fanatical parents, and thus expose other innocent children to the possible (and probable) contagion of smallpox; and another would open the doors of the University of California to the same class of undesirables. In this connection it is edifying to read this paragraph in the report of the State Board of Health for January (p. 154):

"Smallpox increased considerably during January. There were forty cases reported during the month, as against ten cases reported during December. Fourteen of these cases occurred in San Francisco, seven in Solano County, six in Alameda County, and the rest were scattered throughout seven counties of the State. Twenty-seven of the total



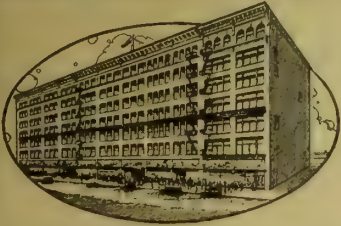
The night has a thousand eyes,
And the day but one;
Yet the light of a whole world dies
With the dying sun.

The mind has a thousand eyes,
And the heart but one;
Yet the light of a whole life dies
When love is done.

—Francis Wm. Bourdillon.

number had never been successfully vaccinated, five had been vaccinated more than seven years preceding attack, and vaccination histories were unobtainable for the remaining eight cases."

In other words, among all the cases of smallpox reported for the month, there was not one where the patient had been vaccinated within seven years, so far as could be ascertained from information available.



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GEO. N. TYLER, Brookdale Nursery, Los Ontos.

Floral Department.

[By Geo. N. Tyler.]

Keep Rose Bushes Clean.

Owing to the extremely cold and frosty weather, and rain, there is very little that can be done in the garden. Roses are now making breaks and are very subject to mildew, which is caused by sudden changes of temperature, but is easily controlled if taken in time. One tablespoonful of permanganate of potash to two gallons of water is said to be a sure cure and preventive. Potassium sulphide is also good for both mildew and aphids. Dry sulphur dusted on the plants while they are wet with dew in the early morning is another remedy; but the one I like the best is the lime-sulphur spray. Put twenty-five pounds of lime in a fifty-gallon barrel, and while it is slacking add ten pounds of sulphur flour. Keep stirring and adding more water till it is all cooked up, then fill the barrel up with water and stir thoroughly. When the lime-water is settled there is a golden liquid. Use one part of this liquid to one part water and spray foliage and surface of soil with this mixture. It will destroy mildew, and the future growth will be clean. This liquid will keep indefinitely, and when emptied can be filled several times, but do not dilute with water after second filling; use it clear. Aphids will soon be at work. These can be washed off with a strong spray of water or you can use tobacco extract, or nicotine. Two teaspoonfuls to a gallon of water, with a small piece of soap dissolved in the water to make it stick on the leaves. Coal oil emulsion is also good, or make a very soapy water, which will also get them. Whale oil soap is also good. There is no excuse for aphids, either in greenhouse or garden.

Hothouse Hints.

Small greenhouses should have a light shading now, as the young new growth of tender plants burns very easily. Make a mixture of white lead and gasoline, or distillate, and spray or paint the glass from the outside. This is easily removed in the fall, while whitewash has to be scraped off. Whiting in water is also good, but this washes off very easily and will have to be renewed after a rain. In small greenhouse it is advisable to have some material to stand the pots on so they will not dry out so quickly. Some use sand or gravel, or pulverized oyster shells, or cinders, and then again some use the common garden soil. These are all good if you can obtain nothing better, but all of them will sour and form a green mould on top, which gives off a stagnant moisture which is injurious to the plants. What I have found to be the best material is charcoal dust, and one sack is enough for a house ten by fourteen feet. I will tell you why it is better than any other material. Charcoal is a purifier, and it is an utter impossibility for water or air to sour or become filled with stagnant moisture where it is used, and it absorbs more moisture than any other material and gives it off as the plants require it. Keep the paths and absorbent surfaces well sprayed while the plants are making growth, with very little ventilation—

more air can be given later. Take a dishpan half-full of water, to which has been added a tablespoonful of ammonia; heat two bricks red hot, close up the house and put the bricks in the pan of water, and you will give your plants a steam bath that will greatly benefit them.

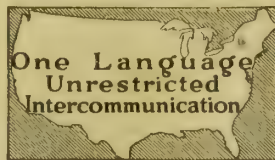
TO MAKE DUSTERS.

Add 1 ounce paraffine oil and 1 ounce of kerosene to 2 pints of benzine and add a few drops of oil of eucalyptus. Dip clean cloths in this solution and wring out. Hang out in the air to dry until the benzine evaporates.

Wheat cereal, oatmeal, farina, mush, etc., are delicious if dates or figs are stirred into them before serving. Cereals will be relished if dried fruit is added to make them more attractive and palatable.—Extension Service, State College of Washington.

It is claimed that 15,000 maternal deaths occur annually in the United States through preventable causes.

The greatest "safety first" device is watchful eyes.



Europe's many tongues and consequent misunderstandings

The Fruits of Understanding

Throughout the vast area of this country prevails a common tongue. The whole of Europe hardly exceeds our territory, yet Europe has more than a score of nationalities and many different languages.

In the United States the telephone, as exemplified by Bell System, renders a matchless service in its mastery of distance and in encouraging the use of a universal language. This accomplishment is in spite of the great influx of population from every country in the world.

In Europe the independent countries, separated by barriers of language, and lacking efficient

telephone service, suffer from inadequate facilities for intercommunication.

We now talk from the Atlantic Coast to the Pacific, and eliminate more than three thousand miles. In Europe, contending with a babel of voices and unrelated telephone systems, a bare quarter of that distance has been bridged with difficulty.

The ideal of the Bell System has been day by day to extend its service in the interest of all telephone users. Its efforts have resulted in providing the facilities to unite cities and rural districts in true American democracy.



AMERICAN TELEPHONE AND TELEGRAPH COMPANY
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One Policy

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Universal Service

SAN FRANCISCO.

San Francisco, March 21, 1917.
WHEAT.

Wheat prices were advanced during the last week, despite the slower trading which resulted during the early part on account of the threatened railway strike. The cleaning up of Sonora offerings was the main factor in the higher prices.

Sonora wheat None offered
Northern club None offered
Calif. Club, ctl. 2.80@2.85
Northern Bluestem 3.10@3.15
Northern Red 3.10@3.20

BARLEY.

Buying for interior account of red feed barley, induced by the slow growth of green feed and the necessity of feeding the cattle in the northern counties, formed the bulk of the past week's business in barley. However, offerings proved heavy enough to leave quotations unchanged.

Seed, ctl. 2.50@2.60
Shipping, ctl. 2.35@2.40
Brewing Nominal
Choice feed, ctl. 2.25@2.30

OATS.

The market on oats has held very steady during the past week, with a continued scarcity of really first grade stock. Asked prices on white oats were advanced 5 cents per cental with the other varieties holding very steady.

Red feed 1.90@2.00
White 2.10@2.15
Red seed (Texas) 3.00@3.10

CORN.

Sales to owners of hogs have formed the principal item in the past week's trade in this line, although the high figures asked for the other grains has led to a certain amount of buying for feeding to other animals. Milo maize is also higher.

[First-hand prices on strictly first-class grain, San Francisco.]

Eastern Yellow, ctl., bulk 2.35@2.40
California, sacked 2.30@2.40
Milo Maize 2.20@2.35
Egyptian 2.35@2.40

BEANS.

Trading in beans has been rather slow during the past week, the market apparently not having recovered from the quietness which followed the announcement of the possible strike last week. Local dealers are at a loss to explain this state of affairs, as they had expected a good Eastern call to follow the news that there would be no strike. All this has tended to leave prices at about the same level as was reported last week, the only two changes being a small advance on southern limas and a decline on southern small whites.

[Recleaned, f. o. b. San Francisco.]

Bayos, per ctl. 8.25@8.50
Blackeyes 7.00@7.20
Cranberry beans 9.75@10.00
Horse beans 5.50@6.00
Small Whites (south) 11.75@12.00
Large Whites 11.75@12.00
Pinks 8.75@9.00
Limas (south, recleaned) 12.25@12.50
Red Kidney 11.75@12.00
Mexican Reds 7.75@8.00
Tepary beans 8.50@8.75
Garbanzos 4.25@4.50

Heavier receipts at San Francisco failed to bring any halt in the upward march of hay prices, as the outside call more than kept pace with the increased shipments. Receipts here were 1489 tons, as compared with 1045 tons for the preceding week. While consumers are making every effort to economize in their feed bills conditions are such that many are forced to buy here regularly. This week saw Modoc and Shasta county cattle owners buying freely here. While the rainfall in these sections has been fair, the green feed supply is far from ready and these heavy purchases were necessary to save the lives of their cattle. Nearly all of the available hay now held in the rural sections is in warehouses that are not reached by water transportation and it was this condition that led to the fear that a strike would work considerable damage in this State. Alfalfa hay is in very good call and almost forgotten stacks are being dug up to fill current needs. The export demand has been about normal.

[Price per ton, carlots, San Francisco.]

Wheat, No. 1 23.50@24.50
No. 2 21.50@22.50
Tame oats 21.00@22.50
Wild oats 18.50@22.00
Barley 21.50@23.50
Alfalfa 18.50@22.00
Stock hay 15.00@16.00
Straw, per bale 90@1.15

FEEDSTUFFS.

The abnormal prices being asked for hay in this state have led to an increased call for feedstuffs, and a few of these lines have advanced here during the past week.

[Per ton, San Francisco.]

Beet Pulp, per ton 32.00
Alfalfa meal, per ton 23.00@24.50
Bran, per ton 31.00@32.00
Oil Cake 42.50@45.00
Cocoanut cake or meal 32.00@33.00
Cracked corn 52.00@53.00
Middlings 45.00@50.00
Rolled Barley 45.00@47.00
Tankaage 47.00@48.00
Rolled oats 44.00@45.00
Rice middlings 31.00@33.00

POTATOES, ONIONS, ETC.

The offerings of asparagus are increasing daily until about five hundred boxes are now arriving each morning. This has naturally brought easier prices on this offering. A better northern call has cut the supply of delta celery in this market and good stock is now commanding as high as

THE MARKET REPORTS

Figures Given Are Independent and Reliable.
Prices Quoted as Paid to Producers.

\$3.25 per crate. Lettuce barely held steady while the frosty mornings in Southern California have held back the supply of early tomatoes. A somewhat better demand has brought a slight recovery on potato prices, although the market can hardly be called steady at these levels. There has been a very marked drop in the consumption in this section. Onions are a little higher than at the close of last week.

Asparagus, per lb. 9 @15 c
Peas, per lb. 5 @11 c
Hubbard squash, per lb. 2 1/2 @3 1/2 c
Lettuce, crate 3.90@1.25
Celery, Delta, crate 2.90@3.25
do, Southern, crate 2.50@4.00
Tomatoes, crate Not enough to quote
Rhubarb, box 1.00@2.25
do, new, per lb. 8 @10 c
Potatoes, ctl., Delta 3.00@3.50
Salinas Cleaned up
Oregon 3.25@3.50
Sweets, per lb. 5 c
Onions 6.50@8.00
Garlic, lb. 3 @5 c

POULTRY.

Nearly all of the poultry list registered advances during the past week, the retail trade having turned to fowl of late on account of the high prices being charged for meat. Roosters, both young and old, were the only items that failed to gain and these were in such light offerings as to be a negligible market factor. Broilers were in especially good call and sales as high as 40 cents per pound were reported.

Turkeys, live, lb. 22@24 c
do, dressed, large, lb. Nominal
Broilers, 18 lbs to doz and less 37@40 c
do, over 18 lbs. to doz 30@36 c
Fryers 32@35 c

present prices are too high to warrant storing goods, they do not see where any declines are to be expected and are going ahead. More than six thousand cases of eggs were put in storage in local ice-houses last week.

Thurs. Fri. Sat. Mon. Tu. Wed.
Extras 26 1/2 26 1/2 26 1/2 26 1/2 27
Extra 1sts. 25 1/2 25 1/2 25 1/2 25 1/2 26
Ex. pul. 25 25 25 25 25 1/2
Ex 1st pul. 24 24 24 1/2 24 1/2 24 1/2

CHEESE.

There have been no changes in cheese prices for the past week, although street sales have been quite heavy. The East is still buying such stock as it can get here.

Y. A.'s 23c
Fancy Calif. Flats, per lb. 21 c
Monterey Cheese 16@20c

DECIDUOUS FRUITS.

The threatened strike brought brisker trading in the deciduous fruits last week, but the quality of present offerings is such that further advances are hardly to be expected.

Apples:
Bellflower, box. Not enough to quote
Newtown 1.20@1.50

CITRUS FRUITS.

No changes occurred in the prices of citrus fruits last week, and trading was slower as most of the retailers felt that a strike would mean that the shipment of oranges to the East would be prevented and lower prices must develop here.

Oranges:
Navels, fancy, per box 2.50@2.90
do, choice 1.85@2.25
Tangerines 1.50@2.00
Lemons:
Fancy, per box 3.25@3.50

INCREASED ACREAGE OF CANNERY TOMATOES.

Tomato growing for canneries will make good money from a very much larger acreage this year than ever before. It is reported that the larger canneries have already contracted practically up to full capacity at \$8 to \$10 per ton to the growers. New canneries are projected largely for tomatoes, and small canneries are making additions to take care of a larger amount in many parts of the State. Many are wanting tomatoes for the first time. Canners are offering \$9 and \$10 at Sebastopol and furnish seed. The Lindsay Olive Cannery is seeking tomato acreage in the Porterville district. Similar reaching out is encouraging increased acreage all over the State. Eastern and Middle Western growers are not contracting so heavily as usual; though packers are out for increased acreage at high prices. The growers want prices that will reimburse them for possible losses due to labor shortage. Delaware growers are asking \$15 to \$18 per ton.

Seed, at least in California, has become scarce and high-priced. Many tomato plants have been damaged by frost, limiting the possible acreage and reducing the available cannery supply.

Hens, extra, per lb., colored 24@25 c
Small leghorn 22@23 c
Smooth Young Roosters, per lb. (3 lbs. and over) 25@27 c
Old Roosters, per lb. 15@17 c
Geese, per lb. 18@20 c
Squabs, per lb. 40@43 c
Ducks 24 c
Old 21@22 c
Belgian Hares (live) 13@15 c

BUTTER.

Butter prices during the past week have shown a steadily upward tendency in the face of increased arrivals with a good shipping demand the cause. Buying for Seattle houses has been heavy, it being understood that the bulk of these goods are to go on to Alaska. San Diego has also been a purchaser here and two large orders for Hawaii were filled. Prospects for a steady market are bright, despite the fact that prices now are nearly seven cents per pound higher than for the same dates last year.

Thurs. Fri. Sat. Mon. Tu. Wed.
Extras 35 34 34 34 35 36
Prime 1sts. 34 1/2 33 33 1/2 34 34 1/2 35 1/2

EGGS.

With Alaskan orders being filled in this market, considerable buying for Los Angeles account going on at Petaluma and many of the local houses already storing eggs, the past week has been one of very decided activity. While most of the dealers feel that

choice 2.50@2.75
Lemonettes 1.50@2.00
Grapefruit, fancy 2.25@3.00

DRIED FRUITS.

The dried fruit men again marked time during the week, most of the trade being unwilling to take chances with contracts until they could see more clearly what international conditions should develop.

[Net to growers, bulk basis, f. o. b. shipping point.]

Apples, new crop 5 1/2 @ 6 c
Apricots, per lb. 15 @16 1/2 c
Figs, black, 1916 6 @ 6 1/2 c
do, 1917 5 1/2 @ 6 1/2 c
do, white, 1917 6 @ 6 1/2 c
Calimyrna, 1917 9 @10 c
Prunes, 4-size basis, 1917 5 @ 5 1/2 c
Prunes, 1916 5 1/2 @ 7 1/2 c
Pears 6 @ 7 1/2 c
Peaches, 1917 6 c

HOPS.

Sacramento 6 @9c
Sonoma 7 1/2 @9c
Mendocino 8 @9c

OILS.

Pearl Oil, per gal. 9c
do, cases two 5s 17c
Headlight, bulk 10c
do, cases two 5s 18c
Eocene, bulk 11c
do, cases two 5s 19c
Gasoline, bulk 20c
do, cases two 5s 23c

WHEAT SCARCE AND FLOUR RISING.

The wheat crop for the current year was reported to be 640,000,000 bushels as against a five-year average of 728,000,000 bushels. Our normal domestic needs of wheat for human food, for seeding purposes, and for a reserve to carry over into the next year require 640,000,000 bushels. Including the holdover, the total year's supply is 804,000,000 bushels. This would give us an available, exportable surplus of 164,000,000 bushels, according to Secretary of Agriculture D. F. Huston. The planting last fall was 5,260,000 acres more than was harvested last summer. The average acreage of spring wheat for five years is 18,800,000. Added to the winter wheat, this would make a total of 59,000,000 acres. The average crop for five years has been 15.5 bushels. This would give us 914,000,000 bushels if worse weather does not interfere. This will give us 274,000,000 bushels to export from the coming crop. And yet flour is rising by jumps.

LOS ANGELES.

Los Angeles, March 20, 1917.

BUTTER.

Receipts of week ending Mar. 20, 1917
360,995.
Receipts of week ending Mar. 20, 1916
337,520.

There was nothing new in this market the past week. The threatened railroad strike caused receivers to hold and confine themselves to supplying the consuming trade. The arrivals were somewhat better than the week before, but with a good home demand and the absence of stocks, last week's prices were maintained, extra remaining at 33c up to Monday and San Francisco at 34 1/2c. Chicago, as the week before, was a 40c market for extras while New York firmed up a little, extras there on Monday being 41 1/2@42c. With the railroad strike now off and increased production with the coming of warmer weather, a weaker market is looked for. Still values are ruling 5c higher than this time last year. Tuesday brought no change either east or west. On call there were no bids or offerings. Receipts were liberal but they failed to influence the market.

Extra creamery 33c
Prime first 32c
First 31c

Daily quotations:
1917—Wed. Thu. Fri. Sat. Mon. Tu.
Extra 33 33 33 33 33 33
1916— 27 27 27 27 27 28

EGGS.

Receipts (railroads) for week ending Mar. 20, 1917—3071 cases.
Receipts (railroads) for week ending Mar. 30, 1916—4604 cases.

There was less life to the market the past week, though a fairly good movement was had. The receipts were a little better than the week before, though not so large as the same week last year. Hence a firmer tone to the market. While the consuming trade took most of the receipts, still there was some buying for cold storage. Besides the receipts of 3071 fresh eggs there were in during the week 2000 cases of Petaluma eggs and this had a tendency to weaken the market towards the close of our review week. Still prices are much better than this time last year and a ready demand had for all arrivals. San Francisco was a 26 1/2c market throughout and Chicago unchanged from a week ago, while New York was a shade higher. Tuesday the market showed a little more strength. On call extra and pullets advanced 1/4c, while case count remained unchanged. Demand fairly good at the prices.

Daily quotations:
1917—Wed. Thu. Fri. Sat. Mon. Tu.
Extra 25 26 1/2 26 1/2 28 27 28
Case ct. 24 25 1/2 26 27 27 27
Pullets 23 24 24 25 25 25 1/2
1916 19 19 1/2 19 18 1/2 19

POULTRY.

The market holds up well. The receipts were somewhat better the past week, the high prices of feed and good prices being paid for all kinds of poultry tempting raisers to reduce their flocks. No Eastern poultry coming in and demand good at quotations for young stuff and roasters. Hens, turkeys and ducks also moving without trouble.

We quote from growers:
Broilers, 1 1/2 to 2 lbs. 32@33c
Fryers, 2 1/2 to 3 lbs. 28c
Hens over 4 lbs. 22@23c
Hens, under 4 lbs. 21@22c
Ducks 32@33c
Geese 18@19c
Roosters, 3 lbs. up (soft bones) 26c
Turkeys, heavy, 12 lbs. and up 29@30c
Turkeys, light 24@25c
Squabs, live, per doz. 1.50@3.00
Dressed 3.75@4.85

ASPARAGUS.

The asparagus season has fairly opened. Daily receipts are being had both from the Imperial Valley and Grand Island. Demand fair, but prices are gradually getting lower every day with increased arrivals. Imperial Valley is selling at 15@25c per pound and Grand Island 20@30c per pound.

BEANS.

The high prices caused buyers the past week to hold back and do little. The light stocks, and this being seedling time, caused holders to maintain prices at present quotations. The consuming trade, however, is taking but few beans at present high prices.

We quote from growers:
Limas 13.00@13.50
Large white 12.00@12.50
Small white 12.00@12.50
Pinks 9.00@9.50
Blackeyes 7.50@8.00
Tepary 5.75@6.25

CABBAGE AND CAULIFLOWER.

There was a better tone to this market the past week. Receipts were light and all good cabbage was in demand. Most arrivals were poor and they were slow of sale. Shippers only want good firm heads, for which they are offering full last week's prices—\$2.50@3.00 per cwt. Cauliflower was in light supply and that coming in mostly poor. Choice large was in fair demand, but small and poor was very draggy and market for it was both dull and weak. Prices much the same as the week before—\$1.20@1.70 per standard crate. Season pretty near over.

HAY.

While there are no changes to note in quotations since our last review, the market has been very slow. Receipts were light, yet ample for the demand. Horse hay was in most request, the dairy people feeding more

WELL-STORED FRUIT GOOD SECURITY.

"To the Editor: Replying to your question, I know of no better security than fruit stored in a fire-proof warehouse and insured. The bank which I represent realizes that the average fruit grower is worthy of credit, and we shall treat them as liberally as possible, always bearing in mind that our bank is enterprising yet conservative.—T. S. Montgomery, President, Cal. Prune and Apricot Growers, Inc.

or less green alfalfa, thus reducing the demand from the dairy people. We quote f. o. b. Los Angeles: Barley hay, ton\$20.00@22.00

Oat hay, ton 21.00@23.00 Alfalfa, northern, ton 18.00@19.00 Alfalfa, local, ton 21.00@22.00 Straw, ton 11.00@12.00

Special Livestock Market Report.

San Francisco, March 21, 1917.

It is reported that the Moran Packing Co. has closed the deal to erect a big hog packing plant in South San Francisco.

CATTLE are pretty scarce but are not marked up this week.

Steers, No. 19½@9¾c No. 29@9¼c Cows and Heifers7½@8c No. 27@7½c Bulls and Stags6@7c Calves, light9@9½c Medium8½@9c Heavy7@8c

HOGS continue to make a new record every few days. Lightweights are marked down because there is such an overproportion of them; but heavyweights are all up a quarter from last week. Until the past few months they have not been over 11 cents in the past 24 years in the local market. Rice stubble hogs must begin coming soon. There are many of these in the Sacramento Valley. The few already received have killed out a good hard quality of pork.

[Rough docked 20 pounds, piggy sows, 40 pounds, stags 80 pounds.] 12 c 100 to 150 lbs.12½@13¼c 150 to 300 lbs.13½@13¾c 300 to 375 lbs.13@13¼c

NO SHEEP are being offered in California, butcher stock coming from packers' feed lots. Offerings would bring higher prices than last week. On account of scarcity of wethers in this State, slaughterers are looking outside, some heavy purchases having been made in Oregon.

Prime Wethers11@11½c Ewes9½@10c Lambs12½@13¼c

WOOL is very largely contracted in Northern and Southern California and Mendocino growers are still holding, with the situation growing stronger, though we quote no changes. Sacramento Valley, spring clip.39@40c Mendocino, year'sNominal Southern, spring clip28@30c Southern, 7 months15@18c Imperial Valley, 7 mos.14@15c Nevada, year's31@32c

THE HIDE MARKET is weaker, though packers are holding for higher prices. There is very little activity.

Steers23@25c Cows23@25c Light hides, 25 to 45 lbs.25@26c Kip20@22c Calf and veal29@30c Dry Hides32½@33½c Dry Kip35@36c Dry Veal and Calf38@40c Pelts, long wool3.25@3.50 Short wool1.25@1.50 Horse hides, wet, large, ea.5.00@5.50 dry, large3.00@3.50

Los Angeles, March 20, 1917.

CATTLE: The past week brought no change in this market. The receipts were not heavy, though equal to the demand. California and Arizona furnished most of the supply and gave us some very good cattle. Holders, however, are not pressing their cattle upon the market, the continued high prices East making them rather independent. Killers all in the market and wanted supplies though were not disposed to buy ahead.

Per cwt. f. o. b. Los Angeles: Beef steers, 1000 to 1100 lbs. \$9.00@9.50 Prime cows and heifers 7.50@8.00

Special Citrus Market Report.

Los Angeles, March 20, 1917.

Shipments of citrus fruits from Southern California from November 1 to March 18: Oranges 12,386 cars and lemons 2,307 cars. Shipments the same time last year: Oranges 9,839 cars and lemons 2,042 cars.

Shipments from Central California from November 1 to March 17: Oranges 4,045 cars and lemons 162 cars. Same time last year: Oranges 4,195 cars and lemons 142 cars.

There was a marked improvement in the Eastern orange market the past week, brought about by the threatened railroad strike and temporary embargo put on shipments by the railroads. All the Eastern markets showed an advance and demand fine for good oranges, especially those of medium sizes. Lemons were also stronger in sympathy and under the same influences.

Locally the market remains much the same as a week ago. There was a little better movement in highly colored oranges of medium sizes and large size grapefruits. Packers while buying a little more freely, paid no better prices, as fully half of the crop

is said to be still on the trees. Local packers paying 1@1½c per pound for oranges in the grove picked. Lemons continue as dull as ever, packers paying 1@1½c per pound in the grove picked for the best of them. All others have to be sold for what they will bring. Grapefruit 1½@2c per pound in the grove picked. Tangerines hard to move at 1@1½c per pound in the grove picked.

AUCTION SALES.

New York, March 19.—Thirty-one cars navel, five cars mixed and three cars lemons sold. Market strong on navel. Higher on lemons. Weather fair. California navel averaged \$2.75 @4.05. Lemons averaged \$3.40@3.90.

Boston, March 19.—Eighteen cars sold. Market doing better on small size oranges. Unchanged on lemons. California navel \$2.90@3.90. Lemons averaged \$3.10@3.65.

Philadelphia, March 19.—Sixteen cars sold. Market lower on oranges. Firm on lemons. California navel averaged \$2.45@3.60. Lemons averaged \$3.50@3.75.

Publisher's Department.

A total of 243 new paid subscribers were added to our list during the past week. These new readers were all secured without the use of premiums or clubbing offers.

A new book from the Macmillan Co., of 66 Fifth Ave., New York, was received during the week. The book is entitled "Breeding of Farm Animals," and its author is F. B. Mumford, Dean of the College of Agriculture of Missouri. It covers the subject of breeding very completely, contains over 300 pages, is cloth bound and illustrated. Price \$1.75 net.

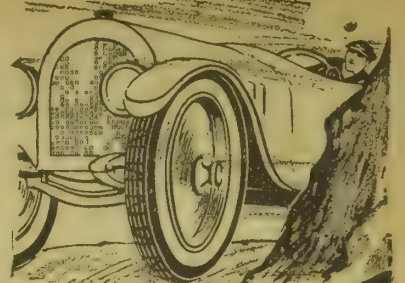
F. O. Pope of the Lawrence-Williams Co., publishers of the Ohio Farmer and owner of Gombault's Caustic Balsam, was a caller this week, while on his way home from a two-months visit in California. We are always glad to see Mr. Pope, as he comes in with a breezy, happy laugh, a hearty handshake and a large view of things in general which makes for contentment.

WEEKLY BUTTER AVERAGES.

Cents per pound for Extras.		Cents per pound for Extras.	
Week Ending	San Francisco	Los Angeles	San Francisco
Jan. 9...	26.65	34.91	28.16
" 16...	27.83	35.83	28.10
" 23...	28.85	36.91	28.50
" 30...	30.33	38.48	30.66
Feb. 6...	30.25	40.00	32.33
" 13...	31.40	39.70	33.25
" 20...	32.00	36.00	32.00
" 27...	30.90	37.00	35.25
March 6...	24.08	35.50	24.16
" 13...	29.91	33.50	28.83
" 20...	28.33	33.25	27.16
" 27...	28.50		28.08
April 3...	28.50		28.83
" 10...	29.31		28.00
" 17...	27.33		27.50
" 24...	25.25		25.00
May 1...	24.33		25.33
" 8...	24.10		25.00
" 15...	24.58		25.66
" 22...	25.00		25.00
" 29...	26.50		26.50
June 5...	25.50		27.00
" 12...	25.83		27.00
" 19...	24.50		25.91
" 26...	24.50		25.91
July 3...	24.60		26.00
" 10...	26.40		26.60
" 17...	25.83		26.00
" 24...	26.00		26.00
August 7...	26.16		25.91
" 14...	26.50		26.00
" 21...	26.50		27.95
" 28...	27.25		28.50
Sept. 4...	30.00		30.50
" 11...	30.20		32.00

WEEKLY EGG AVERAGES.

Cents per dozen for Extras.		Cents per dozen for Extras.	
Week Ending	San Francisco	Los Angeles	San Francisco
Jan. 9...	31.41	37.91	32.00
" 16...	30.33	41.83	30.75
" 23...	34.83	32.50	34.33
" 30...	36.33	32.08	36.66
Feb. 6...	35.66	34.99	35.50
" 13...	28.90	33.30	28.00
" 20...	23.66	33.01	20.33
" 27...	20.30	29.00	18.50
March 6...	18.33	24.75	18.00
" 13...	19.50	25.96	18.91
" 20...	20.00	25.66	19.08
" 27...	21.41		20.83
Apr. 3...	21.75		21.00
" 10...	22.00		21.00
" 17...	21.16		20.91
" 24...	21.83		22.58
May 1...	21.00		22.58
" 8...	21.20		21.41
" 15...	24.58		20.83
" 22...	25.46		22.50
" 29...	25.33		22.50
June 5...	25.00		24.51
" 12...	25.00		24.16
" 19...	24.83		23.75
" 26...	24.66		24.58
July 3...	24.60		24.00
" 10...	26.30		24.00
" 17...	27.16		27.00
" 24...	28.20		28.00
" 31...	28.50		28.00
August 7...	21.00		29.16
" 14...	33.08		31.00
" 21...	33.09		31.83
" 28...	33.50		32.00
Sept. 4...	36.13		32.00
" 11...	37.90		36.00



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THE PACIFIC RURAL PRESS

SAN FRANCISCO

MARCH 31, 1917.

LOS ANGELES

Intercropping Young Deciduous Orchards.

[Written for Pacific Rural Press.]

BARLEY uses about 540 pounds of water for every pound of dry matter it adds to the plant. Potatoes and sugar beets use about 450 pounds. Alfalfa uses over 1,000 pounds and sweet clover over 700 pounds. The average of eleven field crops is 587 pounds of water under western conditions per pound of dry matter produced.

If, in your orchard, you interplant a crop that produces a ton of dry matter per acre, you must provide, at the above average, 1,174,000 pounds of water more than the trees need.

If you are not willing to do this, your trees will suffer and you had better have chosen to raise vegetables or hay.

To reduce the water requirement, choose intercrops that produce the least dry matter per acre, with the highest value. Alfalfa is not one of these, for it not only produces about the most dry matter, but it requires about the most water per pound of dry matter. Yet alfalfa has proved a most desirable crop in orchards where plenty of water is used.

Strawberries require about the least dry matter per dollar's worth of product, and are very commonly grown in young orchards.

Advantages of Intercrops.—

Every orchard planter wants to grow something between the trees to pay for the use of the land until the trees shade the ground too much. But there is another reason equally good. The common system of dry summer cultivated dust mulch keeps the roots out of the surface dirt where most of the plant food naturally exists. That plant food, too, is made more unavailable by the burning out of humus, due to summer sun on unshaded ground. Intercrops aid greatly in shading the ground, though they quadruple the water evaporated.

Dangers.—We have seen a few orchards ruined by growing summer intercrops and have seen many that were set back probably more than the value of the crops. Too often the available irrigation is not enough for trees and the intercrops. When the latter get first chance at the water, it does not reach the trees. Not always do the trees show distress. If their supply is consistently short from the beginning, they are likely to put out just enough growth to use it and no more. If you are after fruit you are delaying the game.

Ignorance of the depth to which irrigation water goes is a most common fault of farmers, who turn it into one furrow until it is full, then into the next, never dreaming that they are leaving most of it right handy to the surface for evaporation and are not wetting deep enough for tree roots to go after the stores of food in the subsoil.

Valuable dirt is thus wasted, and the tree roots are trained to grow at relatively shallow depths where occasional lack of irrigation will hurt them much worse than if deeper. Every man should find out how deep his irrigations go at various parts both of the furrows and of the place.

Non-irrigated Intercrops.—There are about three permissible conditions for non-irrigated intercrops: on well subirrigated land which is

likely not good for trees anyway; on deep retentive soil where there is heavy winter rain well stored in the ground; and where there is good rainfall, and winter crops only are grown. One or more of these conditions obtain in the Bay district of Alameda county where some of the most intensive winter intercropping of orchards is practiced. These crops include spring-harvested rhubarb, currants, and all sorts of early vegetables. The legume vegetable vines are turned under as a cheap but very fine fertilizer.

Irrigated Intercrops include almost anything, nursery trees, bush berries, vegetables, grain, corn, beans, potatoes, alfalfa, etc. Aside from plenty of water, these crops must have plenty of food and sunshine. Indeed, it has been shown that the addition of fertilizers and humus to

poor soils may reduce the water requirement one-half or even two-thirds. At any rate the trees must not be allowed to get stunted for life because intercrops rob them.

On account of the shade in older orchards, shade-enduring crops must be used or only a row or two planted in each center, as corn is often grown after the first few years. Strawberries which begin ripening in April are doing well for H. Harris of Kern county among apricot and peach trees about four years old and 20 feet apart. Five to eight flat-bedded rows in each center totaling 54 rows, each about 65 steps long, produced over \$300 worth of Klondikes last year for him. In Placer and Santa Cruz counties, a large acreage of young hillside orchards produce strawberries for several years. In the Van Nuys district of Los Angeles county, L. M. Hartwick had 10 rows of Nikoma and Banner strawberries per center among walnut trees up to six inches in diameter and 50 feet apart. These also were in wide flat rows with furrows between and about 40 inches from center to center.

Sweet potatoes seem well adapted for intercrops, Mr. Hartwick having raised a ton of them in two or three centers. O. Hilbers of Orange county was successful in growing four rows in each 24-foot center between orange trees. C. J. Oswald of Kern county produced 248 sacks of salable sweet potatoes from less than an acre of young trees 24 feet apart. But three rows four feet apart of cantaloupes per tree row on seven

acres made very poor vines, probably partly due to shade. In the first two years of H. S. Reed's apricot orchard in Imperial Valley, he took off 228 crates of cantaloupes per acre, and followed them with onions for a winter crop. Watermelons among young apricots yielded 12 tons per acre for E. Steiner of the same county.

Potatoes among five acres of citrus trees produced two good crops for G. C. Smith of Los Angeles county, who finished digging late in February. In his district were grown 60 acres of winter tomatoes also. His own four acres of tomatoes were planted Oct. 1, two rows six feet apart per tree row. Cabbage and cauliflower make especially good intercrops for winter growing. Beans are good where they will not make

(Continued on page 391.)



Strawberries among full-bearing Peach Trees in Glenn County. Hedge-like appearance due to tall young walnut trees planted between peaches.

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EDITORIALS

ACRE-PRODUCT CURE FOR HIGH COST.

A VERY ingenious counter-attack is being made in the interest of food distributors who are anxious to divert public attention from the fact that they have been getting more than their proper share of the consumer's dollar. It is now being claimed that the high cost of food is not due to extortion and speculation after the farmers' product is captured, but is wholly attributable to the farmers' laziness in not getting a greater acre-product of his crops. It is, of course, a very silly contention from all reasonable points of view. It is a general and historic fact that, as trade is now constituted, the buyer pays the grower less per pound the greater his product is, and will continue to do so as long as he can—sometimes with good reason, but generally with the requisite amount of bad bunk, on his part. The cure for this is price-fixing by associated producers, in accordance with better statistics than have ever yet been attained, of actual supply and prospective demand when the crop is ready to move. Until this cure is reached it may do to claim that if the farmer would increase his acre product, the farmer would get less, the consumer would pay less and the distributor would get just the same—except that it does not work out that way very often. The usual result is that the farmer gets less, the consumer pays just the same, and the distributor gets more, when the supply is increased. Of course, as high patriotic and humanitarian lumps arise in his throat, the dealer forgets this and we find him, honestly perhaps, declaring that the real cure for the high cost of living is for the farmer to get more stuff from his land, and so we hear him shouting: "The American farmer gets from 13 to 17 bushels of wheat from an acre; the European farmer gets from 24 to 30 bushels per acre; therefore the reason why we do not have enough flour is because the lazy fool American farmer is so shiftless. It is all nonsense to arraign trade, transportation and other distribution agencies. The guilt is all with the farmer, who grows too little and the consumer who wastes too much."

MORE CROP, MORE COST.

THE foregoing declaration of the middleman is a procession of half-truths, and therefore very deceptive and misleading, but, like a run of grace-notes in music, it is calculated to tickle the popular ear, and therefore should be somewhat critically considered as to its content of real truth. It is, of course, true that the acre-yield of grain crops of this country can be increased 25 per cent and possibly even 50 per cent or more, if everything that is necessary to such increase is done, but it cannot be easily done, and it cannot always be profitably done. In fact, if no arrangement is made by which produce can be surely sold at a percentage above cost of production, as manufactures are, there is no surety that it can be profitably done. For it must be understood that more crop means more outlay of every kind by the grower—unless he happens to be able to move upon new land of stored-up fertility, and

all other natural conditions happen to favor him during the year that he makes the move. To convey the idea that the farmer can just as easily and cheaply get a large crop as he does a small one, by simply working harder and longer, as the middleman above evidently intends to assert, is a falsehood well calculated to deceive anyone who is as ignorant as the propounder thereof. Every effort to get a larger yield per acre, whether it be by better seed, by more and better tillage, or by increasing the fertility of the soil, or even the fuller knowledge to do these things, requires fundamentally more outlay, either in cash or labor, or both. This added cost has, of course, to be deducted from the selling value of the increment of crop, and it is sad to acknowledge that the required investment for crop increase is not always sure to be covered by the value of that increment. It is, of course, surer to be less than the required investment in Europe than in this country because of two fixed conditions abroad, viz.: the cost of labor is much less than in America, and the selling price of the product is much greater. The European agricultural laborer has the requirements and contents of a peasant; the American agricultural laborer has the ambitions and outlook of a sovereign—for even when he falls to dissipation, he drinks like a lord. His employer has to pay his high cost of living, either in wages or loss of efficiency or both. As increased crop requires increased labor, these are conditions which the American farmer has to take into his calculation. When it comes to selling, the American farmer has to move his expensive increment half-way around the world to get the price which the European producer gets at his nearest market town. There is such an advantage in cheaper production and higher selling price that it is little wonder that the American producer has been striving so long to cheapen production by machinery of greater capacity and by investing as little as possible in materials and supplies which would make for larger acre-yield—for the simple reason that a small yield at least cost gives him a better show for netting something than would a larger yield at a greater cost to get it.

IS THAT THE WAY TO DO FARMING?

IT IS not—and yet, as things have been, it has been about the only way to hold the land, unless one could find lines of production which yielded greater selling values, which many fortunately have found in more intensive industry with both plants and animals. But we are not following that line now, for our commercial orator, quoted above, rests his case on grain yield per acre, and we would not divert him. Is it then possible to bring the average American acre-yield of grain up to the European acre-yield which he cites, and what is it necessary to do to make it profitable?

First, it is necessary to have capital available for investment in land betterment and equipment at interest rates like those the European land-owner has to pay for the capital which he puts into his betterments of all kinds. Fortunately we are going that way now, but it is too soon to point to the effects of it. Hitherto the man who had land and no money could not possibly borrow money cheaply enough to invest for increased yields, no matter how well he knew how to do it. He had to borrow to get what the land would give with least outlay, and too often he missed the greater net which this least investment ought to have given him, because he had to pay so much for the little money he did borrow. Hitherto the man who had land and money to loan could not summon moral courage enough to put it in the betterment of his land because he could get so much more by the interest from lending it to others—even if they broke themselves by borrowing it. Thus the reduction in rural interest rates will work toward larger acre-yield—because a man who has land and no capital can borrow it for betterments, and because the man who has both land and capital will use the capital to improve his land for the chance of making more by producing than by lending.

The progress which has been made during the last few years in the popular understanding of the relations of reduced interest rates on capital

for agricultural uses, is really surprising. We do not need longer to go to farmers and build up an idea of such relations from their losses and hardships, as we did a few years ago. Financiers now acknowledge these relations so frankly and emphasize them so cordially that one is almost tempted to conclude that they have, always known and have always been at the point of tears over the evil of customs they were powerless to break away from. However, they have now broken away and have a right to laugh with joy at the suddenness and completion of their conversion. The Berkeley Land Bank, under government auspices, which was organized on Tuesday of this week, will soon be handing over to borrowers, through their local Loan Associations, several million dollars at 5 per cent, and will find itself in quite sharp competition with private capitalists, who have experienced enlargement of heart and shortening of fingers since the agitation of this subject began.

HOW DOES CHEAP MONEY AFFECT ACRE-YIELD?

OUR second point is that financing farming reasonably opens the way to everything which underlies increase of the acre-yield and so brightens the prospect of doing it profitably that the disposition to invest in farm improvement, which is necessary to increased production, will prevail among all who have agricultural vision and strength of purpose. One can not estimate the amount of money that will be invested in improvements and expended for equipment by farmers who have confidence and purchasing power. Water off land by drainage, water on land by irrigation; the use of fertilizers beyond anything ever done in the older States or dreamed of in the newer States; the scrapping of old implements which waste more time than they do work and the purchase of new implements and machines which make old Father Time himself do work by their greater efficiency: more power on the farm through motors which draw their energy from the clouds or from the center of the earth; more intelligence on the farm through better endowment of the government institution for research and instruction and through sufficient expenditure for good books and journals which teach the combination of science and practice and give the farmer the worth of his money in trustworthy truth about the best farming methods, instead of trying to wheedle him with clap-trap because it is cheap—and leave him holding the sack while they pursue other schemes for money-making. All these agencies for better farming through knowing more and through making better soils, plants, animals, fertilizers, implements and machinery, all work with him and for him, and through the application of fuller knowledge and better agencies to make the labor which he gives or hires more efficient in getting results—all these things will work together to increase the average acre-yield in this country, and to constitute American farmers more upstanding, and influential in securing industrial rights for themselves and for those who depend upon them for the bread of life.

WILL THIS INSURE MORE FOOD?

YES, because it will first make better farmers who will have the power to make better crops and to protect them from imposition by the throng which produces nothing, but aims to live by its wits in turning over what others have produced. Three things are fundamental to permanent increase of the average acre-yield in this country: (1) to know well; (2) to work to advantage; (3) to sell well. The last half-century of natural science, through the last quarter of a century of research for its best application, places American farmers in possession of technical knowledge which the world concedes to be the best of its kind. The last decade of study and effort for fairness in economics and finance is now bringing the American farmer into possession of industrial advantage which he has never possessed before. The third and the indispensable step toward making a lasting increase in food-production, the American farmer is now confront-

ing. Will he rise to it? Unless he can sell well—that is fairly, with regard to his rights as a producer—he cannot use the other two advantages which he has already achieved for himself. If he continues to allow others to price his goods, to him at four parts of a dollar, and to the ultimate consumer in such a way that six parts of a dollar are appropriated by others between the two, there will be no increase in the acre-yield, because it is economically impossible that there should be. He cannot profitably make the effort and investment which the increased acre-yield requires. He may

know how; he may have capital now at a parity with what is paid for other producing uses of money, but he does not know what he will get for his product; and, worse than that, he does not now know, as a rule, what he should get! He does not even have the last chance which the unknowing producer in other lines enjoys—the auction room. Of course, the farmer has the power to do everything our commercial orator, quoted in the first paragraph of this writing, declares and more. He can do it and make it profitable too, and if he doesn't do both he will do neither.

By
the Editor

QUERIES AND REPLIES

Inquirer Must
Give Full Name
and Address

Cow Crops in a Moist District.

To the Editor: What about oat hay for dairy cows? We can't raise alfalfa in our valley. Clover does fairly well here for one or two years, then it is gone, but oat hay does finely. We get big crops of it, also of turnips and carrots and some years we get a good crop of corn, wheat or barley. The bugs take the pea and vetch. What is the value of grain hay compared with the grass hay, and what to feed with it to make a balanced ration? What is the value of turnips and carrots for dairy cows? It is very wet here in winter and in summer, too. From March until June cows do finely on grass. We do not feed at all.—Subscriber, Smith River, Del Norte county.

Oat hay is the most tender and nutritious of grain hays and is better than coarse grass hays, and it free from rust and cut at the right time will compare well with any grass hay. It comes nearer to a balanced ration, because of its good protein content, than most dry forage or roughage does. It needs, however, to be fed with silage or roots to get the succulence which maintains the milk flow. Beets and carrots are especially good for such use with oat hay. Turnips are also available, though as a rule less nutritious and somewhat liable to ill-flavor the milk unless fed immediately after a milking. But you should keep on trying to get more protein through some legume which will enjoy your cool and moist conditions. We should keep on trying the clovers, even if re-seeding is required at short intervals, for clovers help the soil as well as the cows and probably make more manure-value under ground than the re-seeding costs. You probably have too little heat and too much wet soil to please alfalfa and therefore the fibrous-rooted clovers, red, white and alsike (which usually holds on longer than others in your part of the State) should have continued trials under different conditions. Your conditions resemble Eastern rather than prevailing Californian, and sowing clover with oats, for a stand of the latter after the oat hay is cut, is more reasonable with you than elsewhere in the State. The way to find the best cow-plants for any section with peculiar local conditions is to keep on trying, and neighbors should cooperate and compare notes along that line.

Proper Pruning of Prunes.

To the Editor: How should we prune apricot trees one and two years from planting?—G. M., Selma.

Trees having made one summer's growth after planting should be cut back during the dormant season following to about 12 inches on three or four best placed shoots which it is desired to retain for main branches and other shoots removed. When the first year's growth is treated that way the next year's pruning consists in selecting usually two shoots of the last summer's growth, which tend in desirable directions, cutting them back to eighteen inches and removing other strong shoots not needed to fill out the desired frame work of the tree. Small shoots on the lower parts of the young tree should be retained for leaf growth. It is desirable to cut out surplus or wrong-growing strong shoots because they will throw the tree out of shape, but it is not desirable to clean off all small growth as some pruners do. These small shoots will bring the first fruit and their activity will tend to reduce the over-strong push of the main

branches. If you have two-year-old trees not properly shortened the first year you will have to prune them rather severely to get lower branching, often cutting into the first year's wood growth to secure that result. This pruning should have been done two months ago or more, but had better be done now than to allow the trees to run farther away from good, strong form.

Is Popcorn Earlier?

To the Editor: What is the feeding value of popcorn for turkeys and hogs? I wonder if it is not too hard to be readily digested. Is it considered as palatable as field corn? I usually save some corn from one year to the next for early fall feeding but this year it was so high that I sold myself short and will have none to fatten turkeys for Thanksgiving. I want to plant an acre of very early corn in order to have it dry in time. I have read that popcorn will yield almost as much as field corn and is good to feed. If you think it will be satisfactory, how much seed will it take per acre? I will want to plant 3½ ft. rows so as not to change the cultivator from the regular corn rows. How thick should it stand in the rows? Do you know of a certain variety that would be best?—S. R. E., Inyo.

Popcorn is evidently regarded as of such little importance in farming operations that analysts and feeding experimenters have practically ignored it. The feeding value of popcorn resembles that of other corn and it can be used in feeding like other corn, and if fed when newly mature is probably more easily reduced by digestive processes than when hardened by keeping over to the second year, which is desirable to secure the best popping. We doubt if you will gain anything in earliness, for popcorn usually takes as long, and sometimes longer, to ripen seed as field corn does. We would rather take our chances for earliness with Extra Early Adams or King Philip, or Pride of the North than with any popcorn we know of. However, if you try popcorn you may come out wiser than we are. Planting as you propose and dropping kernels at eight inches apart will take a little more than two quarts of popcorn seed to the acre.

Pollination of Almonds.

To the Editor: I am told that a Drake seedling almond planted will grow a Drake tree, and can be relied upon to do so. Is that so? Also that a Drake tree will fertilize an I. X. L., also a Nonpareil, because a Drake is a male tree and the others are female trees. That seems to me to be absurd. Is there any foundation at all for such a statement?—Planter, Orland.

All almonds have flowers organically complete, having both stamens and pistils, and therefore it is not true that the Drake is a drake and all other almonds ducks. But though all have organs complete the functioning of these organs differs very greatly in degree. The efficient pollination of almonds is therefore a matter not of organs but of functioning. Drake is a great functioner, both for itself and for other varieties, and this is the reason for the desirability of associating other kinds with it in planting.

Now as Drake is such a good functioner the chances are that the seeds will be strongly inbred and the likelihood of variation reduced—bringing its offspring truer to the seed than others which require cross-pollination. Nevertheless the almond is naturally a great sport and the only way to be sure of Drakes is by budding.

Pumpkins with Corn.

To the Editor: At Princeton, Colusa county, Cal., we intend to plant this season a large acreage to Egyptian corn, King Philip flint corn, and dwarf-milo maize. We are contemplating planting pumpkins between the rows of corn, and would like to know from you if this is a good practice, where the soil is a fertile sandy loam, as it is with us, or will the pumpkins take too much moisture from the corn? It is not our intention to irrigate the corn. When should the pumpkins be planted? Would it be too late to plant them after the last cultivation of the corn? E. H., San Jose.

It might do with irrigation, but we should shrink from doing it dry even with the fine deep loam which we know there is on the river bank land near Princeton. If you are in the low bottom of the river it might work better. You must therefore be pretty sure about what summer moisture you will have, if you expect to get both crops without irrigation. On the bank lands this summer it looks as though you would have to keep the cultivator going as long as you can get through, to get a full crop of corn and you should not get pumpkins in the way, to scant the corn crop and not do much for themselves. We should give all the land and moisture to each crop separately, and plant both just as soon as the location is safe from frost.

Dry Hills for Winter Growth.

To the Editor: I have a hill field of poor red soil I have been raising oats on. It gets pretty dry in summer. Is there any grass that will grow on this hill that would make hay or pasture for cows?—J. G., Potter Valley.

Such dry uplands without irrigation can usually only be counted on for pasture or hay from plants which make winter growth as oats do. If you will let the cows help you by furnishing manure for fall spreading you can get more oats for hay or you can get a lot of rye for winter pasture by early fall sowing. If you sow some bur clover with the rye you will help the cows and the land and you will get better wild winter feed afterwards, if you do not pasture too close in the late spring. We do not know any grass which can be counted on to give you summer feed on such land nor even to hold onto its life through the dry heat.

What Will Brome Grass Stand?

To the Editor: Will Brome grass grow if planted in adobe ground when dry, and then let water stand on it during the winter? I did that this year and it seems to be making poor progress.—Subscriber, Vacaville.

We are not surprised that you slowed it down. Perhaps nothing but eel grass could stand it. We do not know just what Brome grass will live through, but its record is of short life in land which is "distinctly wet" and you struck the "distinctly" all right. The plants which are most likely to survive long submergence, according to our observation, are English rye grass and red clover. Whether they will find moisture enough in your land to live through the summer and fall baking and drying, you will have to determine by trying them. Our notion is that they would survive the submergence.

Succotash Silage.

To the Editor: What is the best bean to plant with silage corn in San Joaquin Valley?—W. D. B., Los Angeles.

We should expect most from the blackeye, though we now know no reason why the soy bean should not do as well for this balanced silage as is now being reported from the Southern States—providing the situation is not too dry to get much of either.

California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau at San Francisco for the week ending at 5 p. m., March 27, 1917:

STATIONS	Past Week	Rainfall Data		Temperature Data	
		Seasonal To Date	Normal To Date	Max'm	Min'm
Eureka .....	.88	25.21	37.77	58	36
Red Bluff .....	.00	15.67	20.92	74	36
Sacramento .....	.00	12.19	16.59	78	40
San Francisco .....	.00	15.28	19.18	72	44
San Jose .....	.00	12.05	14.32	74	34
Fresno .....	.00	6.82	8.09	78	34
Independence .....	.00	.....	.....	.....	.....
San Luis Obispo .....	.00	22.40	17.67	82	40
Los Angeles .....	.00	14.59	13.66	80	46
San Diego .....	.00	8.74	8.68	70	46

Grape Little-Leaf Due to Local Causes.

[Review of Paper by Prof. F. T. Bioletti and Leon Bonnet.]

Grape little-leaf (curly-leaf, or yellow leaf) is prevalent all through the San Joaquin Valley and causes loss equal to mildew, vine hoppers, or phylloxera, according to Prof. Frederic T. Bioletti and Leon Bonnet of the University of California in a paper published in the Journal of Agricultural Research. Vines slightly affected show lightish areas on the larger leaves near the middle of canes and have many shot berries. Vines badly affected show small yellowish leaves, short joints, upright canes, and abnormally numerous laterals. They yield very few normal berries, and when the trouble is very bad, they bear nothing and the leaves turn brown entirely or in spots. Affected vines occur in small or large areas with occasionally a vigorous vine surrounded by the weakened ones. A vineyard may lose most of its crop from the disease one year and show practically no sign of the trouble the next, though it may return in later years. No bacterial, fungus, or animal parasite has been found in connection with affected vines. Nursery vines showing the trouble have completely recovered when set in vineyard form. Healthy nursery vines set in other locations have developed the trouble after three or four years. Healthy vines from an unaffected district may show the disease the first year after planting in an affected district. The evidence seems conclusive that the cause is local, whether it exists in soil, water, or weather conditions.

There is a remarkable correlation between coarseness of soil and intensity of the trouble, though vines on coarse soil are not always troubled. This correlation was true in all vineyards examined and at all depths tested (1, 2, 3 and 4 feet).

Moisture Supply.—There seemed less correlation with the amount of water in the upper four feet of soil. But in the vineyard where more tests were made than in any other one (108) there seems to the writer of this review to be an interesting relation between diseased vines and variation in moisture content. This vineyard was not irrigated.

Since grape roots often go over 20 feet deep in well-drained soil as loose as it is in this vineyard, there is reason to believe that the roots of the diseased vines were waterlogged, at least during July. The moisture content at that time four

feet underground was over 11 per cent, while about 14 per cent is all that sort of soil holds without excluding air needed by the roots. In August, the moisture at four feet dropped to an average below 7 per cent; in September below 5 per cent; in November to a little over 4 per cent; coming back in March to nearly 5 per cent; in May over 6 per cent; and June, over 7½ per cent. It may be that the water-table was not far below the four-foot level in July, and that many lower feeders were rotted off. In August, as the water-table receded, their upper feeders dried out, at the same time new ones were following the water-table down at great draft on the vines' already strained vitality. Such strain caused little-leaf growth until the new roots became established in September when new healthy growth began. In October and November the growth appeared perfectly healthy. In the following spring, the first few leaves on all but the worst affected vines were healthy; but as the water-table rose due to irrigation of other vineyards in the district, the disease showed itself on the succeeding growth and in the setting of grapes. It may be that this irregular water table was partly due to the greater evaporation from the coarser soil.

Where moisture determinations were made between healthy vines, the soil moisture at four feet stayed close to the maximum endurable by the roots through July and August, coming down in October not quite to 8 per cent average and not going below that during the year. The high water-table being constant and supplying moisture enough at four feet for growth all through the season, compelled the vines to find their food and water in the upper soil. Few roots being developed within reach of the water-table, there were not so many that could be drowned out in summer; and there was enough water in the upper soil to supply these when the upper roots of the troubled vines were dying for lack of water.

Any other similarly severe cause of reduction in food supply (which depends on about 500 times its volume of water to dissolve and carry it where the plant can use it) may be considered a cause of little-leaf if it operates with notable variation from month to month.

Earliest Cantaloupes, Squashes, Etc.

[Written for Pacific Rural Press.]

Many cantaloupes, squashes, and pumpkins are still to be planted. The season is late, but he who will, can get them ripe a week to ten days earlier than natural by pruning the vines, according to J. E. Johnston of Los Angeles county, who has grown melons off and on since some years before 1910. The pruning has not worked so well on watermelons.

He prunes the cantaloupe tips off with a corn knife when the vines are five or six joints long. This makes them throw earlier laterals which bear fruit. When the laterals have grown a joint or two beyond the fruit of the first crop which will already have set, he prunes off their tips with a quick sweep of the corn knife around the hill. It does not pay to prune for the second crop, which would have to compete with the general first-crop run from unpruned fields.

No irrigation is practiced, but the ground is warmed up early by winter plowing and frequent harrowing. This is practicable on sandy loam soil two feet deep, but if underlaid by gravel at less depth, it must be irrigated.

TALKS ON Nitrogenous Fertilization

Number 12

INTERESTED readers of our "Talks" are asking why Sulphate of Ammonia meets the nitrogen requirements of California soils so well; how it is held in the soil and converted into plant-food; how quickly and for how long its plant-food is available to the plants. For answer, let us glimpse briefly at one of Nature's wonderful processes, which like the brook goes on forever undreamed of by most of us.

All California soils contain alkaline (basic) substances, occasionally in proportions that might limit or hinder plant growth. In so far as it can,

SULPHATE OF AMMONIA

combines with them, the consequent reaction resulting in the formation of ammonium carbonate. A tendency toward soil alkalinity is thus checked, the Sulphate breaking down so that the humous compounds can absorb and hold its ammonia-nitrogen.

Two distinct types of bacteria, and possibly other soil organisms, complete the nitrification process. Under their activities, the humous-bound ammonia is released as nitrate-nitrogen. These manufacturing processes progress steadily, delivering food to the plants about as fast as they can use it.

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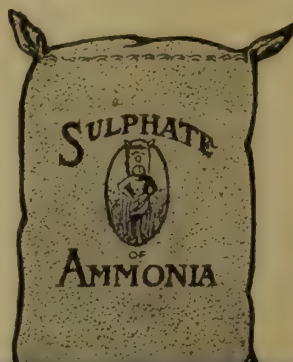
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Sample sent on request



RENEWING PEACHES ON THIN SOIL.

[Written for Pacific Rural Press.]

Omitting spring plowing and cultivation for peaches on thin soil over unblasted hardpan made the trees finish a good crop and produce enough fruit wood for a good 1917 crop on the place rented by Frank Henry in Fresno county. There were 125 Elbertas, Lovells, and Muirs six years old. There was less than a foot of soil in some places, and not over two feet anywhere, and Mr. Henry did not want to cut off several inches of that by plowing. In 1915 the trees averaged about three feet growth with a poor finish, showing their resources exhausted. Twelve or fifteen of the trees died back heavily in August and September. These were cut back to live wood and made four to six feet growth last season, finishing with good buds and carrying their leaves till frost. In 1916, there was a fair crop on the more than a hundred of the trees that had not died back. Bur clover and weeds grew thick around them all spring but dried down in June and were left as a dry mulch to prevent evaporation of any more water. At that time the trees had made less wood growth than the season before. They were semi-dormant but not weak, and had quit growing. Then they were irrigated in June and twice later. The fruit got the benefit of the water nine to fourteen days before new growth started. The orchard was plowed the first week of August.

TIMELY ORCHARD SUGGESTIONS.

Apples must be sprayed with arsenate of lead before the leaflets on the blossom ends fold together, or worms will get you.

Dig out the peach borers now or sooner, and paint the trunks at the ground with grade C or D asphaltum or the crude oil emulsion described recently.

Inspect orchards for thrips now.

Time to overhaul the cherry packing houses to determine what supplies will be required. You may not be able to get them on short notice.

Pear and apple scab prevent many blossoms from setting fruit. Spray with Bordeaux when the buds are opening and again when they have just fallen.

Train the trailing berry vines on the ground under the others until fall when the old ones can be cut out altogether.

Watch for cut worms and feed them poisoned bran. They work at night.

PRUNE TREE SURGERY.

To the Editor: Would it be safe for me to do any tree surgery on my bearing prune orchard after the sap runs? I want to dig out decayed wood from trunk and branches and fill with cement or sawdust and asphalt. Would either filling be preferable at this time?—E. J. A., St. Helena.

We would prefer to do it while sap is running; and except for relatively small holes in the trunks themselves, would prefer the sawdust asphalt, especially for crotches and smaller limbs, because it can be repacked later if it loosens from any cause.



Olive Trees

such as these are grown only on our foot-hill locations —
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We have a fine block of Mission and Manzanillo trees—both on PICHOLINE roots and grown from cuttings. We have had splendid success on all olive plantings—a most important assurance to you.

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Spray for Walnut Aphids.

[Written for Pacific Rural Press.]

Some walnut trees in summer get sticky and dirty. Drops of sticky syrup fall from them to the ground. These come from millions of lice which suck the living out of the trees and nuts. Then in the fall, these nuts have to be separated from the sound ones by special machinery in the packing houses or they spoil the reputation of our State.

A Ventura county grower last fall mentioned a neighbor who lost 25 per cent of his crop that way.

The aphids live over winter only in the form of eggs stuck to trees usually in protected places such as leaf scars, etc. They begin to hatch a week before the buds open and at once seek the swelling buds or new leaves. Spraying is effective if well done before or after leaves unfold.

Winter Spraying up to the time the spray would reach the insides of the buds is so much easier, and requires so much less spray, that it seems far more economical than to wait until leaves are on and some damage done. Whether it is needed can be told by examining for the oval black eggs as long as the diameter of a small pinhead.

Lime-sulphur 1 to 8 kills the eggs and does not injure the tree until buds unfold. Crude oil emulsion up to 12 per cent has proved less effective in experiments by U. S. Dept.

Agr. Trees lime-sulphured in winter by the University of California in southern coast counties yielded fewer culls the first season, and made as much of a crop as unsprayed trees. They made greater and more vigorous fruit wood growth, so that both quality and quantity of the following crop were greatly better than on unsprayed trees. Extra lime is used so workmen can see better where they have sprayed. Prof. R. E. Smith recommends 5 gallons commercial lime-sulphur and 25 pounds of quicklime slaked and strained, per 95 gallons of water.

Spring Spraying.—On varieties and in districts where growth has already started, a different spray may be used if lice can be found on the growing tips. The killing agent in this will be Blackleaf 40 one pound per 200 gallons. Four pounds of whale oil soap are added as a spreader. This may have to be repeated later if not all of the eggs are yet hatched, or if trees are reinfested from neighboring unsprayed orchards.

The sooner a thorough spray is applied to infected orchards, the better it can be done, with least labor and material. It is especially hard to do effective spraying in big walnut trees when they are filled with leaves, on the under sides of which the aphides feed in security.

Pinching for Second-Crop Grapes.

[Written for Pacific Rural Press.]

"To what do you lay your big crop of Thompsons?" we asked B. H. Fisher of Kerman last fall. Between his four-year vines were paper trays in every row, nearly enough to make 1½ tons per acre of raisins. One vine of six fat canes had over 117 pounds of plump grapes, some of them finely colored and most of them in big bunches. From 46 vines he picked 145 trays, and from two vines 12 trays.

"Pinching," he said.

He had gone through the vineyard in spring when the shoots were just a few inches long and the forms of bunches just breaking away, pinching the terminal buds from the shoots, doing it fast with both hands. This started the laterals at once, so the second crop ripened very nearly with the first and it enlarged the soft tissues of the stem of the bunch already formed, so that it always did carry more sap to the berries than it could otherwise. It diverted sap into fruit growth rather than allowing it to make long canes of useless wood.

Mr. Fisher had a light crop on two-year vines in 1916, and they finished up strong fat canes for the 1917 crop. He noticed on neighboring vineyards that there were many

small bunches and usually only one per shoot. Pinching is only one of the operations in the Henry system which Mr. Fisher followed closely in time of plowing, methods of irrigation, cultivation, etc., as reported in Pacific Rural Press from data supplied by parties who have succeeded by the system.

FIG TREES OVERBALANCED BY PRUNING.

[Written for Pacific Rural Press.]

Fifteen Black Mission fig trees planted on the J. C. Furgeson Ranch in San Diego county 30 years ago by a schoolgirl in two rows, about seven feet apart each way in a beef pasture, are 25 feet tall and bearing a good crop each year, though not plowed or pruned for 12 years.

Overbalanced and Nearly Uprighted.—Twelve years ago most of the limbs extending between the two rows were chopped off. The trees now look like large oaks, but all their big branches are toward the outside of the double row. The trees lean almost to 45 degrees and the ground is cracked between the rows so they seem in danger of uprooting themselves.

Canneries have been paying \$42.50 to \$45 per ton for 1917 cling peaches in San Joaquin Valley.

GUATEMALA AVOCADO NURSERY

E. E. KNIGHT.

YORBA LINDA, CALIF.

Bulletin No. 77, U. S. Dept. Agriculture.

"The Avocado of Guatemala form a distinct group * * * and from a commercial standpoint, the most promising for introduction into our tropical possessions. The thick-skinned round and thick-skinned oval are probably the most promising, owing to the thick skin, good keeping qualities and fine flavor."

WRITE FOR BOOKLET OR CALL.

Mr. Grape-Grower

It is almost time for MILDEW

Remember: "A puff in time saves the vine."

Read this extract from a letter to grape-growers of Tulare County by C. F. COLLINS, County Commissioner:



"Wherever this disease (MILDEW) was prevalent last season, millions of spores are now lurking, waiting proper atmospheric conditions to begin their work of destruction, and their control is very difficult after they have begun active operations upon the vines. The secret of success lies in 'doing them before they do you.' The best authorities agree that winter spray for mildew is practically useless, and that liquid spray at any time is more expensive and less efficient than dry sulphur. * * * Ten times as much can be accomplished at this time with one-half the expense, as can possibly be done one month later."

YOU KNOW how necessary it is to do the work quickly when the right day comes. READ THIS extract from a letter from S. C. DAILEY, a grape-grower of Kingsburg, Cal., concerning

THE AMERICAN SULPHUR MACHINE.

"I used one of your AMERICAN BEAUTY machines in my Emperor vineyard last season, with perfect success. Emperors are especially hard to keep free from mildew, as you have to irrigate them so much to produce good fruit. This over-irrigation makes the mildew grow, if it has the least chance. The year before I used more sulphur with a foreign machine, and there were lots of grapes damaged. I attribute my success last season to the fineness and volume of the cloud of sulphur thrown by the AMERICAN BEAUTY SPRAYER. After using it there was not a trace of mildew in my vineyard. Your machine works twice as fast as my old one."

DON'T LOSE VALUABLE TIME tinkering with a poor machine. A few hours lost at a critical time may cost you your crop. Send us \$11.00 for a vineyard size, or \$13.50 for an orchard size machine, and we will send you an AMERICAN BEAUTY DUST SPRAYER, all charges paid. Try it. If it is not entirely satisfactory, return it at our expense, and we will cheerfully refund your money.

WE FULLY GUARANTEE EVERY MACHINE.

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Manufacturers,

SAN FRANCISCO.

INTERCROPPING YOUNG DECIDUOUS ORCHARDS.

(Continued from first page.)

added breeding places for red spiders which also attack many orchard trees seriously. B. B. Green of Sacramento county harvested 43,437 pounds of bayou beans from 23½ acres of two and three year pear trees; having inoculated the beans and planted them five rows per tree row. He figured on the fertilizing value of the vines as well. On the Carroll ranch in Orange county, four to six rows of lima beans were grown between young orange trees set 24 feet apart on 90 acres, getting about 15 sacks per acre actually occupied by the beans.

PRUNING AFTER BLOSSOMING.

To the Editor: I did not prune my four-year peaches and apricots, expecting to save enough buds from the birds so there would be a crop. Now the peaches are loaded with bloom and the apricots are setting. Would it hurt crop or trees to prune them now?—J. J. G., Terra Bella.

Prune the apricots now and the peaches as soon as they are set. There will be a slight set-back, but the damage will be less than to leave the fruit on.

RESTORED YELLOWED ORANGE TREES.

About 50 four-year orange trees had been planted over dynamited hardpan by Adolph Butze of Tulare county, and they were very yellow. Six haywagon loads of pure horse manure were applied. The trees became green and have not yellowed in the four years since. They are bearing good crops now.

OLIVE TREES FROM SPLIT STUMPS.

From 3½ acres of Ascolano olive trees which were cuttings three years ago, T. Copeland of San Diego county picked \$35 worth of fruit last season. The cuttings were made by splitting the stumps of old Ascolano trees which were given to him if he would dig them out. They have made a fine growth.

DOUBLE WORKING ALMONDS

Apricot root is considered less affected by peach borers and crown gall in the Banning district than almonds, so almonds are being double worked on apricot roots. J. J. Haugh has started three acres this way. French prune is root-grafted on the apricot and in the following year the almonds are budded into their tops or whip-grafted.

PUMPKINS AMONG PRUNES.

Fifty dollars per acre for a hill of pumpkins in the center between each four prune trees is reported by J. E. Beerney of Kings county, concerning the orchardist from whom he bought the pumpkins at \$4.50 per ton delivered. He fed them to the hogs but figured it didn't pay very well at the price.

The Eldorado County Supervisors have rescinded their action abolishing the office of County Horticultural Commissioner.



Olive Trees

Read This Letter from the Secretary of the Los Angeles Olive Growers' Association:

Los Angeles, Cal., March 14, 1917.
Fancher Creek Nurseries,
Fresno, California.

Gentlemen: I desire to write you and express my views of the present situation relative to the Olive Industry, and would say that at the present time there is more demand for the products of California Olives than at any time in the past history of the State of California. It would be possible today to sell for delivery out of the next crop, which will mature in November and December, three or four times the amount of the visible supply and at prices which would render the grower a good return upon the money invested and labor employed. The former consumers of the Imported Green Olives have more rapidly during the past twelve months turned their attention to the California Ripe Olives, than in any similar period of time ever before experienced. It is reasonable to believe that after they once become accustomed to the California product, they will never revert to the Green Olives on account of the superior food values to be obtained through the use of the California Ripe Olives.

The Industry looks encouraging for the reason that it provides a product that can be put up in cans, so it is not at the mercy of the market, the same as a perishable article would be. Those looking for a product upon which they may reasonably expect an advanced increased consumption can make no mistake in selecting California Ripe Olives.

Yours truly,

FRANK SIMONDS,
Secretary.

- There is a shortage of Olives in California.
- California Olive Oil is practically all sold out.
- There is a strong demand for California Ripe Olives.
- Prices for trees are lower than they probably will be next season.
- The next five or six weeks are ideal for planting.
- We have a magnificent stock of Manzanillo, Mission and Ascolano, which are the three best varieties to plant—all propagated from bearing trees in Mr. Roeding's orchard.
- Special quantity prices on application.

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20 years in knowing how to produce citrus trees—but time is not for sale. Our trees have been improving in quality yearly. They are sturdy, generous-bearing, true-to-name and disease free. You would naturally expect to pay more for our trees—you may be astonished at how small the difference. As a present or prospective buyer, we want to hear from you. Get our advice about citrus trees—NOW.

50,000 Citrus Trees

Valencias, Navels and Eureka Lemon Trees

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First Nat'l Bank Bldg. San Fernando, Cal.

Heavy Sudan Hay and Pasture.

[Written for Pacific Rural Press.]

Among the enthusiastic Sudan grass boosters we have met the past winter is J. H. Trainer of Butte county, who planted 80 acres to that crop last year under about as adverse conditions as one could think of; and still got a heavy crop of hay and a lot of good pasture.

The land on which Mr. Trainer grew his Sudan was almost totally dried out in May when he plowed it; and it was the latter part of May when he planted the seed. He drilled it in with a six-foot drill, using 14 pounds of seed to the acre; and harrowed the field well afterwards. There was both adobe

and sandy soil in the field and little difference was seen in the yield on the two soils.

Ordinarily he believes that the best time to plant is just after all danger of frost is over; for he noticed that the first frosts last fall nipped it badly. Of course the moisture most years in early spring is sufficient to insure a good stand.

During the growing season, he cut a good crop of hay, finding that the best time to cut it is just as it goes into the blossom. After harvesting the hay, he pastured it heavily with dairy cows till the first winter frosts.

Not only was he satisfied with the yield but he also values it highly as a cattle feed. He fed the Sudan hay with alfalfa hay to his 60 cows, Sudan constituting the major portion of the ration.

As soon as the Sudan pasture was high enough to pasture, he turned the entire herd into the field; and after five milkings he was getting 10 gallons more milk daily from the 60 cows than he had previously secured from the alfalfa-Sudan-hay ration. One good thing about the Sudan pasture is the freedom with which it may be used without fear of bloat. This year Mr. Trainer will have a like amount of land planted to Sudan and expects very much heavier yields than he secured last year.

A pageant showing the romance of California agriculture will be presented at the dedication of Hilgard Hall at the California College of Agriculture October 13.


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Answer the farmer's big questions. How can I grow crops with less expense? How can I save in planting potatoes? How make high priced seed go farthest? The **IRON AGE Potato Planter** solves the labor problem and makes the best use of high priced seed. Means \$5 to \$30 extra profit per acre. Every seed piece in its place and only one. Saves 1 to 2 bushels seed per acre. Uniform depth; even spacing. We make a full line of potato machinery. Send for booklet today.

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FIRST & JACKSON STREETS, OAKLAND, CAL.



TRANSPLANTING SWEET POTATO PLANTS.

[Written for Pacific Rural Press.]

When sprouts from sweet potatoes in the hotbed as described in a recent issue, show leaves above ground, they are pulled for transplanting. The largest are pulled first. This has to be done carefully to prevent breaking the sprouts, which are covered with roots. F. L. Landram of Merced county commences planting April 20 if the ground is warm outside; and does not continue later than June 1 on account of fall frost danger as well as the probable shortage of water late in the season.

As the plants are pulled, the leaf heads are laid together and the roots cut off to about four inches long. They are protected from drying out until planted. The field is worked fine and put into ridges 14 inches high and three feet apart.

Planting and Culture.—Three men including the driver transplant two acres per day by machine. The machine opens trenches on two ridges at once, and closes them soon afterward. In the interim the two men sitting on the machine close to the ground, insert plants in the opened trenches about 14 inches apart. A water tank on the machine automatically wets the trenches, and is refilled from the irrigation ditch at the end of each row. There is no hoeing except to cut out the weeds. The plants are irrigated three or four times per season and cultivated after each except the last, when the vines are in the way.

After the vines begin to run, need of irrigation is told by their tips, which show lack of water before any other part of the plant, by drooping. Water is then necessary at once.

CUT OUT CORN SMUT.

To the Editor: Will bluestoning corn prevent smut?—J. S. H., San Jose; E. J. A., St. Helena.

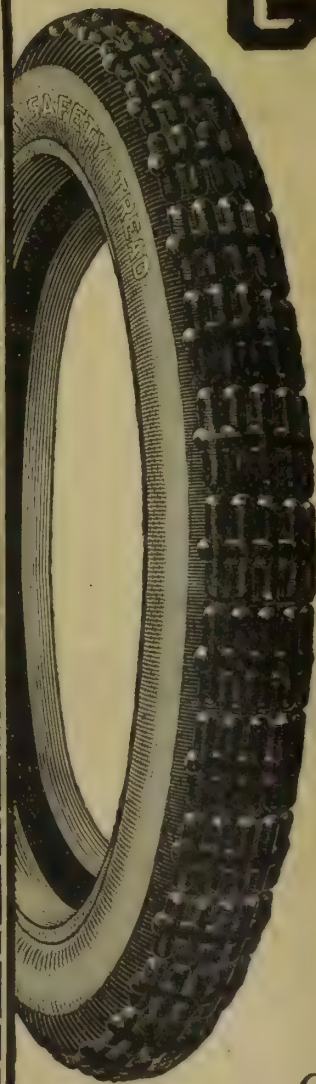
No. Corn smut lives over in the soil, also in manure of stock that has eaten smutted stalks or grain. The only way to control corn smut is to cut and burn every affected stalk in summer time before the smut pustules have broken and allowed the spores to spread.

The Humboldt County Farm Loan Ass'n has been widely misquoted as having secured approval of loans desired by its members, from the Federal Farm Loan Board at Washington. No such loans will be approved until the District bank is in operation.

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Fair Treatment

What You Get With GOODRICH BLACK SAFETY TREAD TIRES



HAVE you ever taken stock what you get WITH as well as IN a Goodrich Black Safety Tread Tire?

You know, of course, you get the *best non-skid fabric* tire, the oldest, largest, most skillful rubber manufacturer can make, and get it at the *low standard ONE-PRICES* of the *Goodrich Fair List*.

You know you get the toughest tread, rubber compounding has yet produced, and all the seven cardinal tire virtues—style, comfort, safety, economy, durability, freedom from tire trouble, and mileage—IN a Goodrich Tire.

But have you looked deep into the Goodrich *pledge of perfection*, and *Goodrich Fair Treatment*, which go WITH each Goodrich tire, and require a service worthy of the good name the tire bears?

Goodrich Tires Must Make Good

If, as occurs in rarest instance, a tire fails to render its service, the B. F. Goodrich Company is more eager than you that its short-coming be made good.

Bring back a Goodrich tire that owes you anything: is Goodrich's invitation to the world.

Goodrich Fair Treatment at once cancels any debt of a Goodrich Tire—makes good quickly, generously, and gladly.

Certainty of utmost service is what you get WITH a Goodrich Tire

ORDER THROUGH YOUR DEALER

The B. F. Goodrich Co.
Akron, Ohio

Also maker of the Tires on which Dario Resta won the official 1916 Automobile Racing Championship—*Silvertown Cord Tires*

SILVERTOWN'S DOMINATION OF 1916 AUTO RACING

The 1916 automobile racing season brought forth amongst a half hundred Silvertown victories the following especial triumphs of the **ONLY two-ply, cable-cord tire:** National Automobile Racing Championship, won by Dario Resta with 4100 points. 15,582 points scored toward the championship by Silvertown to 7,176 by ALL its competitors COMBINED. Eighty per cent. of all the prize winning positions of A.A.A. sanctioned races. 31 First to 5 Firsts by ALL its competitors.

Where You See This Sign
Goodrich Tires are Stocked



Ask Your Dealer for Them

"Best in the Long Run"

HEAVY CROP OF EARLY POTATOES.

[Written for Pacific Rural Press.]

After J. C. Heffley of Imperial county cut up his White Rose potato seed this year, he immediately sprinkled them with fine dry sand to dry off the cut surfaces. He expected their dry outsides to prevent their rotting if ground should remain cold long after planting. That this sometimes happens is evidenced by a note from Fresno county saying potatoes planted two months are not up.

He claims about 17 tons per acre usually ready for market by May 15, having been planted Feb. 10 to 15.

Potatoes 20 days earlier are produced from the eyes of the seed end, according to Mr. Heffley, than from the stem end. He cuts the seed end into four pieces to get as much as possible of that sort.

In planting, he runs an eight-inch shovel through the field to make furrows three feet apart. Seed pieces are spaced about 10 inches apart and a furrow thrown over them from each side leaving them about four inches deep.

The field is irrigated soon after planting, and springtoothed just before the potatoes come up. Two more irrigations and cultivations are required.

SIDE-HILL CORN CULTIVATION.

When the silage corn field was planted on the Stephens Dairy at Mission San Jose last year, a side-hill field was chosen and the rows were run up and down the hill to facilitate cutting with a binder.

It was not noticed at planting time that the planter ran at a different depth when going up the hill than when going down but when the corn plants got above the ground it was seen that across the entire field two rows would be good and the next two poor; and at harvest time this made a material difference in the yield.

It was then remembered that in going up hill the planter was always tipped backward while in going down hill the opposite was true. Thus the rows planted on the up-hill round were shallow planted while the down-hill rows were deep planted.

To overcome the difficulty this year, the runners are raised about two inches when the down-hill rows are being planted and are sunk in as deep as they will go on the up-hill rounds. This makes for uniform depth of planting.

OLD BLIGHT-RESISTANT CHINESE PEAR.

To the Editor: The following may be of interest to your correspondent, R. J. R., Sacramento: Forty-one years ago I was working with the second largest collection of pears in the United States. It was known as the Satterwaite collection, near Philadelphia. The trees were pruned in Espalier style and the land cropped. The trees used to blight badly, though I do not recollect any of them being destroyed entirely. There was one tree known as the Chinese sand pear that was blight-resisting and very vigorous. My recollection of it is that the leaves

JOHN DEERE IMPLEMENTS

BETTER FARM IMPLEMENTS AND HOW TO USE THEM



The John Deere Light Tractor Disc Plow works with any standard tractor—the hitch is adjustable.

Three or four discs. Discs have a double setting. Taking care of all conditions where a disc plow can be expected to operate.

Adjustable scrapers keep discs clean and lighten the draft. No choking in trashy ground—frame is high, beams are dropped, which gives good clearance under the frame, and there is plenty of room between the discs for trash to pass through.

John Deere Plows for Light Tractors

So far as quality of John Deere Plows for Light Tractors is concerned, they are built for the farmer who realizes that it is business judgment to buy a high grade tractor plow. Don't forget that a tractor plow is not an everyday purchase.

John Deere Plows for Light Tractors are noted for their high grade work in the field—the real test of tractor plow value.

Before you make your purchase, be sure to see John Deere Plows for Light Tractors. A careful purchase means a permanent saving.



BOOK FREE 156 page reference book—tells all about a complete line of farm implements and how to adjust and use many of them. A practical encyclopedia of farm implements. Worth dollars.

Describes and illustrates Plows for Tractors; Walking and Riding Plows; Disc Plows; Cultivators; Spring Tooth and Spike Tooth Harrows; Disc Harrows; Alfalfa and Beet Tools; Farm and Mountain

Wagons; Manure Spreaders; Inside Cup and Portable Grain Elevators; Corn Shellers; Hay Loaders; Stackers; Rakes; Mowers and Side Delivery Rakes; Hay Presses; Kaffir Headers; Grain Drills; Seeders; Grain and Corn Binders.

This book will be sent free to everyone stating what implements he is interested in and asking for Package No. X-.

JOHN DEERE, MOLINE, ILL.



The John Deere-Dain System Rake

Here is what you do with the Dain System Rake:

Follow the mower closely, rake while leaves are still active and place hay upon clean stubble.

Make straight windrows, and no dumping of rake is required. There is no bunching of hay in turning corners.

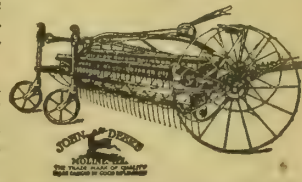
Put the hay in medium size windrows, with the bulk of the leaves inside and the majority of stems outside.

The windrows will be loose in the center for the free circulation of air. The hay retains its color and nutrition.

[The John Deere-Dain System is the rake employed with the Dain System of Air-Curing Hay.]

Reel raised or lowered, rake thrown in or out of gear and angle of teeth changed by means of convenient levers.

Ample capacity. The inclined frame grows higher where the windrow becomes larger—an exclusive Dain feature.



John Deere Harvesting Machinery

John Deere harvesting machines have worked under every possible condition—severe droughts that resulted in much light grain, short and irregular straw—extremely wet seasons, heavy grain, down and tangled.

However, the John Deere, "The Better Binder", has throughout maintained an unbroken record of success in cutting, binding and tying grain.

The John Deere Grain Binder has wide and high bull wheel—great power. Main frame riveted—unusually strong.

Three packers instead of two, make better shaped bundles and save grain.

Accurate tying mechanism.

Quick turn tongue truck saves time, relieves horse and makes square corners and full swaths possible.



John Deere Factories

Every implement bearing the John Deere trade mark is made in a John Deere factory.

To insure the best in every class of implements there is a special John Deere factory for making each class. John Deere Plows are made in a plow factory; their hay-tools in a hay-tool factory; their planters in a planter factory.

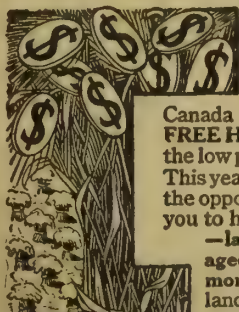
Every tool in the John Deere line is made in a factory organized and equipped to make such tools.

All John Deere factories are in communication with each other. Each has the benefit and experience of all.

When it comes to purchasing raw material, John Deere factories as a unit, represent an enormous buying power. This is an advantage to purchasers of John Deere implements.

Don't forget that each John Deere factory is a leader in its field—that every implement it turns out is worthy of the name, "John Deere."

JOHN DEERE, MOLINE, ILLINOIS



160 ACRE FARMS IN WESTERN CANADA FREE

Raise High Priced Wheat on Fertile Canadian Soil

Canada extends to you a hearty invitation to settle on her FREE Homestead lands of 160 acres each or secure some of the low priced lands in Manitoba, Saskatchewan and Alberta. This year wheat is higher but Canadian land just as cheap, so the opportunity is more attractive than ever. Canada wants you to help feed the world by tilling some of her fertile soil—land similar to that which during many years has averaged 20 to 45 bushels of wheat to the acre. Think of the money you can make with wheat around \$2 a bushel and land so easy to get. Wonderful yields also of Oats, Barley and Flax. Mixed farming in Western Canada is as profitable an industry as grain growing.

The Government this year is asking farmers to put increased acreage into grain. Military service is not compulsory in Canada but there is a great demand for farm labor to replace the many young men who have volunteered for service. The climate is healthful and agreeable, railway facilities excellent, good schools and churches convenient. Write for literature as to reduced railway rates to Supt. of Immigration, Ottawa, Can., or to

GILBERT ROCHE, Canadian Government Exhibit, San Diego, Cal. Canadian Government Agent.

were thick and glossy like a laurel. The fruit was very handsome in size and color, like a Bartlett, but waxy, artificial looking, no value for eating purposes. Chas. Blom. Napa.

Kill Squirrels Gophers

The only exterminator that is 100% efficient and guarantees results or money back is

KILMOL SQUIRLGOPHENE

Used and endorsed by biggest and most successful ranch owners. Prepared with balls saturated with KILMOL give best results.

New formula of U. S. Gov't Poisoned Barley is effective in dry weather.

Your dealer carries Kilmol, U. S. Gov't Poisoned Barley and Waste Balls.

WASTE BALLS \$6.00 PER THOUSAND Cheaper than you can make them,

Herbert F. Dugan 1170 Sutter St. San Francisco

General Agricultural Review.

GRAIN AND FIELD CROPS.

Diseased potatoes should not be planted in uninfected ground.

Wheat prices are soaring and flour is jumping, so that bread must soon rise.

The growers of about 800 acres of onions in Riverside county have prospect of a fine crop.

The 1916 rice crop in Ecuador was a total failure for lack of water, but 15,000 tons are expected this year.

About 400 acres of sugar beets are being planted in Owens Valley, Inyo county, under contract to the Holly Beet Co.

The U. S. marshal seized 4800 cans of soya beans at Fresno, which were labeled "navy beans" and were to be shipped to Honolulu.

The freight rate on rice from Hong Kong to the Pacific Coast has been raised from \$10 to \$15 per ton. This may help California growers.

Early potatoes in San Gabriel Valley, San Fernando and Los Angeles districts, and Orange county are estimated at 8700 acres this year.

T. H. Kearney of the U. S. Bureau of Plant Industry writes that he originated the Yuma and Pima cotton instead of E. W. Hudson as

stated in our issue of Feb. 17. Mr. Hudson is active in securing its commercial introduction.

The Pahrump Valley Company of Los Angeles has completed arrangements for the planting of 200 acres of cotton in the Pahrump Valley, Nevada, near Las Vegas.

Forty produce growers of the San Bernardino Valley organized Mar. 22 to market direct. Geo. M. Cooley was elected president. Dues are 50 cents per acre per year.

The quarantine against Indian corn or maize from the Orient, which has been in effect since July 1, 1916, has been modified by the Secretary of Agriculture, effective April 1, allowing corn to be imported from Japan and Manchuria under regulation.

How to increase the production and improve the quality of potatoes has been the subject at several meetings held this week in the foothill sections by the State Horticultural Commission. E. V. Grubb the Colorado potato expert, addressed the growers.

Imperial County truck crop acreage is estimated by U. S. Dept. Agr. as below: 12,700 acres cantaloupes, 635 acres Bermuda onions, 400 acres early potatoes, 925 acres green peas, 960 acres lettuce, 565 acres watermelons, 250 acres summer squash, 125 acres strawberries, and 283 acres asparagus.

DECIDUOUS FRUITS AND NUTS.

So far, there is nothing to prevent a record pear crop in the Tehachapi district.

Spraying to prevent June drop of oranges is not yet recommended by the University of California.

Contra Costa orchardists are spraying with distillate emulsion and tobacco extract for thrips.

Frank Difore of Berryessa is the latest elected trustee of the prune and apricot growers' organization.

Senate bills 1110 and 458 for better shipping fruit standardization and county horticultural co-operation have been recommended for passage.

The State Market Director's appointee on the Board of Trustees of the California Prune and Apricot Growers, Inc., is M. J. Madison of Alameda.

Members of the prune and apricot growers' organization may sell their fruit to outsiders for fresh consumption or for canning after satisfying the organization that such fruit will not be dried.

E. J. Vosler, who went to Australia recently for the State Horticultural Commission, to find beneficial insects to prey on our fruit pests, was very cordially received by Government officials.

At the largest meeting of almond growers ever held in California at Chico March 10, 82 growers representing over 1000 acres organized a local association and affiliated with the California Almond Growers' Exchange.

The State Market Director's appointee on the Board of Directors of the California Prune and Apricot Growers, Inc., is W. G. Alexander of San Jose, a man who has proved great ability in executive positions and has been known in his home town for 22 years.

Among the fruits intercepted by the California Quarantine officials during February because of pests, were sweet potatoes from China, pineapples from Hawaii, oranges and lemons from Tahiti, sweet potatoes from Mexico, potatoes and apples from Washington, and other products from other states. Ninety-six per cent of horticultural imports were passed as free from pests. These came in 263,667 parcels on 119 ships.

CITRUS AND SEMI-TROPICAL.

Redlands orange pickers have demanded from the packing houses 5 cents per box or \$2.50 per nine-hour day.

At Riverside, 120 white orange pickers recently struck for an increase from \$2.25 to \$2.50 per day and got it.

Lindsay shipped 446 boxes of Washington navel in October, 102,069 in Nov., 290,042 in Dec., 22,730 in January and 18,000 in February, according to figures published in the

C. C. Jenkins, a big tooth-pick manufacturer of South Dakota, was at Redlands last week. Mr. Jenkins is in Southern California buying up orange wood for his tooth-pick factory.

A former Porterville man now living in Virginia writes that Florida oranges are preferred there because California oranges are too sour. The Florida oranges are seedlings, have fibrous centers and less attractive skins, but they are sweet.

GRAPES AND SMALL FRUITS.

Bulletin 477 of the U. S. Dept. Agr. treats of strawberry marketing.

The Las Palmas Vineyard Co. of Fresno is grafting 60 acres of wine grapes to Malagas.

Buyers are contracting for San Joaquin Valley table grapes at \$100 per ton on the vine.

Strawberry acreage in the highest five producing States is estimated by the U. S. Dept. Agr. at 24,300 as against 27,400 last year.

Seventeen Happy Valley, Shasta county, berry growers recently organized and will sell their entire crop through one local firm.

Strawberry growers of Monterey, Santa Cruz, Santa Clara, and Alameda counties have formed an association which is said to represent 75 per cent of California's output.

MISCELLANEOUS.

A stump pulling bee was recently held in Sonoma county with a Fitzpatrick K Power stump puller.

Make all farm loans through your local farm loan associations. Swindlers are out trapping the unwary.

The Ohio Experiment Station recommends that potash fertilizers be not used for field crops on account of its high price.

MANGEL BEETS

Alfalfa Grass Seeds
FRUIT TREES

WRITE FOR PRICES.

California Seed Co.
151 Market St.
SAN FRANCISCO, CAL.

FARM IMPLEMENTS AT A BARGAIN

I offer the following implements and tools, which have not been used. These articles, with the exception of weather wear damage to paint, are as good as new. Will sell any or all at 40% less than cost.

I am compelled to sell this outfit because I have been called to the military service and have no further use for it.

One Fairbanks Morse 30-60 H.P. Oil Tractor.
Two John Deere Heavy Engine, 6-Disc Plows.
One Oliver Engine-Gang Plow, 14 in. (6 Bottom).
One Oliver Engine Gang Plow, 14 in. (5 Bottom).
One Extra Heavy Bain Wagon, 3% Steel Axle, 6 in. tire.
Twelve Hardwood Harrow sections.
Four John Deere double cutaway discs, 6 ft.
Complete Outfit Tools and Equipment.

ADDRESS:

A. L. DUNN,

515 Hearst Bldg., San Francisco, Cal.
Lieutenant, Co. G, 5th Regiment, N. G. C.

EUCALYPTUS

We have yet a limited stock and invite inquiries as to price and variety.

W. A. T. STRATTON,
Petaluma, California



Kills Prairie Dogs, Ground Squirrels, G. Hogs, Pocket Gophers. Saves alfalfa. Experimental stations approve. 1400 tablets, P. P. 81.25. Warranted. Mole Tablets, 75c. Ask Druggist or send direct.

Sudan Grass

CALIFLORA BRAND

This is one of the best-known forage crops used in the Southern and Middle Western States. It grows from 5 to 10 feet high and will produce four crops of hay under irrigation and usually two crops without irrigation. It thrives in the valley and foothill sections of California. It yields more to the acre than any forage crop we know of, and the quality of the hay is excellent. The stock of this seed is short and we anticipate higher prices in the near future.

BUY NOW—1b. 50c; 10 lbs. \$4.00; 100 lbs. \$35.00.

Alfalfa Seed

CALIFLORA BRAND

This is our best grade of common Chilian alfalfa seed. On every test this brand of Alfalfa Seed has surpassed all others. We do not believe its equal can be had elsewhere. When buying this grade you are not paying for any weeds or chaff. It is the cheapest to plant because it is the best. Send for price and sample.

We also offer superior stocks of GRIMM, HAIRY and SMOOTH PERUVIAN and TURKESTAN Alfalfa Seed.

SEED POTATOES

Splendid stock of OREGON GROWN American Wonder, Early Rose and Garnet Chili Seed Potatoes. These are all good early varieties. Write for prices and quantities desired.

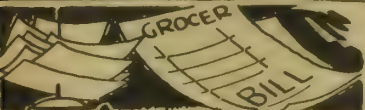
1917 SEED CATALOG—IT IS FREE—SEND FOR IT.
TELLS HOW, WHEN and WHAT TO PLANT.

We Pay the Freight

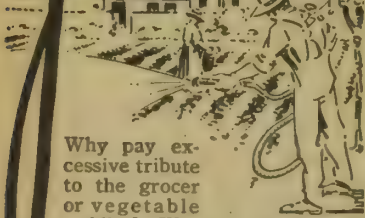
Valley Seed Co.

506-508 J Street,

Sacramento, Cal.



Reduce your grocery bills with a garden!



Why pay excessive tribute to the grocer or vegetable peddler? Why be "held up"? Fool both of them with a nice home garden.

Why not have fresh, crisp vegetables of 20 different types—the most healthful food you can eat.

Germain's proven seeds will insure perfect results. They are adapted to California soil and climatic conditions.

plant Germain's
PROVEN SEEDS—
Germain
Seed and Plant Co.

226-28-30 Main Street, Los Angeles.

IRON AGE GARDEN TOOLS

Answer the farmer's big questions: How can I have a good garden with least expense? How can the wife have plenty of fresh vegetables for the home table with least labor?

IRON AGE Combined Bill and Drill Seeder

solves the garden labor problem. Takes the place of many tools—stored in small space. Sows, covers, cultivates, weeds, rakes, etc., better than old-time tools. A woman, boy or girl can push it and do a day's hand-work in 10 minutes. Combination, \$3.25 to \$5.00. Write for booklet.

Bateman Mfg. Co., Box 390, Greenock, N. J.
KANOUSE & FROST, General Agents,
FIDELITY & JACOBI, SOUTHERN, CARLETON, CAL.

The farm loan bank at Berkeley has applications for loans totaling over \$15,000,000. The interest rate will be 5 per cent.

The Washington State Experiment Station will supply Washington farmers with pure cultures of legume bacteria at a cost of 25 cents per acre.

A good-sized community vegetable garden has been laid out in Diablo Park, Contra Costa county, and many varieties of berries have been planted.

Potash production in U. S. during 1916 was 10,000 tons, worth \$3,500,000. In 1915 it was 1000 tons. Most of it comes from Nebraska alkali lakes.

Washington State has provided for a director of farm markets and assistants to investigate, encourage, and develop market conditions within the State.

Yuma, Arizona, water users are objecting to the project of putting in a temporary weir for the benefit of Imperial Valley during summer, because they fear floods.

In only one case per 89,000 operations have the Southern Pacific automatic block signals failed to work. When they fail, they make the trains wait. There are about 7,000 such signals on the system.

The Tulare County Board of Trade estimates the value of that county's products last year as follows: Citrus fruits, \$3,883,495; dairy products, \$2,500,000; cattle \$1,656,825; raisins, \$1,350,000; fresh fruits, \$1,379,000; grain, \$1,250,000; hogs, \$1,248,000; cannery products, \$1,000,000; and poultry products, \$500,000, besides many other items.

OF GENERAL INTEREST.

C. Hugh Wren of Orland has been appointed Glenn County Horticultural Commissioner to succeed Carl Ley.

Miller & Lux have joined the Madera Irrigation Bureau in working for an irrigation district in that county.

NOTES ABOUT FRUIT CROPS.

Orange County Horticultural Commissioner Roy K. Bishop made a thorough canvass of deciduous fruit prospects and advised us on Mar. 24 as follows: Apricots have set the biggest crop that we have ever had, the fruit is so thick on the trees that it will have to be thinned. This is also true of peaches and plums. The walnuts are just coming out but the conditions are most favorable and indications are that there will be a very fine setting of nuts. The frosts of the 9th, 10th, and 11th of the month were not severe enough to injure the blossoms.

Alameda. — Heavy blossoming of cherries and heavy setting of apricots, pears, etc., are stirring up a move for revival of the Cherry Festival.

Fresno. — Apricot crop almost wiped out except where smudged. Peaches hurt in lower districts. Frost killed strawberry blossoms and vegetables.

Santa Clara. — Elevation will play an important part in the prosperity of Santa Clara apricot growers this season according to observations of our publisher. Coming down from the hills on the east side, on Mar. 25, he stopped at an elevation perhaps 200 feet above the floor of the valley and cut a representative twig from under a big branch and about six feet from the ground, which is overloaded with apricots plump and sound all through, averaging a quarter inch small diameter. Stopping at about 100 feet lower elevation, he cut twigs similarly located on the trees, from an old tree and from a young one. These had not been well nourished as we judge by the amount of new growth on the old tree and the shriveled new growth on the young tree. But there is a reasonable crop on the old tree if it matures as it is likely to, though it contains a few frosted fruits. All are smaller than on the higher elevation. The twig from the young

tree lost all of its fruit, perhaps partly because it was more exposed to cold, and partly because the buds had been weakened by lack of water last fall.

Another branch taken from a tree on the floor of the valley also shows

short growth, but what there is of it is well supplied with apricots, small but sound. This orchard was smudged. Cherries and prunes in full bloom.

Tehachapi. — Every prospect so far for a fine crop of pears and apples.



Smooth Lock Seam Sleeve

Here is an exclusive Madewell feature that appeals to every user of Surface Pipe. Seamed inside with perfectly smooth surface. Much stronger than the old-fashioned lapped and riveted seam used by others.

Madewell Surface Pipe

is recognized in established surface pipe districts as having the strongest, smoothest, and most practical construction.

Our Long Lock Seam is the best seam possible to make—and in addition is carefully soldered the entire length so that it stays water-tight. Strength and Smooth Finish are the big things to consider when you invest in surface pipe.

Send for Free Booklet—which tells just how Madewell Pipe is constructed

Robinson Hardware Co.

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YUBA
Ball-Tread
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Honestly built,
for continuous
hard work

There's
more
power at
the draw-bar
because: less is
required to propel
the machine

Are you on the
Yuba mailing list?

How many acres have you?

Yuba Manufacturing Co.

Department A-9

433 California Street, San Francisco

Heap big mileage! Value

PRICES F. O. B. Nearest Branch or Distributor Terms, C. O. D.

SIZE	PLAIN TREAD	SAVAGE GRIP	GRAPHINITE TUBES
30 x 3	\$11.50	\$13.80	\$2.95
30 x 3 1/2	14.60	17.55	3.60
32 x 3 1/2	16.70	20.00	3.85
33 x 4	22.55	25.90	4.90
34 x 4	23.15	26.60	4.95
36 x 4	25.90	29.80	5.15
35 x 4 1/2	34.20	39.20	6.30
36 x 4 1/2	34.70	39.95	6.50
37 x 4 1/2	35.80	42.10	6.60
37 x 5	40.70	46.30	7.65

Adjustments on basis of 4500 miles

"Heap big mileage" at no greater cost than for ordinary, low-mileage tires—that's the Savage idea of value.

And there's no guesswork about the price—you always know that you will pay the same for Savages anywhere. Every Savage dealer has the same Standard Price List.

High mileage, low cost per mile—tire satisfaction. Sold from factory to you through our own distributors.

SAVAGE TIRES

Heap big mileage!

Distributors Everywhere.

The Savage Tire Corporation

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BRANCH OFFICES:

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SAVAGE GRAPHINITE TUBES

The only tubes that have graphite vulcanized into the surface. Prevents deterioration, sticking, friction and heating. Makes soapstone unnecessary. Lengthens life of tube



Milo Better than White Egyptian.

[Written for Pacific Rural Press.]

Milo and white Egyptian corn grown in the same field, six acres of one and two of the other, showed that the grain of milo resisted birds much better, and the stalks were much preferred by cattle. This year the white Egyptian will not be grown.

In August, when in the milk, birds attacked the white Egyptian, and as it hardened, shelling more freely, they ate and threshed out a large per cent of each head, stripping many of them bare. We cut the heads from the Egyptian first, using them for turkey feed. After this variety was gone from the field, the birds worked on the milo, but the extent of the damage was what they ate, as the milo does not thresh from the head readily. Neither did the birds work so constantly in the field after the Egyptian was gone.

Cattle Preferred Milo Stalks.—In September the field was cross-fenced and thirty-six steers turned into parts at a time. Most of the grain was headed before turning the cattle to it. At all times they had access to both varieties, but invariably used the milo first. Both kinds were green when the cattle were turned in. The Egyptian showed no dry leaves at all, but the milo showed some at bottoms of stalks. The cattle ate all the leaves and all the smaller stalks promptly, and as the season advanced, and the new sections of the field were all worked over, they would go over the ground, using everything up except some of the largest stalks, which were affected by rain and frost before the supply was exhausted.

No trouble was experienced from new growth after the fall rain, because there was so little it was negligible among so many animals.

Culture.—The field is sandy loam river bottom, subirrigated, but with rather too much alkali for corn growing.

Fresh plowed to turn under a rank growth of weeds. Worked down with disc and spike-tooth harrow. Sown last of April too early, with grain drill, plugging outlets to make rows two feet apart. In May whole field was frosted badly, but came out all right in a few weeks although most of the plants were frozen back to the ground. About the last of May the field was harrowed once over with the spike-toothed harrow. This was the extent of its cultivation for the season.

The milo stood a little more than the gyp, but the stalks were not quite so large. In the best drained parts of the field both kinds grew rank and attained a height of ten feet or more. As many as twenty-three well-developed heads were matured on a stool of milo.

STANDARD WIDTHS FOR WAGON TIRES.

As the result of a long series of traction tests on earth and gravel roads, the U. S. Department of Agriculture recommends in Circular 72, that the following widths of tire be adopted generally for wagons of different carrying capacities.

Type of wagon	Gross weight loaded	Width
	Pounds	Inches
1-horse wagon	2,000	2
Light 2-horse wagon	3,500	2½
Medium 2-horse wagon	4,500	3
Standard 2-horse wagon	6,800	4
Heavy 2-horse wagon	7,500	5

These five types, says the circular, should be sufficient to meet all the needs of farming operations and general work, except the heaviest trucking and certain specialized hauling which is likely to be confined to city pavements. The circular recommends, therefore, that a name be adopted for each of these sizes and that the wagons be designated not by the size of skel but according to their gross load capacity. The gross carrying capacity

of the wagon should be shown, it is said, by stencil or plate on the back of the rear axle. The size of skel for the five types of wagon named

vary, says the circular, from 2½ or 2¾ inches for a 1-horse wagon to 3½ inches for the heavy 2-horse wagon.

790 Bushels of Potatoes

PER ACRE, THE LARGEST CROP
ON RECORD IN THE U. S.

Were grown in California and awarded Grand Prize by International Jury, P. P. I. E. Not only was this the largest crop, but the quality was especially fine, bringing a price considerably above the market. The grower attributed a good part of his success to the use of

Gold Bear Fertilizer

The average crop of California is about 150-bushels. What do you get?

W. V. Shear, Potato Expert, says: "Don't try to save money by adopting cheap methods to cut from cost of production. Is it not good business practice to spend enough money to produce a good crop and make money on the investment rather than use cheap methods and lose money?"

Fertilizing is not an expense, but an investment, yielding immediate returns.

Let us help you solve the problem of bigger and better crops.



Address

Fertilizer Department.

WESTERN MEAT COMPANY

San Francisco, California

Four Years of Successful Alfalfa Planting

WESTROBAC GETS RESULTS

San Jose, Calif.
March 19th, 1917.

Western Soil Bacteria Co.,
442 Sansome Street,
San Francisco, Calif.
Gentlemen:

For the past four years we have used Westrobac in inoculating alfalfa seed, and have in every case obtained a strong, vigorous stand.

In some cases the soil was alluvial; in others adobe. Sometimes there was too much rain, sometimes too little. Frequently severe frosts followed the sowing, and fell on the very young plants.

We have sowed both in the spring and in the fall, but under varying conditions have always been successful.

I should never think of sowing alfalfa seed without using Westrobac to inoculate the seed.

Yours truly,

(Signed) FRANCES R. SCHALLENBERGER.

Westrobac is bred exclusively by the

Western Soil Bacteria Company

422 SANSOME STREET,
SAN FRANCISCO, CALIF.

Avoids Soil Washing on Hillside.

[Written for Pacific Rural Press.]

Orchard soil on a steep hillside is likely to be washed out, as even grain may be during heavy winter rains. F. E. Judson's brother in San Diego county nearly lost a hillside of grain during the heavy rains of a year ago, but F. E. has a four-year peach orchard on the same sort of a slope which was in perfect shape when seen during the mid-January rains last winter.

The tree rows had been planted in straight lines up and down the hill and at right angles to these in the other direction. Beginning about three feet below a tree row, the dirt was plowed and scraped down hill until the space to three feet above the next row was almost level, but sloping slightly upward to the outer edge. These level spaces between trees were run around the hill with just a slight slope, so irrigation water would follow them; but storm water would not likely get up much headway to wash gullies. A straight row across the hill might thus include trees on slopes between several terraces.

Straw manure was placed along the outer edge of each level terrace to help dam back the storm water and hold the soil which might wash up against it. This gave a tendency for the hillside to terrace itself more securely each year.

The steep slopes in the middle of which stood the trees, were last winter covered with weeds and straw manure, while the terraces were catching and absorbing water for this summer.

The only down-hill runs for storm water were the brushy draws into which the terraces drained.

This sort of terracing may be done any time when other work is not pressing, though while the soil is moist, it would work easier. Where it is done among trees already planted, the roots will be considerably torn on the lower sides of trees. Irrigation is simple, water being run around the base of each slope in a single furrow. It sub-irrigates downward for roots of trees below.



ALFALFA

250 lbs. of Mococo Superphosphate per acre will increase the yield of alfalfa enormously. "In some cases the alfalfa growth has been tripled," writes Mr. F. F. Lyons, San Joaquin Co. Farm Adviser. Write for particulars. THE MOUNTAIN COPPER CO. 832 Pine Street, San Francisco.

He'll Make You Poor — KILL HIM

What is the use of preparing a good seed bed and planting seed that cost good money if you let squirrels and gophers eat your profits. These pests are a constant danger to crops and a constant menace to the family's health.

Carbon Bisulphide

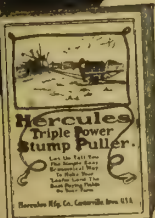
has for over 30 years proven to be the most effective—the only sure killer of squirrels, gophers, rats, prairie dogs, ants, moles, yellow jackets, moths, weevils, lice, etc. It is easy and safe to use.

Write today for interesting folder and learn how this profit saver works.

Wheeler, Reynolds & Stauffer
624 California St.
San Francisco California

Pull Stumps

Clear Land the Easy Way—Get This Book

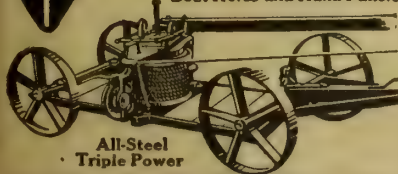


More Hercules Stump Pullers in use than all others combined. Reason—They make big money for owners. No stump too big. No land clearing job too tough. Man and horse clear an acre a day. Pull stumps at three cents to five cents each.

Hercules Portable

Unlimited Guarantee
GET THE BOOK—New Triple Power Portable Puller at special low price to first buyers. 30 days free trial. Unlimited Guarantee. Get the story. Send for free book.

HERCULES MFG. CO.
112 25th Street, Centerville, Iowa
Both Horse and Hand Pullers



Pull Big Stumps by hand



Clear your stump land cheaply—no digging, no expense for teams and powder. One man with a K can rip out any stump that can be pulled with the best inch steel cable. Works by leverage—same principle as a jack. 100 pounds pull on the lever gives a 48-ton pull on the stump. Made of Krupp steel—guaranteed against breakage. Endorsed by U. S. Government experts.

K Stump Puller

Write today for special offer and free booklet on Land Clearing.

Walter J. Fitzpatrick
Box 32
182 Fifth Street
San Francisco California

GARDEN FOR FOUR PEOPLE.

Before ordering seed the home gardener would do well to look over his garden plot, decide on the best location for each vegetable, and determine how much he will require for the space available for each variety.

He will find it helpful to make a rough plan of his garden on a large sheet of wrapping paper. On this plan he can indicate the spaces to be used for each variety and also by means of colored pencils or symbols show where a second crop is to be planted or interplanted between growing rows, and also arrange for the second and third crops which are to follow those previously harvested. Such a plan will enable him to keep the garden busy all season supplying fresh vegetables during the summer and producing in the late fall roots and other crops for winter use. Once the heavy preliminary spading and working of the garden has been done, it is about as easy to raise two or three crops as to keep the garden clean of weeds to produce only one picking.

The following amounts of seed, the garden specialists of the U. S. Department of Agriculture say, are needed to plant approximately 100 feet of row, or enough to supply vegetables for a family of four:

- Beans, Snap, 1 pint.
- Beans, Pole Lima, ½ pint.
- Beans, Bush Lima, ½ to 1 pint.
- Cabbage, early, ½ ounce.
- Carrot, 1 ounce.
- Cauliflower, 1 packet.
- Celery, 1 packet.
- Cucumber, ½ ounce.
- Eggplant, 1 packet.
- Kale or Swiss Chard, ½ ounce.
- Parsley, 1 packet.
- Parsnips, ½ ounce.
- Salsify, 1 ounce.
- Squash, Summer, ½ ounce.
- Squash, Hubbard Type, ½ ounce.

The following vegetables, the specialists say, will undoubtedly be planted in larger amounts than those just mentioned, and the amounts of seed given will be a guide for ordinary requirements. Some families may need more of the various vegetables and others would need less:

- Beet, 4 ounces.
- Cabbage, late, ½ to 1 ounce.
- Corn, sweet, 1 pint.
- Lettuce, 1 ounce.
- Muskmelon, 1 ounce.
- Onion Sets, 2 quarts.
- Peas, Garden, 2 to 4 quarts.
- Radish, 1 to 2 ounces.
- Spinach, ¼ pound in spring and ½ pound in fall.
- Tomatoes, late, ¼ ounce.
- Watermelon, 1 ounce.
- Turnips, ¼ pound.

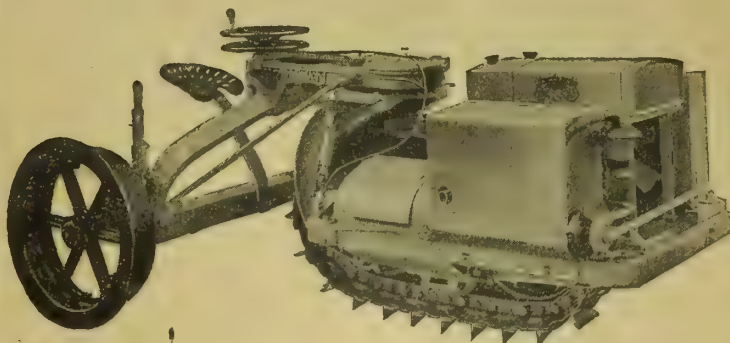
The string beans, bush lima beans, sweet corn, lettuce, peas, and radishes, will not all be planted at one time, but successive plantings two to three weeks apart will be made so as to have a fresh supply throughout the season.

Of early Irish potatoes 1 peck to ½ bushel will be required, and of late potatoes ½ bushel to 1 bushel, or more, depending upon the amount of ground available for this purpose. If possible, enough Irish potatoes should be grown to last throughout the winter.

In the event that the family wishes to raise vegetables to supply current needs and also a surplus for canning, the amounts indicated above should be considerably increased.

The U. S. Department of Agriculture, Washington, D. C., will supply bulletins on application.

The Supreme Tractor for Cultivating



THE

BEAN TrackPULL Six Horse Tractor

Is the Ideal Machine for Cultivating.

Cultivating time is here and every farmer and grower should know about the many advantages of using a Bean TrackPULL Tractor.

The Bean TrackPULL is very light, weighing only 2875 lbs. It pulls itself over soft soil, and does not sink in nor does it pack the soil.

How It Works

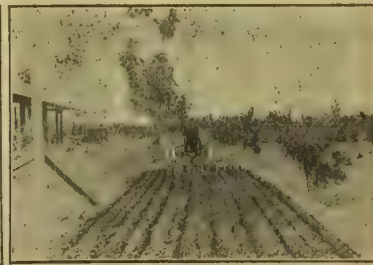
The Bean TrackPULL Tractor is built on a substantial track 12 inches by 32 inches on the ground. The power in the tractor pulls it along its own revolving track. That's why it does not pack the soil—gets long traction—turns easily to right or left—can make a complete turn in a 10 ft. circle, is most economical in operation and a boy can easily work it. When the hot days come your team loafs and you get only an average half-day's work done in 10 hours. The Bean TrackPULL will work day and night if you want it to, and does the work all day long that a six-horse team could do if they worked hard continually.

The Price is Only \$975.00

Bean TrackPULL Tractor construction consists of a 10 H. P. (at belt) Le Roi 4-cylinder vertical type—4-cycle motor. Equipped with Donaldson air clarifier, Bosch ignition, Perflex radiator, water cooled with centrifugal pump and fan, combination splash and pump lubrication, Hyatt roller bearings in track wheel sprocket and track rollers, six New Departure ball bearings in the transmission, running in grease and dust-proof. Gears are steel. No differential or other complicated mechanism.



Making figure 8 around trees and leaving no unfinished work.



Pulling a spring-track cultivator between rows 12½ feet apart.

Prompt Deliveries in April

Our entire output is sold a month in advance and we are working night and day. We are building a large addition to our factory to increase our capacity, so that we will be able to ship tractors that are ordered now, in April.

Mail the Coupon Today

We will gladly send you our folder, telling you more about the Bean TrackPULL Six-horse Tractor if you will fill in and mail to us the coupon below.

Bean Spray Pump Co.

211 West Julian Street
SAN JOSE, CAL.

Los Angeles Branch:
131-33 N. Los Angeles Street

Send coupon to Bean Spray Pump Co. Office nearest you.

BEAN SPRAY PUMP CO.
211 West Julian St., San Jose, Cal.
131-33 N. Los Angeles St., Los Angeles, Cal.

Please send me prices and the big folder with the complete story of the Bean TrackPULL. If I decide to purchase I will need my tractor about

Date 191..
I work acres.
I grow
(Name fruits or vegetables you produce.)
Name
St. or R. F. D.
City
County
State

Mechanical Power on the Farm.

Users of tractors, engines, pumping plants, motor trucks, automobiles, electric motors, and other mechanical farm power are invited to make this department an exchange of their experiences and troubles.

STILL TIME TO PULL STUMPS.

[Written for Pacific Rural Press.]

There is still time to pull stumps economically before the ground dries. Stump land is loafer land except for what grass may grow there. At present prices of farm land, our readers cannot afford to own any on which stumps are preventing its use.

The stump land is often the richest on the farm. It has been accumulating humus from forest leaves for ages—plant food drawn from deep in the ground and laid on top.

Hand power, horse power, and engine power stump pullers are on the market, some of which may be had for several days' free trial. The makers of these will furnish information on just how to use them for different kinds of stumps and different soils. Many farmers will prefer mechanical appliances rather than dynamite on account of the high insurance cost for men using the latter, though it is equally effective if skillfully used.

SHAFT BROKE—LACKED GREASE.

[Written for Pacific Rural Press.]

The main drive shaft 2½ inches in diameter in C. S. Lombard Jr.'s tractor broke for lack of grease. The fast turning bearings had been kept well greased, but he had been told that the slow drive-axle wouldn't need much. So he gave the grease cup a turn every two hours. No jack came with the machine and Mr. Lombard was unable to see if there was

any wear in the bearings until the shaft broke. Then he jacked it up and found the bearings very much worn and the shaft bright. Now he gives the grease cup a full turn every hour. Grease is cheaper than steel. He believes that tractor users ought to examine their main bearings thoroughly every month or so, and tighten them. Otherwise a lot of time will be lost putting in repairs. Mr. Lombard is using his tractor on 50 acres of oranges and 20 of alfalfa in San Bernardino county.

ORCHARD ABOVE PUMP.

To the Editor: What is the best and cheapest method of pumping water to 1½ acres of orchard above the ditch? I have a 2 h.p. gas engine. What sized pump would that drive? The water would have to be lifted 2½ feet from an open ditch which runs through the center of the high place. Would plunger or centrifugal be best, taking prices into consideration?—J. C., Denair.

Your two h.p. engine would lift 800 gallons per minute for your purpose with a centrifugal pump. The difference between cost of the two types is so slight that the time saved with a centrifugal would soon pay its cost. But for 1½ acres, there is scarce need of a greater pump capacity than 250 gallons per minute. This would put three inches' depth of water over your 1½ acres in eight hours.

GROUND ALFALFA BALANCES FEED.

[Written for Pacific Rural Press.]

It will pay every dairyman to grind up every bit of alfalfa hay his cows eat; and 25 to 33½ per cent of alfalfa meal soaked 12 hours and mixed with the grain makes hog fattening cheaper than feeding grain alone, according to J. E. Beerney of Kings county. He uses a No. 9 alfalfa-stover cutter and grain grinder combined, to make his feed more available to the animals. The mill cuts alfalfa into 1 inch long, and drops it into the grain hopper where it is ground about as fine as coarse meal at the rate of 40 bags per hour.

AUTO JOTTINGS.

- Don't speed.
- Don't run on the battery.
- Don't turn corners too rapidly.
- Don't let the clutch in suddenly.
- Don't advance the spark too quickly.
- Don't race the motor when shifting gears.
- Don't use dirty water in your radiator.
- Don't abuse the brakes. Apply them gradually.
- Don't shift into or out of reverse when the car is moving.
- Don't drive fast on wet pavements—the car is liable to skid.
- Don't run the car if you detect some unusual sound—investigate.
- Don't start on a trip without a full gasoline tank and plenty of oil.
- Don't pass street cars while they are taking on or discharging passengers.

REDUCE FUEL COSTS ONE-HALF

FOR FORDS AND ALL OTHER CARS

Start easy in coldest weather! More power and one-half more mileage!

Air Friction Carburetors use cheapest grade gasoline or even half gasoline and half coal oil with excellent results. 250,000 enthusiastic users!

Start your car instantly and move off at once, while motor is cold (even zero weather) with no "spitting," "popping" or "missing." In other words, end your carburetor troubles.

AIR-FRICTION CARBURETORS

Newly perfected model for 1917

If your dealer cannot supply you, write or wire us at once, sending his name and the name and model of your car.

30% off list price—where no representative is already appointed.

Ask us about our 30-day trial offer. Dealers, garages, and repair shops make greater profits and give more satisfaction supplying Air Friction Carburetors, and spark plugs, than on any other accessory they can handle.

THE AIR-FRICTION CARBURETOR CO.
126 MADISON ST.
DAYTON, OHIO

Manufacturers of carburetors for pleasure cars, trucks, tractors, and motor boats

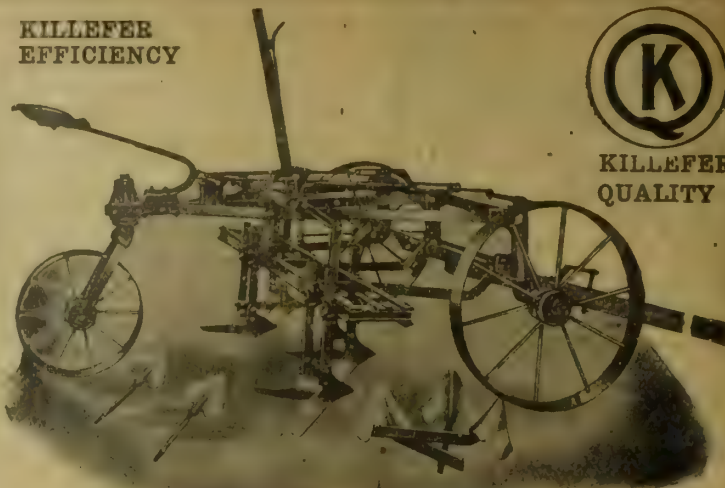


DEALERS: Write or wire for our proposition.

KILLEFER EFFICIENCY



KILLEFER QUALITY



Beet Cultivator

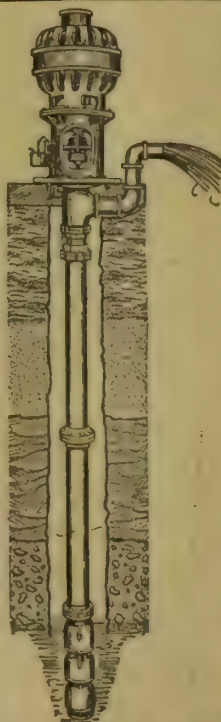
The frame of this Cultivator is made of one continuous piece of high carbon steel with a truss connecting it to the main castings, supporting the two steering wheels. This construction makes a cultivator that is almost impossible to break down in the center and in consequence the wheels are always in line and under easy control.

The lower frame or tooth bar is from the same quality of steel with a strong arm at each end, which connects with the lifting rod, allowing no chance for the frame to dip or run deeper at the ends. The seat is set back far enough to give an unobstructed view of the rows. The foot control of the front wheels is adjustable with a turn-buckle for taking up wear, and is very easy on the operator. A lock is provided for the rear wheel that holds it rigidly in line except on the turns. This is the strongest and best made Beet Cultivator for sale on the Pacific Coast.

The Killefer Manufacturing Co.

2209-21 Santa Fe Ave.

Los Angeles, Cal.

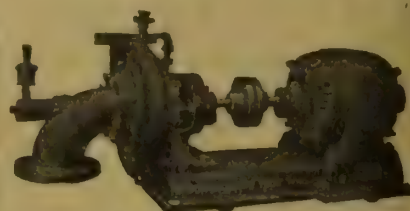


DEEP WELL TURBINES

No valves to pack or plunger to get out of order. For use in any well ten inches in diameter or over.

A complete line of irrigating pumps of all descriptions, horizontal, and vertical for belt drive or direct connection to electric motor.

Prices as low as are consistent with good quality and workmanship.

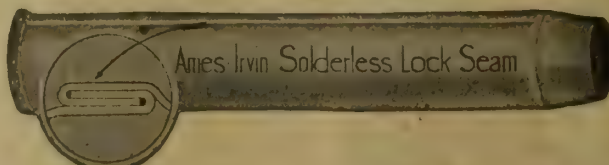


WRITE FOR CATALOGUE NO. 47.

BYRON JACKSON IRON WORKS, Inc.

SAN FRANCISCO.
LOS ANGELES, STOCKTON, VISALIA

What About Your Irrigation Pipe?



Owing to conditions existing in the iron market and also to weather conditions, we suggest you order early

AMES IRVIN IRRIGATION PIPE

We have a complete stock, and can make immediate delivery. AMES IRVIN PIPE is solid and strong, with no holes in steel. Each sheet is edged-locked together, and then set down under 3500 pounds pressure. Such seams will not break or leak.

Send for booklet giving complete information about Irrigation Pipe and its construction. Get it today.

AMES IRVIN COMPANY

8th and Irwin Street,

San Francisco

Signal and pass to the left of another vehicle going in the same direction.

Upon signal from a vehicle in the rear, pull to the right and allow it to pass.

Keep to the right and pass to the right of vehicles going in the opposite direction.

Don't make a practice of running in the car tracks. It is a sure way to ruin a tire.

Don't use dirty gasoline. It is well to strain all the gasoline you put in the tank.

Don't use the brakes too much. Slow down the car by means of the clutch and throttle.

Jack the machine up for winter and save the price of a set of new tires in the spring.

Never stop your machine at the corners when in cities. Never stop in front of a fire plug.

Don't get water into your carburetor or on the magneto gear when washing your car.

Never leave your machine standing in the street with the motor running when there is no one in it.

Tire chains are a safety device of undoubted value, yet remember that they lessen considerably the service life of the tire.

In turning corners to the right, turn as near to the right side of the road or street as possible; in turning to the left, always pass the center of the road before turning.

When a tire is changed, if the dust cap and valve washer are slipped between inner tube and casing, a blow-out is sure to result at the point where washer and cap lay on the tire.

POWER NOTES.

Marketing hogs by auto truck from Livermore Valley reduced the shrinkage to only 15 pounds for the whole load hauled to Oakland recently by H. Wente as reported in the Livermore Herald.

A three-horse power spray rig using distillate and tobacco extract emulsion at 225 pounds is "getting" the thrips in the J. C. Jones orchard in Contra Costa county at the rate of 10 acres per day according to Mgr. R. F. Jackson.

An auto truck is being used by Supervisor Ross of Mendocino county instead of six horses to round up and level the roads. It seems to enjoy the work, says the Mendocino Beacon.

real refinery gasoline

- not a mixture

STANDARD OIL COMPANY
(California)



The KROGH Vertical Pumps



New Type Vertical.

Are automatically water balanced and require no adjustment of any kind. All weights of shafting and rotating parts are carried on the water film absolutely without the use of thrust bearings or adjustment of any kind.

No BALANCE RINGS or PLATES in KROGH PUMPS. They are unnecessary, and mean only continual trouble. KROGH PUMPS with the least number of parts means less friction and greater efficiency. Get our Bulletin No. 78 before deciding on a pump.



Krogh Manufacturing Co.

SAN FRANCISCO. LOS ANGELES.

Electricity for Farm Homes

At one-third cost of juice from Power Company (this includes interest on cost of plant). It is the simplest and most economical plant on the market.

No Batteries - No Switchboard - No Rheostat

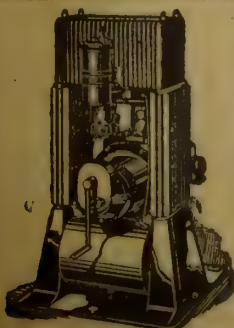
Will operate 50 lights 7 1/2 hours for 11c. Will also operate electric fans, irons, small motors, etc. If your buildings are not wired, send us plans and we will give you full instructions so that you can wire them yourselves. Material furnished at lowest cost.

Karl A. Hedberg

ELECTRICAL ENGINEER.

104 Clay Street,

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Uni-Lectric
GASOLINE-ELECTRIC UNIT
LIGHTING SYSTEM

Layne & Bowler PUMPS

Redbanks Orchard Co.
INCORPORATED

LARGEST PRODUCERS OF HIGH GRADE
TABLE FRUIT IN CALIFORNIA

Visalia, Cal. February 29th 1916.

Layne & Bowler Corporation,
Los Angeles, Cal.

Gentlemen:-

Relative to the LAYNE & BOWLER

DIRECT CONNECTED PUMPS.

We have used six of these Pumps on our Orchards for the periods of one year to five years, and are pleased to say that they have given entire satisfaction.

Yours very truly,

REDBANKS ORCHARD CO.
By H. H. H. Sec.

Write for Catalog No. 25
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900 Santa Fe Ave., Los Angeles.

Get this valuable free book

Do you own an orchard? Or are you going to plant one?

If so, you will find information worth many dollars to you in the Giant TREE BOOK, "Better Orchard Tillage."

This book is written especially for Pacific Coast fruit growers.

It tells how to have thriftier, faster-growing, earlier-bearing trees by planting in beds blasted with



GIANT FARM POWDERS

STUMPING - AGRICULTURAL

It tells also how to secure better drainage and increased moisture-storage capacity in established orchards, and how to get larger yields and save money on fertilizers.

The book contains illustrations that show exactly how to do the work. There are chapters on preparing the beds for trees and increasing the plant food by deep tillage. Also there are directions for blasting in established orchards or groves, and interesting letters from many prominent fruit growers.

Mail the Coupon

Mark and mail the coupon—or a post card—and this valuable book will be sent free. Do it now—before you forget it. Other illustrated books on Stump Blasting, Boulder Blasting, Subsoil Blasting and Ditching, will also be sent on request.

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Home Office: San Francisco

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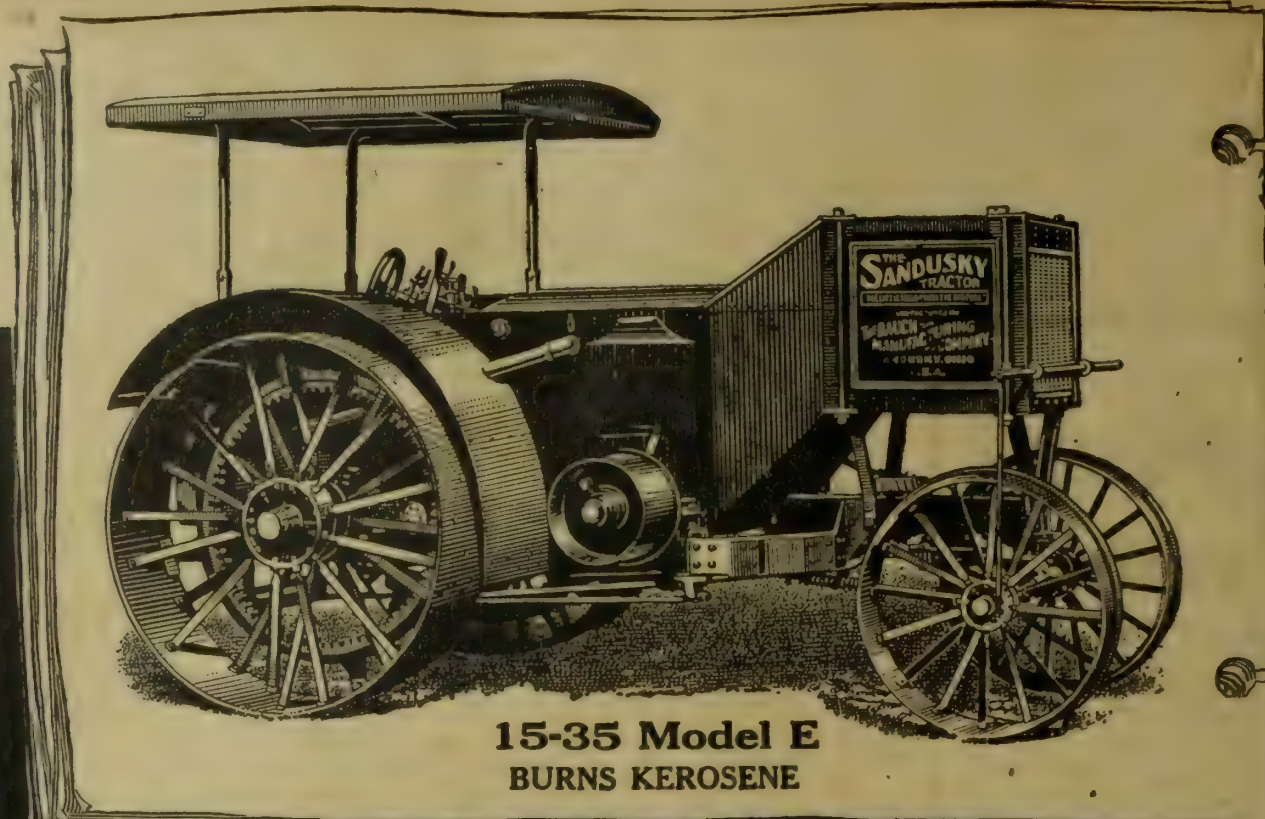
Send me your illustrated books on the subjects which I have marked X.

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Address _____

Write below your dealer's name.



15-35 Model E
BURNS KEROSENE

THE SANDUSKY TRACTOR

"THE LITTLE FELLOW WITH THE BIG PULL"

FOR great power, working flexibility, reliability and durability, the 15-35 Model E Sandusky Tractor stands in a class by itself.

Proof of this is found in the increasing number of farmers who are its enthusiastic endorsers because of results obtained on their farms, and in the growing list of imitators who follow its progress.

Reason for this admitted superiority exists in the engineering skill that designed this tractor, the excellent workmanship that goes into it, and the highest-class materials used in its construction. The completed tractor was tried out by exhaustive tests before it was offered the public, and the result of these tests has been emphatically endorsed by hundreds of users.

Fifteen horse power guaranteed at the drawbar, with $33\frac{1}{3}$ percent reserve; thirty-five at the belt. Direct drive on all heavy duty work, and ease of handling, with its reliability, make it the ideal tractor.

You get *tractor certainty* when you buy a Sandusky, because service and long life are built into it in the first place, and because all the experimental work is done at our expense before you are offered the machine.

And you buy *with certainty* as well. You must

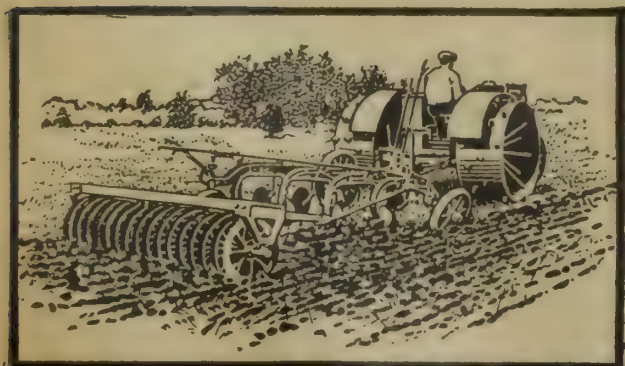
try our tractor on your own farm, doing your own work, before it is yours, and it must convince you by actual service that it is adapted to your needs.

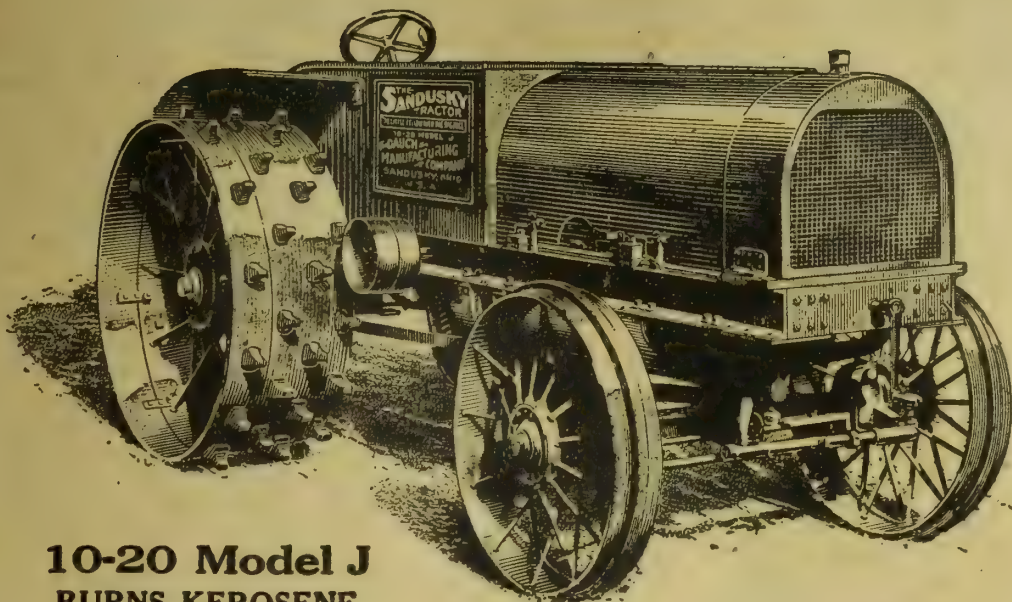
The Sandusky Tractor on your farm will economically do your plowing at the right season; do your harvesting when your crops are ready, disc, harrow, thresh, haul, fill silos, crush rock, shred fodder, saw wood, build roads and do a hundred other tasks that keep it busy for you and your neighbors all the year round, to your great profit and satisfaction.

BOOKE-136 FREE.—A 40-page book which fully describes and illustrates the distinctive design, high grade construction and exceptional ability of the 15-35 Model E Sandusky Tractor. A copy will be mailed you upon request. Be sure to ask for Book E-136

THE DAUCH MFG. COMPANY

A NEW PLAN—FREE SERVICE. We announce an entirely new departure in tractor selling. A coupon book good for 200 hours of service goes with every Model E; a similar book for 100 hours with every Model J. This means expert advice and help without charge when you want it. See catalog for details.





10-20 Model J
BURNS KEROSENE

THE SANDUSKY TRACTOR

"THE LITTLE FELLOW WITH THE BIG PULL"

WHERE the volcano of power presented in our 15-35 Model E is not needed, but where a sturdy, efficient and durable tractor is sought, the 10-20 Model J Sandusky solves the problem.

It isn't because it is lower priced, but because, for the smaller farm, the Model J, pound for pound, is every bit as good a tractor as the Model E.

Highly trained engineers have spent years of study on it; skilled workmen have carefully wrought the best materials into the engineers' designs, and *three years* of constant field development, of careful tests, of hard work under adverse conditions, have thoroughly demonstrated the practicability, the economy and the absolute reliability of the Model J.

Hence it is guaranteed as a profitable servant on the farm, to do your plowing, harrowing, discing, harvesting, threshing, silo filling, fodder shredding, wood sawing, road building, hauling, etc. We show you on your own farm that it will do your work---that it is adapted to your needs---that it is capable, efficient and economical.

Behind it we put a guarantee that means much; the faith of our organization and the standing we have

built up by years of honest dealing. All of these say to you:

"Buy the Model J Sandusky Tractor. It will serve you faithfully, make your farm work more productive, decrease your farm expenses and ease your labor. And it does not cost any more than the good horses it displaces, while its working capacity is so much greater that you will actually make money with it."

BOOK J-135 FREE.—Describes the unique principles of design, construction and performance of this smaller machine. Also gives details of our "Try It Before You Buy" sales policy, and our broad, binding guarantee. Be sure to ask for Book J-135

SANDUSKY, OHIO, U. S. A.

The Sandusky Tractors—both Models—are ready for inspection at and delivery from our principal Factory Branches and Service Stations at Indianapolis, Ind.; Bloomington, Ill.; Milwaukee, Wis.; Lewistown, Mont.; Minot, N. Dak.; Fargo, N. Dak.; Sioux City, Iowa; Lincoln Nebr.; Wichita, Kans.; Dallas, Texas; Leesburg, Fla.; Los Angeles, Cal.; Sacramento, Cal.



The Origin and Present Status of the Shorthorn.

[Written for Pacific Rural Press.]

THE student of Shorthorn history and pedigrees is faced with a greater preponderance of strange names and occurrences than in the study of most other breeds of livestock, for the reason that its early and much of its latter-day history was made in foreign countries.

"Teeswater" and "Durham" were the terms first applied to these cattle, because they originated in the Tees river valley in the shire of Durham, England. While both these names have long since been discarded officially, there are still many farmers who know them as "Durhams." Their original appearance is explained by one writer as being "White with brown ears and muzzles, supposed to be a cross between cattle brought from the continent of Europe and the native white cattle of Europe." Being a cross breed, mating of red to red or white to white for a number of crosses invariably deteriorates the size and quality, while a perpetuation of these characters is maintained when red is mated with white or vice versa, the result usually being a roan. To this admixture of colors the breed owes the name "The Red, White and Roan."

Range beef growers early formed a preference for the red Shorthorn, forcing breeders who depended upon their trade to cater to this color, which had a disastrous effect upon the breed later. While this has now been largely overcome, it is not unusual to see range cattle growers mistake white Shorthorns for some new breed.

The Bates Theory.

So far as present-day interest is concerned, no mention need be made of breeders or individual animals till 1800, when Thomas Bates of Northumberland, England, purchased his first Shorthorns. He is described as having been a close follower of pedigree on the theory that animals bred along certain lines almost invariably produce desired results when mated. He believed in the dual-purpose Shorthorn, developing the milking as well as beef-making qualities, scoring perhaps his most spectacular success in New York in 1873, when a cow of his Duchess tribe sold for \$40,600.

Inbreeding, with only occasional outcrosses, is characterized by some as being a main fault of Bates. Imitators sprang up in both America and England, after his Duchess family was dispersed, but by injudicious management this family finally became extinct. Other notable tribes were originated by Bates.

The Booth Brothers.

Contemporaries of Bates were the Booth Brothers, whose special aim was to produce an early maturing animal, chiefly of worth for beef-making. While some Booth cows showed dairy capacity they soon "dried off" and put on flesh rapidly. A dash of this Booth breeding was given most American herds with the idea of increasing the size of the Bates cattle, and is still found in most herds of long standing. The Booths secured many of their best cattle from the Blossom, Bright Eyes, Isabella and Booth Red Rose tribes.

The Booth-bred cattle, like those of Thomas Bates, suffered from speculative "trafficking" in pedigrees by a mercenary class of men who had little regard for the breed. As a result many of the "warm-blooded" ones, fashionably so-called, went to rich fanciers instead of to constructive breeders. The result of this was the decline of the Shorthorn (about 1878) in favor of Herefords and Aberdeen Angus, whose breeders had realized the necessity of feeding capacity and substance rather than stylish breeding. Favor for these two breeds was particularly strong among west-

tern feeders and stock-yard buyers, who, after all, determine a breed's worth.

Scotch Cattle.

The next great step in Shorthorn development came from this range demand for something more than a pedigree, and, strange enough, it was the period during which another British Isle reputation was made. This time fortune reached out into the mountains of Scotland, where a settlement of Scotchmen, mostly tenants, had been developing Shorthorn cattle as beef and

ionable blood lines. Thus began world-wide recognition of the Scotch Shorthorn for beef-making purposes.

Alvin H. Sanders ("History of Short-Horn Cattle") characterizes the Cruickshank ideal as having a broad, full chest, wide back and deep ribs, demanding first of all "a good middle" on the theory that good constitution and digestive capacity present their manifestations in body rather than in the extremities.

Scotch Shorthorns in the United States.

Importation of these cattle to America began in 1857, when some thirty head were brought from the Cruickshank establishment. They did not meet with popular approval because of the Bates craze, which was run at its height, but when the popularity of the breed began to wane it was these Scotch cattle that came to the rescue. Canadians had already begun to appreciate them and considerable importing was done there also. Show ring success as well as approval from beef-growers quickly placed these thick-meated, short-legged Scotch types in an enviable position from which they never receded, and to which the present popularity of the breed is largely due.

During the close of the nineteenth century heavy importations were made and Bates and Booth breeding was superseded by Cruickshank blood as fast as liquidation was possible. Notable among these importations was the cow Bapton Pearl, imported in 1900 from England.

She only produced one calf after arriving in this country, but that one calf, Whitehall Sultan, proved one of the greatest sires of the breed. He sired among other great bulls, Avondale, Whitehall Marshall and Sultan Stamp, all great show winners and sires, besides a great number of animals of lesser reputation. His progeny's tribes are more generally used on American herds than any other breeding. Others that have done much for the breed are notably Choice Goods, Cumberlands, Archers and Xingmasters.

Whether we are again nearing the danger line with Shorthorns, by placing a premium on "straight" Scotch breeding over what are now termed the "commoner sorts," is an open question.

Both show ring and auction sale emphasize the superior popularity of the low, thick-set Shorthorn, the "plainer sorts" finding it impossible to compete in the sales ring with their more aristocratically bred barn mates. Time alone can tell which of the two will ultimately win out.

California's Experience with Shorthorns.

California, like other States, had its Shorthorn ups and downs. Cattle strong in the blood of both the Bates and Booth tribes formed the basis of the early-day herds, although it has been gradually reduced by top crosses of straight Scotch-bred herd sires. It is significant in this connection that those herds which have maintained a foremost place have been headed by straight Scotch-bred bulls. Notable among these are the Glide, Gibson, and Howard (now part of Paicines) herds. The Red Knight, Lancasters, Choice Goods and Archer families have played no inconsequential part in adding to the merit of these herds and have found favor with range users. That favor leans toward Scotch breeding with more recently established herds is shown by the Avondale and Cumberland bulls in the Hawkins band of cows, the descendants of Ringmaster on the Hopland herd, the prevalence of Choice Goods and other straight Scotch in the Ormondale foundation, and the Scotch foundation in the Paicines, Barco and Carruthers herds.



First Prize 2-year-old, Senior Champion and Reserve G. C. Cow, Cal. State Fair, 1916. Sired by Musicmaster, by Ringmaster, and traces to Choice Goods on dam's side. Red Heifer, owned by A. W. Foster.



Barco Duchess, G. Ch. Shorthorn Heifer. Sacramento, 1916. Barco Ranch, Hollister.



Count Glory, G. Ch. State Fair 1916. Traces back to Avondale. Owned by W. M. Carruthers.

milk producers, regardless of color fads or fastidious pedigrees. Individual merit was their motto, and while they were frowned on by adherents of Bates, who termed their cattle "cold blooded," they were unmoved by outside criticism. These mountain breeders were content with profitable cattle, till one of their number, Amos Cruickshank, invaded the show yard, competing with English herds of the then more fash-

Remco Redwood

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In all sizes, from two inches to fourteen feet. Built for all pressures, with a guarantee of 100 per cent overhead.

Valves, Fittings, Risers and Reducers furnished to fit each size pipe.

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In all sizes
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Equipped with covers and discharge gates if desired.

Towers, furnished to hold any size tank.

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Sizes
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20 by 40 feet

Shipped complete ready to erect. No extra charges.

Blue prints of proper foundations and erection instructions furnished free.

ALL MADE FROM CLEAR AIR-DRIED REDWOOD, SEASONED IN OUR OWN PLANT; DESIGNED BY OUR ENGINEERS; MANUFACTURED BY SKILLED MECHANICS USING LATEST AND FINEST MACHINERY. EVERY PIPE, TANK AND SILO GUARANTEED TO BE OUR OWN MANUFACTURE. OUR BIG ORGANIZATION OF EXPERTS AND ENGINEERS IS AT YOUR SERVICE, FREE OF CHARGE, FOR ADVICE OR PLANS.

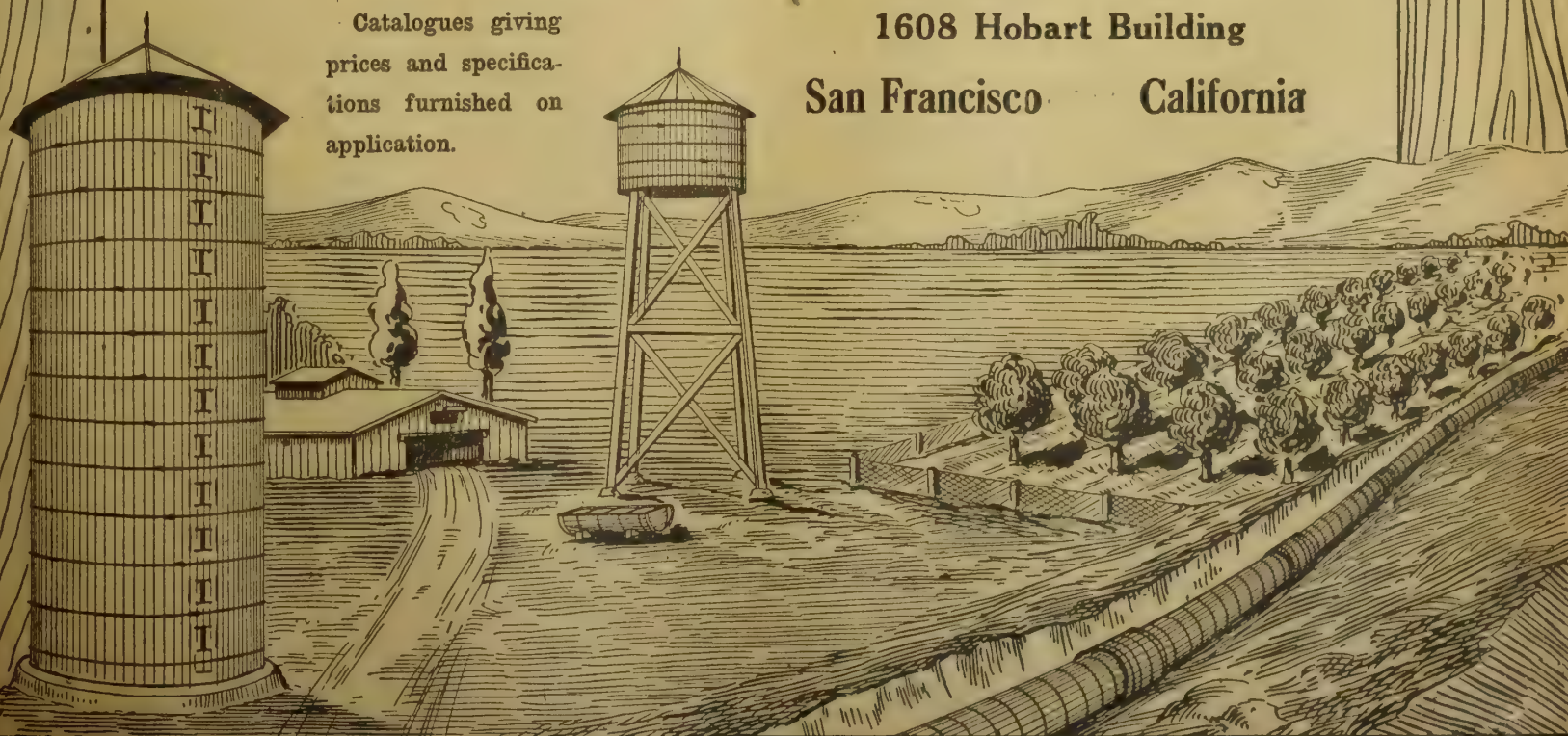
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REDWOOD
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Raising the Price of Market Milk.

[Written for Pacific Rural Press.]

By producing clean milk from healthy cows and letting their customers know it, Bohnett Bros. raised their prices to consumers and held their trade.

Although consumers are ever demanding better sanitation on market milk dairies, the large majority of them are unwilling to pay anything additional for such milk. This is particularly true in smaller towns and cities where the price per quart of milk per month is usually 20 to 35 per cent less than in larger cities.

That a good frank discussion of clean milk, its cost of production, and why the producer should receive more money for it may often aid the producer supplying milk to country towns in raising his prices is evidenced by the experience of Bohnett Bros., who supply milk to the retail trade of Campbell, Santa Clara county.

While their herd is comparatively small, they have taken every precaution toward the production of clean milk, succeeding well, as indicated by the fact that their bacteria count is held around the 10,000 per c.c. mark. This of course entailed additional expense for labor, equipment, supplies, etc., but they were selling their product for \$2.50 a quart a month, the same price as was received by less careful competitors.

Realizing that they must increase the price and at the same time retain their trade, they issued a neat circular which they were careful to place in the hands of every customer. The logic of their argument as set forth in the following not only allowed them to raise their prices, but held their trade also, only two customers quitting because of the higher prices.

Did you ever stop to consider the difference between GOOD MILK and just milk? Not necessarily only the difference in price, but also the difference in real value.

Is it worth anything to you to know when you get a quart of milk that it has not been contaminated by dirty cow hair, foul air from the stable, or disease-carrying flies?

Is it worth anything to feel assured that when baby takes a drink of milk, she will not contract that dreaded disease, tuberculosis, from some tubercular cow?

Is it worth anything to you to know that when little George or Helen takes a drink of milk that it is out of a bottle that has been thoroughly sterilized since Mr. Jones, who has had diphtheria, has had it in his home?

Is it worth anything to you to know when you put a bottle of milk on the table that Fido or Fluffy has not already tasted the cream on top that has leaped through around the cap?

If these suggestions do not interest you, burn this paper and phone us to stop your milk today. But if they do interest you, notice the methods we use.

(1) Our cows are kept in corrals where the manure is never allowed to accumulate for more than 48 hours and are furnished plenty of clean bedding in winter that they may rest contentedly under shelter between milkings.

(2) Our herd is tuberculin-tested every six months that we may be sure we are not endangering any innocent baby's health by sending out milk from tubercular cows.

(3) The hind quarters and udders of our cows are kept clipped so there will be no chance for the accumulation of manure and other foul mat-

ter on their flanks, etc.

(4) In preparing the cows for milking we first go over them with a wet sponge to remove the dust and loose hair, then we thoroughly wash and dry the udder with a clean cloth.

(5) We then milk with a Mechanical Milker which draws the milk directly from the udder into a closed pail, giving no chance for contamination from flies, dust, etc.

(6) Each cow's milk is carried directly to the milk house and run over the cooler, which drops the temperature to a low degree, thus checking the bacteria growth.

(7) As soon as cooled the milk is bottled with a patent bottler and immediately sealed with San Lac seals, which prevent any possible contamination of the milk from the time it leaves our milk house till it is opened on your table.

(8) Last but not least, is the fact that all of our bottles and utensils are thoroughly washed and rinsed in hot water and then exposed to live steam under pressure for at least 20 minutes before each filling.

Now, with an idea of the amount of labor and expensive equipment it takes to produce our milk, please take into consideration the fact that all the food stuffs we use for our cattle have gone up 20 to 100 per cent the last year (when we have figures to show that we barely made laborers' wages for the time we put in).

It is not our aim to make the dairy a get-rich-quick proposition, but we do maintain that we are entitled to a fair compensation for our labor. By actual accounts, which we have kept, we find the feed expense of the dairy business just a trifle more than half of the total cost of production and marketing milk.

With these facts before you can you see any logical reason why we should not receive the following prices for our milk?

One pint per day, one delivery, \$1.50 per month.

One quart per day, one delivery, \$3.00 per month.

One quart per day, two deliveries, \$3.25 per month.

Three pints per day, one delivery, \$4.25 per month.

Three pints per day, two deliveries, \$4.50 per month.

Two quarts per day, one delivery, \$5.50 per month.

Two quarts per day, two deliveries, \$6.00 per month.

Three quarts per day, one delivery, \$8.00 per month.

Three quarts per day, two deliveries, \$8.50 per month.

Special prices on larger amounts.

Many other known facts regarding the value of pure whole milk as a foodstuff were then set forth in the circular under the heading, "A Few More Interesting Facts About Milk," and a paragraph was inserted stating that the new prices would go into effect on a certain date.

SQUEEZER FOR CALF BRANDING.

[Written for Pacific Rural Press.]

Instead of wearing out horses as well as men at branding time on the Stanford University's ranch near Durham, Butte county, a home-made calf squeezer is used that makes possible the branding, marking, and castrating of 300 calves a day with the help of about four men.

This squeezer is made as a continuation of the chute through which the calves are driven from the corral. The frame work of the squeezer is made with 2x6 plank, set upright in a slanting position. Slats made of two-by-three's are nailed onto the frame-work, giving the



sharp turn; thus the cream is extracted more thoroughly. This bowl is also remarkably long—milk travels further while the intense skimming force is working on it. But its greatest feature is that it will skim clean regardless of how fast or slow you turn it.

SHARPLES SUCTION-FEED CREAM SEPARATOR

is the *only* separator that:

- skims clean at widely-varying speeds
- gives the same thickness cream regardless of speed changes
- skims your milk quicker when you turn faster
- has only *one* piece in the bowl—no discs, easy to clean
- has knee-low supply tank and once-a-month oiling

Sharples varies the feed in direct proportion to the separating force, and thus insures clean skimming at all speeds—needs no watching. It's positive protection against cream loss. All fixed-feed separators lose considerable cream when turned below speed—and 19 out of 20 people do turn too slow. A Sharples will average 5% more cream than any other separator just for this reason.

Write for catalog today; address Department 31.

The Sharples Separator Co.

West Chester Pa.

Sharples Milkers—used on over 300,000 cows daily

Branches: Chicago San Francisco Toronto



frame's sides a fence-like appearance.

The frame-work of both sides is hinged at the bottom so that when the calf is in a standing position one side may be pushed in by a workman and the calf is securely held in an upright position.

The entire device is hinged on one side to an old wagon axle which allows it to be pushed still further over so that the calf is lying on its side at a height of about two feet from the ground. The entire device is operated in a similar manner to the veterinarian's operating table except that it holds the calf in position by squeezing instead of with ropes and chains. Castrating, marking, and branding are all done at the same time, one man attending to each task as the calf lies on the table or rack. Usually this work is done about the first of May when the round-up is held.

The recent Automobile Show at San Francisco has led to the decision to hold a motor truck show at Exposition Auditorium April 3 to 7. About a dozen firms have signed up



Raise Your Calves on Blatchford's Calf Meal and Sell the Milk

More calves have been raised on Blatchford's Calf Meal than on all other milk substitutes combined.

100 lbs. makes 100 gallons of milk substitute, costing only one-third as much as milk.

Prevents scouring and insures the early maturity of sleek, handsome calves.

It is steam-cooked and no trouble to prepare or use.

Write for Pamphlet "How to Raise Calves Cheaply and Successfully with Little or No Milk." At dealers, or Coulson Poultry & Stock Food Co., Inc., Petaluma.

to show about 50 machines. This is the opportunity for our readers to see them all together.

During the past three years the State Motor Vehicle Dept. has turned over \$4,977,012.02 to the State and counties for use on the roads.

Cow Testing at Minimum Cost.

[Written for Pacific Rural Press.]

The Bodega Cow Testing Ass'n boasts of having the lowest charge per cow of any association in the State, their charge straight through, regardless of the size of herd, being \$0.85 per cow per year during the time the association has been operating.

There seem to be two reasons for the successful operation of the association on this basis: First, the herds are large as a rule, the average in the association containing 45 cows; and second, all of the members are good pay, avoiding the bad bills that must be paid by those who meet their obligations promptly.

But this rate is not set as a flat guarantee to prospective members, for the association is run on an assessment basis. These assessments are made as needed to cover the entire cost of the testing; and may be made either monthly or less often as required. In this way there is little surplus in the treasury at any time; but as the officers of the association are thoroughly reliable, the credit of the association is good at all times.

The association was started about two and a half years ago with 1,100 cows. Necessary equipment was bought for the tester, they furnished him transportation from one ranch to the other, and paid him a monthly wage of \$65 and found.

The second year testing was not done under the supervision of the association, partly because some dairymen had the erroneous idea that one year's work was sufficient to tell the good cows from the bad, and partly because when the second

year was to have started, the leaders in the association were unable to devote time to "rounding them up," as one man expressed it.

But some of the members saw the need of continual testing and had their testing done regularly each month by a man in the community who understood the work, using the equipment of the association for such work.

By the end of the second year these few dairymen were determined to re-organize the association; and after a few days' work 1,100 cows were again signed up, this time the tester receiving the same monthly salary but furnishing his own rig.

According to J. R. Gallagher, who is president of the association, there is a disposition on the part of many members to pay too little attention to their record books. He relates an instance on his own ranch where a workman told him to be sure and cull out a certain cow "because she was giving such a small amount of milk."

Before following the advice Mr. Gallagher consulted his book and found that the cow had produced 265 pounds of fat during her last lactation period. The workman had forgotten that while she was a light milker she was persistent, and that her test was high. That is exactly the reason that some members of cow testing associations do not appreciate cow testing records, to Mr. Gallagher's mind; they do not study their books; and therefore know very little more about their cows than if they had no such records.

Milo Silage Reduced Milk.

[Written for Pacific Rural Press.]

Many times the breeder of pure-bred dairy cattle who is doing official testing discovers facts about feeds and feeding which do not coincide with popular belief on the same subject, such an example is shown by the experience of the J. S. Gibson Co., Holstein breeders of Colusa county, in regard to silage.

In previous years Indian corn silage had been fed to both young and old cattle with excellent results, but owing to the fact that milo maize could be grown more economically, only one of the three silos on the place was filled with Indian corn last fall, milo being used in the other two.

When feeding of the milo was started the young cattle seemed to relish it and also began putting on flesh, a satisfying condition where official testing is to follow freshening. The fresh cows also cleaned up the milo and kept in

fine condition, but a falling off of about 5 per cent in their milk flow was soon noticed, and was not overcome till the ration was changed.

Thinking that the difficulty might be overcome with the heifers and with dry cows, the milo silage ration was continued with them. Not only did they put on fat, but it seemed to be a soft fat as well, something every experienced feeder likes to see his cows possess before freshening, on the theory that soft fat milks off while hard fat does not.

But despite a change from the milo silage after freshening, none of the cows did as well as was expected of them, it being impossible to milk the fat off.

This led Gion Gibson, manager of the herd, to believe that milo silage is not as good a feed for dairy cows as Indian corn silage, at least when it produces as much as 30 sacks of grain to the acre, as his did last year.

Alfalfa Silage or Meal?

To the Editor: Is silage or alfalfa meal best to feed milk cows? I have no land on which to raise corn for silage and would have to fill the silo with alfalfa. I cut three or four crops of alfalfa per season. In partnership with a neighbor, I own a feed cutter and silo filler; and for \$50 can get a grinder for alfalfa meal. Would have some to sell and then use rolled barley and some rough feed. I thought this better and less expensive than alfalfa hay and alfalfa silage.—R. M. C., Mid-

dletown.

The only advantage of siloing alfalfa is to get succulence for dry periods, or to save a weedy crop or one that would not cure well on account of weather. Considerable care is necessary to make good silage from alfalfa. Grinding it to meal avoids waste of alfalfa hay in feeding; and barley will balance it in the ration.



DE LAVAL

The First, the Best Known
and the Greatest

CREAM SEPARATOR

Better Now Than Ever Before

THE first practical continuous cream separator, the De Laval, has easily maintained its original success and leadership for nearly forty years. Step by step, year after year, by one improvement after another, the De Laval has led in every single step of cream separator development and improvement.

The first belt driven, the first steam turbine driven, the first of every kind of hand turnable, the first disc bowl, the first blade bowl, the first bottom or suction feed, the first split-wing feed, the first feed-through-the-discs, the first self-centering bowl, the first automatically oiled—all these and a hundred other features of separator development and improvement have been conceived by De Laval inventors and perfected by the De Laval Company, most of them to be cast aside for something still better in the ever onward advance of De Laval construction.

The New 1917 De Laval

And now, in the De Laval machines for 1917, a number of new and still further improvements have been made, which make the De Laval machines of today much better in many respects than they have ever been before.

Their capacities are greater per dollar of cost; they skim cleaner under the more difficult conditions of separator use; they are equipped with the most improved speed regulator, thus insuring the proper speed necessary for complete separation; they are even better lubricated, and the bowl construction is even more sanitary than ever.

In other words, superior as the De Laval machines have always been to all would-be competitors and utilizers of abandoned De Laval features, the De Laval machines of 1917 are improved and superior in every way to all previous types and models of De Laval construction.

All these improvements and new features are described and explained in the new 1917 De Laval catalog now ready for mailing, but some of them are difficult to describe and make fully understood by words.

Be Sure to See a New De Laval

The new De Laval machines themselves best explain their new and superior features, and their use does this more completely and convincingly than even an examination of them. Every local agent is glad to afford opportunity for examination, and better still, for home test of a new De Laval machine.

But the demand for the new machines is a month ahead of the possible supply under the present difficult conditions of manufacture and freight distribution. More De Laval machines by half have been made in 1917 than ever before, but the De Laval Works is now ten thousand machines behind actual orders, and the demand is ever increasing.

Hence, the importance of securing a machine quickly if your local dealer happens to have one, and of ordering well ahead if he does not. And likewise, the importance of waiting patiently a little for a machine if need be.

A new De Laval catalog will be gladly sent on request, and if you don't know your nearest local agent please simply address the nearest De Laval main office as below.

DE LAVAL DAIRY SUPPLY CO.

LARGEST DAIRY SUPPLY HOUSE ON THE PACIFIC COAST.
We specialize in Alpha Gasoline and Distillate Engines, Ideal Green Feed Silos, Irrigation Equipment, Centrifugal and Deep Well Pumps and Alpha Spraying Outfits. Send for special catalog.

101 DRUMM STREET, SAN FRANCISCO

50,000 BRANCHES AND LOCAL AGENCIES THE WORLD OVER

H. B. THORNBERRY

Dealer in

JACKS, JENNETS

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Gaited Kentucky Saddle Horses
Largest Importer in the United States.
P. O. Box 679, Stockton, Cal.

TAMWORTHS

(The Bacon Hog)

Largest Herd in the State

DUROC - JERSEYS

Mature Stock and Weanlings of both sexes. Sure to please.
SWINELAND FARM,
W. O. Pearson, Prop. Woodland, Cal.

BLACK

Percheron Stallion

9 Years old. Weight 1900 lbs.
Broken to Harness.
Sound.

A Good Breeder.

PRICE, \$350.

For further particulars, address

HENRY WHEATLEY
NAPA, CAL.

Live Stock and Dairy Notes.

[Livestock breeders all over the State are invited to send on postal cards, notes regarding their sales, State and County Fair intentions, new stock, etc.]

DAIRYING.

Livermore farmers recently debated at a Farm Bureau meeting whether it would pay to keep a cow.

The feeding of powdered milk to cows on test is not allowable under a recent ruling of Supt. M. H. Gardner of the Holstein Advanced Register.

A. W. Morris Sons of Woodland report Aagie Acme of Riverside 2nd's 120-day record of 529.34 pounds butter and 10,424.5 pounds milk. She is expected to exceed 100 pounds fat in March.

The Holstein record for fat production in 30 days in the senior two-year class has been broken by Al-lamuchy Korndyke Rose, owned in New Jersey. The record is 2242 pounds milk containing 97.22 pounds fat.

Of the 102 entries of cows and heifers in the Ayrshire Advanced Registry during the quarter ending Mar. 15, 1917, the average production was 10,587 pounds milk and 420.87 pounds fat. The average test was 3.98. This is an advance in both fat and milk.

S. W. Cheyney of the Rio Seco ranch near Chico is putting up a cement "stave" silo. The "staves" are 10 inches wide, 30 inches high, and 2½ inches thick. They are set inside of hoops and pulled tight. Then three or four coats of special cement wash are applied. This is a new type of silo in California.

The Farmers' Protective League is against the bill which provides for branding of all reactors to the tuberculin test, because "neither dairyman nor butcher would buy such an animal." Evidently an unrestricted sale of tubercular animals to ignorant buyers is desired. However, the League stands for remuneration to owners for destruction of tubercular cattle.

BEEF CATTLE.

Three cars of corral-fed steers were recently sold at Porterville to a Los Angeles packer at \$10 per cwt.

The Hopland Stock Farm reports the sale of three registered Shorthorn bulls to the Wm. McGrath Co. of Santa Cruz county. The latter company will use them on their range herd of beef cattle.

A liberal purchaser at the foremost Shorthorn auction sales in the East during the past month has been T. T. Miller of Los Angeles, who is establishing a purebred herd on his ranch in Imperial county.

Feed in the mountains of San Benito county is reported as being scarce but of good quality, the heavy and continual frosts having held back most of the grasses. Alfalfa is said to be short and wild oats are scarce.

T. S. Glide is rounding out a fine lot of young Shorthorns this spring, having a notably fine collection of young heifers and bulls. The bull Count Amaranth, which he purchased in Oregon last winter, is doing nicely and holds out great promise for the future.

The Elder Creek Ranch of Tehama county has just received an importation of registered Shorthorns from Middle Western States. Included in the lot are 12 registered heifers coming three years old and eight purebred bulls. All but one of the bulls will be used on the band of high-grade range cows which are maintained on the ranch, the other one being reserved for the purebred cows.

SWINE.

The Tulare County Duroc Jersey Hog Breeders' Ass'n has been formed with the following officers: Allen Thompson of Farmersville, presi-

dent; J. L. Dickinson of Visalia, vice president; and F. L. Daly of Visalia, secretary.

C. B. Cunningham, president of the California Swine Breeders' Association, will give a Chester White pig, valued at \$50, for the best exhibit of Chester Whites at the Third Annual Butte County Spring Exposition to be held in Chico May 21 to 26, inclusive.

Dr. T. B. Spalding has made sales as follows: boar to R. Scott, Selma; sow and pigs to L. E. Alderson, Denair; four sow pigs to Hughson Boys' Club; boar to Mrs. Ella Maze, Modesto; boar to A. J. Williams, Pilot Hill; boar to A. A. Channell, Fresno; and two sows with pigs to Geo. A. Wingert, Turlock.

R. H. Whitten of Los Angeles has recently bought the three-year Poland China boar Big Long Jumbo in Nebraska for \$500. This boar has weighed 1050 pounds. His sire weighed 1050 and his dam 920 pounds. Gilts sired by this boar recently averaged \$175 and sows bred to him averaged \$250. This gives Mr. Whitten five herd boars.

GIBSON HOLSTEINS BEING DEVELOPED.

Ever since the Holstein cow Winnie Korndyke Cornucopia De Kol broke the Pacific Coast record for yearly production of butterfat and fell just short of breaking the world's record for the production of milk, Holstein circles have had their eyes on the herd owned by the J. S. Gibson Co. at Williams, Colusa county, realizing that some of the best foundation cattle to be found have been assembled by Mr. Gibson, manager of the company.

While no spectacular records have been made during the winter months, a number of creditable seven-day records have been made and 5 cows are on yearly test.

Among the latter are six heifers, sired by the company's herd sire Prince Alcartra Korndyke, a son of Tilly Alcartra; and it will be gratifying to those interested in this breeding to learn that these heifers averaged 18 pounds of butter in their seven-day tests and are proving period.

New test-and calf-barns are among the recent improvements on the ranch; and with these advantages and the class of cattle being bred, it may be expected that the Gibson Co. will be an influencing factor in the future of the Holstein breed on the Coast.

SAN LUIS OBISPO DAIRYMEN BUY CARLOAD OF HOLSTEINS.

A carload of 11 registered Holstein bulls 8 to 14 months old, and 15 registered heifers, 13 of which are in calf to A. R. O. bulls, were recently bought by President A. B. Spooner of the San Luis Obispo County Dairymen's Ass'n for the following members: Joseph Dalesi, Berros; W. D. Wimmer, Pozo; Peter Tognazzini, Cayucos; George Ross, Edna; C. S. Pike, Paso Robles; and Karl Steiner, James McMillan, John Walters, Joe Barlogio, Ben Patchett, H. M. Warden, Otto Sinsheimer, Manuel Garcia, M. D. Tognazzini, Valerio Tognazzini, A. B. Spooner & Sons, of San Luis Obispo. The animals carry some of the best breeding in the country and all the heifers are out of A. R. O. dams. Mr. Spooner has a son of Prince Gelsche Walker purchased a year ago from Morris & Sons, which he will use on the three heifers which he purchased.

STATE DAIRY COW COMPETITION

On this March 27, there comes to us by special delivery a complete report of the records made in the State Dairy Cow Competition last Feb-

ruary. Sometimes news gets old. We regard these reports as of great interest to our readers, but we can mention only a few high points this time. Total entries to date, 229 cows. Average production for February (166 cows), 1300.3 pounds milk, 49.081 pounds butterfat. Range 94.4-21.6 pounds. One hundred and thirty cows produced over 40 pounds fat, as against 75 in January and 57 in December. This is encouraging.

K. W. Abbott, proprietor of Moorland Farm at Milpitas, informs us that his Holstein cow Mabel Haskins Colantha Girl Jr. is entered in the California State Dairy Cow Competition.

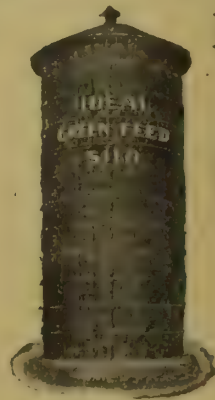
The Lewis Co. have recently com-

pleted a number of seven-day tests with their registered Holsteins near Agnews, Santa Clara county.

PUREBRED HEREFORD SALE.

The first public sale of registered Hereford cattle to be held in California will take place at Mayfield on the D. O. Lively Stock Farm May 3. This offering is made up of especially selected, richly bred, Western raised Herefords. The predominance of females in the sale gives an opportunity for picking out animals with which to start a purebred herd. Everyone interested in the cattle industry is invited to attend.

University Farm Picnic and Show Day will be April 28.



Borrow Money at 6% and make 30% with an

Ideal Green Feed Silo

Now is the time to place your order for an Ideal Green Feed Silo. Put that first crop of alfalfa into it. It won't make good hay, but the alfalfa, foxtail and weeds will make excellent silage. Have silage to feed this summer when green feed is gone. You can thus increase your milk profits and reduce feeding costs during the coming dry season. The silo will be empty in time to fill with corn this fall for winter feeding.

Refrigerator Type Doors; Air and Water Tight Foundation Joint; Proper Design; Selected Materials and Painsstaking Workmanship make the Ideal Green Feed Silo a Safe, Profitable Investment for the Dairyman or Stock Raiser. Send for Catalog.

Acme Feed Cutter and Silo Filler

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All Steel Frame
Positively Safety Device

Low Feed Table
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Rigid Construction
Light Running
Easy to Handle

EQUIPPED WITH ALFALFA MEAL MAKING ATTACHMENT.

An excellent quality of alfalfa meal can be produced on this machine at a cost not exceeding half of that for baling.

Save \$3.00 Per Ton on Dry Feed.

Run it through an Acme Feed Cutter so that the coarse hay as well as the fine will be entirely consumed by your cattle.

Catalog on request.
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Everything for the Dairy.

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SAN FRANCISCO, CALIF.

Globe A-1 Cottonseed Meal & Nut Cake

45% Protein and Fats

ONE TON COTTONSEED MEAL replaces corn and hay values of \$102.24 at present prices. One feeder obtained equal results by feeding on the basis of 1 LB. OF COTTONSEED MEAL IN PLACE OF 137 lbs. corn, and 1.41 lbs. clover hay.

Analysis value cottonseed meal manure today \$38.63 per ton. Mature Stock fed cottonseed meal will deposit 50 to 90 per cent of this on your land. Oat and corn manure will return only about one-fourth as much to the land as cottonseed meal.

If you wish to make these profits feed A-1 Cottonseed Meal and Bran to dairy cows. Fatten Beef Cattle and Sheep on A-1 Cottonseed Cake. Feed your work Horses and Mules Cottonseed Meal with bran or rolled barley. Poultry—Get our mash formula for Laying Hens. Write for circular. Buy from nearest dealer, or send us his name if not on sale.

SOLD BY **GLOBE MILLS** LOS ANGELES
San Francisco, Colton, San Diego, Portland, Salt Lake

D. O. LIVELY STOCK FARM'S

FIRST ANNUAL SALE OF

Registered Hereford Cattle

will be held at Mayfield, California, Thursday, May 3, 1917.

The offering will be made up of sixty-five head—twenty bulls and forty-five females. Among the best Hereford strains represented. All Western bred. A splendid opportunity to start a pure-bred herd. Write for catalogue.

D. O. LIVELY STOCK FARM, INC.,
215 Hobart Bldg., San Francisco

REAL Holstein Quality

If you are in the market for a young bull that will improve the type and production of your herd, let us quote you a son of one of the following proven sires—

SEGIS PONTIAC DE KOL BURKE—Grand Champion State Fair 1916. His sire and dam both Grand Champions. His dams record of 124.5 pounds milk a day average for thirty days is the second highest in the world. And best of all he is transmitting this type and production. His daughters just coming in milk have produced as high as 23 pounds butter in seven days as 2-year-olds.

KING MEAD OF RIVERSIDE—The sire of the present State record cow, Aaggie Acme of Riverside 2d, that has produced in 120 days official test, 529 pounds butter and 10,424 pounds milk. She is his first daughter tested at mature age. They average 4% butterfat.

PRINCE GELSCH WALKER—One of the best bred bulls in the world and whose daughters have broken six or more State records as two and three-year-olds.

A few of their sons from high-record dams now available at moderate prices.

Write for
Prices and Pedigrees.

A. W. Morris & Sons
Woodland, Cal.

LIVESTOCK DIRECTORY.

SWINE.

Poland Chinas.

MAKE BIG MONEY with our famous Whitten Ranch Big Type Poland-Chinas. Prolific breeders and profitable feeders. Grow rapidly, fatten quickly. Top the market at 225 lbs. in six months. Make greatest profit for feed consumed. Prices reasonable; satisfaction guaranteed. Send for free illustrated book, "Hogs for Profit." Finest ever issued. Packed with valuable information; tells how to become successful. Ranch in Tulare County, but address owner, R. H. Whitten, 610A Security Building, Los Angeles.

GRAND CHAMPION SUPERBA POLANDS—A few choice spring Superba boars ready for service. Sows bred to Superba for fall litters. Prices reasonably low. Rough's Greenfields, Arlington Station, Riverside, Cal.

BOARS of serviceable age all sold. We have a few choice gilts bred to John Henry; an exceedingly choice boar. Also have a fine lot of Fall pigs, either sex. Bar N Ranch, E. A. Novas & Son, Props., Sutter, Calif.

POLAND-CHINAS—Bred gilts, \$25; young boars, \$10 and \$15; bred sows, \$25. Weanlings, either sex, \$6. Registered and crated, purchaser to return crates. E. A. Hall, Watsonville, Cal.

REGISTERED POLAND CHINAS—Young boars ready for service. Weanling pigs, both sexes. Prices attractive for quick sales. J. H. Cook, Paradise, Cal.

LAKEVIEW STOCK FARM POLAND CHINAS are money-makers. Satisfaction or money refunded. Geo. V. Beckman & Sons, Lodi, Cal.

POLAND CHINAS—Big type combined with quality. Choice bred sows, gilts, boars, W. D. Trewhitt, Box 82A, Hanford, Cal.

POLAND CHINAS—Big type. Shoats, either sex, or in unrelated pairs. O. L. Linn, Linview, Route A, Modesto, Cal.

REGISTERED POLAND CHINA SWINE—Prize-winners. Finest stock in the State. 220 lb. M. Bassett, Hanford, Cal.

BIG-TYPE POLAND CHINAS—Stock from the best herds of the Middle West. N. Hauck, Akron, Humboldt Co., Cal.

REGISTERED POLAND-CHINAS and Duroc Jerseys. Cholera immune for life. T. H. Beckman, Lodi, Cal.

LARGE NUMBER of excellent young boars ready for immediate service. Weanlings of either sex. Sired by Joker, first prize boar at Wisconsin State Fair, 1915. Sows and gilts, sired by Iowa Wonder and bred to Joker and Sunnydale's Chief. For prices and further information write, Geo. A. Smith, Corcoran, Cal.

POLAND-CHINAS—Large type. The Browning Stock Farm. W. H. Browning, Woodland, Cal.

DEACON RANCH POLAND CHINAS—Prize winners. Young stock reasonable. Box 27A, Davis, Cal.

KNOB HILL STOCK FARM—Registered Poland-China Swine. A. M. Henry, Farmington, Cal.

AMAWAGE FARMS—Poland-China hogs and Holstein cattle. G. H. Loughery, Visalia, Cal.

POLAND-CHINAS—Prize-winners. Money-makers. W. Bernstein, Hanford, Cal.

BEAOKS RANCH herd of registered Poland Chinas. W. J. Hanna, Gilroy.

REGISTERED POLAND-CHINA HOGS—J. A. Clark, R. 4, Lodi, Cal.

Berkshires.

GRAPEWILD FARM BERKSHIRES—World's Fair Grand Champion Grand Leader 2nd heads our herd, not only himself a champion, but the sire of Champions. At the 1916 California State Fair his daughters won first in all of the senior sow classes, including the Grand Champion Sow. At the 1916 Oregon State Fair a Grand Leader sow was Junior Champion. We are offering a number of choice boars of exceptional breeding and also booking orders for Fall pigs. A. B. Humphrey, Escalon, San Joaquin Co., Cal.

CHOLERA IMMUNE BERKSHIRES—August Masterpiece boars September values. Bachelor boars and November Ames Rival boars, \$20 to \$35 each. Fall gilts, \$25. All registered and from choice dams. Prices for March only. W. H. Waugh, Riverside, Cal.

REGISTERED BERKSHIRES—Progeny of Improver B. Young stock now ready for sale. Start your herd with breed and strain of established reputation for California conditions. Geo. G. Meckfessel, Berlin, Cal.

BERKSHIRES—I have one of the best herds on the Pacific Coast, including Grand Champion Sow, Reserve Grand Champion Boar under one year, Third Aged Boar, etc. Frank A. Brush, Santa Rosa, Cal.

IMMUNIZED NORMANDY BERKSHIRES.—Good type. Breeding stock, any age, for sale at all times. Cast iron guarantee. Arlington Smith, Visalia, Cal.

BERKSHIRES—Bred sows and weanling pigs. Write for prices and pedigrees before buying. Butte City Ranch, Box P, Butte City, Glenn Co., Cal.

REGISTERED BERKSHIRES—Special offering. Three service boars at prices to move them quick. Write us. Imperial Stock Farm, Morgan Hill, Cal.

ROSE CREST BERKSHIRES—Rivals Champion Best blood. Open and bred gilts. Service boars. F. L. Hall, Perris, Cal.

CARRUTHERS FARMS BERKSHIRES—Cholera immune. Second annual sale August 2, 1917. Mayfield, Cal.

30 REGISTERED BERKSHIRES—Boars and gilts for sale. J. H. Benedict, Lemoore, Kings county.

HOPLAND STOCK FARM—Registered Berkshires. Prices on application. Hopland, Cal.

REGISTERED BERKSHIRES—Geo. M. York, Modesto, Cal.

Duroc-Jerseys.

FIRST PRIZE HERD—Headed by Uneeda Wonder, 2nd prize boar at Nebraska and a winner at Omaha, 1916. Grandson of Crimson Wonder Akra and H. A. Queen. Entire offering of Spring pigs will be from 1st or 2nd prize-winners. Inquiry solicited. Haden Smith, Box 84D, Woodland.

UNEEDA GLENN CO. HERD—Special prices on Duroc Jersey boars till April 1st. Such boars with the breeding would cost \$25 per head more in the East. Good bone and quality and stand on the best of feet. H. P. Slocum & Son, Willows, Cal.

REGISTERED DUBOC-JERSEYS—Service boars from prize-winning stock are money-makers. They grow faster. New England California Corporation, Ripon, Cal.

CROLEY'S BALANCED HOG FEED—the cheapest feed to fatten hogs. Write Geo. H. Croley Co., Inc., Live Stock Supplies, 631-637 Brannan St., San Francisco.

DUBOC JERSEYS—Herd boars. E. N. S. Colonel and Tulare Boy. Sweepstakes winner at Fresno, 1915. Choice breeding stock. J. P. Walker, Visalia.

RANCHO RUBIUS DUBOCS—All sold except a few July and September gilts. Extra good. Write for prices. Elmer Lamb, Ceres, Cal.

DUBOC JERSEYS—Sow and boar pigs from Registered Stock. Low prices. Delta Farm and Live Stock Co., Colton, Cal.

REGISTERED DUBOC-JERSEYS—All from prize-winning stock. Both sexes at all times. W. P. Hackey, Gridley, Cal.

REGISTERED DUBOCS of guaranteed breeding. All ages. Weaned pigs, \$10. H. E. Roudier & Son, Napa.

HEAVY BONE DUBOCS—A few service boars for sale. Ormondale Co., Route 1, Redwood City, Cal.

REGISTERED DUBOCS—Crimson Wonder stock. Young stock, both sexes. L. D. Collins, Denair, Cal.

DUBOCS—Defender, Cantic B and Golden Model strain. The big type. Allen Thompson, Tulare.

REGISTERED DUBOC-JERSEY SWINE—Both sexes. Big-boned type. B. F. Kendall, Hardwick.

WINTON DUBOC-JERSEY FARM, Winton, Cal.—High-class pure-bred hogs both sexes. any age.

CURTIS DUBOCS of either sex at all times. E. C. Curtis, Napa, Cal.

DOS HERMANOS REGISTERED DUBOCS—Diverse and Pickersall, Ukiah, Cal.

DUBOC-JERSEY REGISTERED HOGS—River Bend Farm, St. Helena, Cal.

REGISTERED DUBOC-JERSEYS—S. S. Southworth, Napa.

BIG TYPE DUBOCS—Quick maturing. Easy keeping. Frederick M. Johnson, Napa, Cal.

Yorkshires.

LARGE YORKSHIRES—Choice spring boars, gilts, and weaned pigs from Champion sow P. P. I. E., or from breeding of champion boar and sow, Sacramento, 1916. If you see them grow you will like them. Riverina Farms, Paradise Road, Modesto, Cal.

LARGE YORKSHIRES—The ideal hog for the progressive farmer. Young stock for sale. A. L. Tubbs Co., Calistoga, Cal.

Chester Whites.

BILLIKEN HERD OF CHESTER WHITES—The type that is ready for market in 7 months or less. The easiest feeders of all. Buy now before prices advance. The price of market hogs is going out of sight. Twenty bred gilts due to farrow in May and June. Forty pigs, both sexes, four months old. Write for Circular and Booklet today. C. B. Cunningham Mills, Cal.

REGISTERED IMPROVED SHESTER WHITES—Grizzly Bear Ranch, East Auburn, Cal.

Essex.

LITTLE BLACK ESSEX—Service boars and weanlings. Only herd in the State. Limited supply. Yolo Essex Herd, L. W. Millsap, Yolo, Cal.

Hampshires.

BELLA VISTA HAMPSHIRE SWINE—from prize-winning pedigree. J. W. Henderson, First National Berkeley.

Tamworths.

BEAVER LODGE TAMWORTHS—Service boars. Write for prices and pedigrees. A. G. Lane, Amsterdam, Cal.

DAIRY CATTLE.

Holsteins.

FOR SALE—From 1 to 70 extra fine, straight well-marked, light-colored, registered Holstein heifers, from 8 to 20 months old. Those old enough are being bred to a first-prize son of Prince Gelsche Walker, whose dam has a high yearly record. Some of these heifers are sired by bulls whose dams have from 35 to 37 pound records. They carry the very best blood of the breed and are good enough for any herd anywhere. Prices to fit any pocket-book. Geo. A. Smith, Corcoran, Cal.

GRANDSONS OF HENGELVELD DE KOL and out of A. R. O. cows for sale. Prices reasonable. Write for pedigrees. Many years of constructive breeding has made my herd one of the prominent ones of the San Joaquin Valley. R. F. Guerin, Visalia, Cal.

REGISTERED HOLSTEINS—Herd sire King Kornelke Hengerveld Ormsby 7th, 86623. His full sister as Junior 3-year-old made 32.04 lbs. butter in 7 days. The record of his dam and his sire's dam averaged 30.98. George Kounias, Modesto, Cal.

REGISTERED HOLSTEINS—Grandsons of King Segis and of world's record cow Creamelle Vale. Will build up the production and value of your herd. Write or call and see them. F. H. Stenzel, San Lorenzo, Cal.

FOR SALE—Carload or less, full-blood, unregistered, tuberculin-tested cows and heifers. 3-year-old Holstein bull from registered sire and dam. All in fine condition. R. S. Burrough, Cloverdale, Cal.

TULARE GUERNSEY AND HOLSTEIN FARM is offering young bulls of both breeds. Excellent breeding. Prices reasonable. W. J. Higdon, Tulare, Cal.

THE MCCLLOUD RIVER LUMBER CO., McCloud, Cal.—High-class thoroughbred Holstein bulls for sale. Write for prices and pedigrees.

FOR SALE—Purebred Holstein bull and 20 high-grade Holstein cows. Also 20 dairy Shorthorns. Ed T. Morgan, Northam, Nevada.

J. H. HARLAN, WOODLAND, CAL.—Breeder of Registered Holsteins. Sold out at present. Watch for announcement on King Valdessa.

PACKWOOD FARM HOLSTEINS—Fine young bulls of serviceable age out of tested A. R. O. cows. W. F. Mitchell, Visalia.

FOR SALE—Two registered Holstein cows with A. R. O. records. Write for particulars. J. W. Benoit, Route C, Modesto, Cal.

THE HENDERSON CO.—Breeders and importers. Registered Holsteins. Sacramento Bank Bldg., Sacramento.

TWO SERVICEABLE SONS of Colantha Sir Pontiac Aaggie for sale. Moorland Farm, E. W. Abbott, Milpitas, Cal.

BREEDERS OF REGISTERED HOLSTEIN CATTLE and Berkshire pigs. Whittier State School, Whittier, Cal.

REGISTERED HOLSTEINS—A. W. Morris & Sons, Corp., Importers and Breeders. Woodland, Cal.

CREAMCUP HERD—Registered Holsteins Pontiac bull calves. M. Holdridge, Modesto, Cal.

REGISTERED HOLSTEIN CATTLE—E. E. Freeman, Route B, Modesto, Cal.

REGISTERED HOLSTEIN BULLS for sale. Sunnybrook Ranch, Willits, Cal.

REGISTERED HOUSTEN BULLS for sale. C. L. Morse, Route B, Modesto, Cal.

BREEDERS OF REGISTERED HOLSTEIN CATTLE—McAlister & Sons, Chino, Cal.

REGISTERED HOLSTEIN BULLS, \$50 to \$150. Glorietta Stock Farm, Woodland, Cal.

GOTSHALL AND MAGRUDER—Breeders of Registered Holstein-Friesians. Ripon, Cal.

CHOICE HOLSTEIN bulls for sale. No females. Millbrae Dairy, Millbrae, Cal.

REGISTERED HOLSTEIN-FRIESIAN CATTLE—J. M. Campbell, Escalon, Cal.

BREEDER OF HOLSTEIN-FRIESIAN CATTLE—Dr. Ben Stetson, Napa, Cal.

A. R. O. HERD OF HOLSTEINS—Alex. Whaley, Tulare, Calif.

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JERSEY BULLS AND BULL CALVES—Sons and grandsons of 2 and 3-lb. cows. None better. Cheap for quality. N. H. Locke, Lockeford, Cal.

VENADERA HERD OF JERSEYS offers calves from Register of Merit Cows with official yearly records. Write for list of bulls. Giv H. Miller, Route 1, Modesto, Cal.

REGISTERED GUERNSEY BULL—No. 24342 from A. R. and imported stock. Write for prices and pedigree. A. G. Lane, Amsterdam, Cal.

CHOICE REGISTERED JERSEY FEMALES.—Fresh and Springers. Breeding and individuality the very best. McLouth, Orland, Cal.

BREEDER OF REGISTERED JERSEY CATTLE—Duroc Swine. Young stock for sale. W. J. Hackett, Ceres, Cal.

JERSEY BULLS AND HEIFERS from Register of Merit Cows for sale. C. G. McFarland, R. 2, Tulare.

YOUNG REGISTERED JERSEY BULL Calves at reasonable prices. O. J. Ames, Oakdale.

JERSEY BULLS—Sons of Gertie's Lad and Gertie's Son's Victor. A. A. Jenkins, Tulare, Cal.

REGISTERED JERSEYS—Young bulls and bull calves. T. B. Purvine, Petaluma, Cal.

JERSEY BULLS from Register of Merit cows. C. D. Hayworth, Modesto, Cal.

Guernseys.

PACIFIC GUERNSEY HERD—Cattle selected from the best imported and Advanced Register Stock. Now offering choice bulls. C. S. Rasmussen, Lodi, Cal.

EDGEMOOR FARM GUERNSEYS—First in the show ring and in official records. Few animals of either sex for sale. Edgemoor Farm, Santee, Cal.

BELLA VISTA GUERNSEYS—Males from A. R. dams, \$100 up. J. W. Henderson, 1st National, Berkeley.

Ayrshires.

AYRSHIRES—Registered; all ages. E. B. McFarland, 412 Claus Spreckels Bldg., San Francisco.

AYRSHIRES—Registered—75 head. All ages. Young stock for sale. Le Baron Estate Co., Valley Ford, Cal.

BEEF CATTLE.

SHORTHORNS—Herd headed by grandson Whitehall Sultan. Calves sired by \$10,000 Prince Imperial for sale. One or a carload for sale. Get our prices before buying. Butte City Ranch, Box P, Butte City, Glenn Co., Cal.

SCOTCH AND SCOTCH-TOPPED SHORTHORNS—We have the largest herd of straight, Scotch cows in California. Foundation stock of both sexes for sale; also a choice lot of range bulls. Barco Ranch, Hollister, Cal.

D. O. LIVELY STOCK FARM, INC., 216 Hobart Bldg., San Francisco, breeders of Hereford cattle. A few choice heifers for sale. We buy and sell livestock on commission. Farm at Mayfield, Cal.

REGISTERED YEARLING SHORTHORN BULLS—Heavy-boned, thick-meated Scotch and Scotch-topped breeding. Ormondale Co., Route 1, Redwood City, Cal.

BREEDERS OF REGISTERED SHORTHORNS—Milk strain. Choice young stock for sale. John Lynch Ranch, Box 321, Petaluma.

REGISTERED AND UNREGISTERED—Shorthorn bulls for sale. Paicines Ranch Co., 320 Sharon Bldg., San Francisco.

INNISFAIR DAIRY SHORTHORNS—Registered young bulls for sale. Alexander & Kellogg, Susan, Cal.

HOPLAND STOCK FARM—Registered Shorthorns. Prices on application. Hopland, Cal.

REGISTERED HEREFORDS—H. H. Gable, Diamond G Ranch, Esparto, Cal.

SIMON NEWMAN CO., Breeders of Register Herefords. Newman, Cal.

GEORGE WATTESON—Breeder registered Herefords. Bishop, Cal.

SHORTHORNS—Carruthers Farms, Mayfield, Cal.

SHORTHORNS—Fair Oaks Ranch, Willits, Cal.

SHEEP AND GOATS.

F. A. MECHAM ESTATE, Petaluma, Cal.—Breeders and Importers of Shropshire, Rambouillet and American Merinos, both sexes. Also Red Polled cattle. Take electric car at Petaluma or Santa Rosa for Live Oak Ranch.

FOR SALE—20 head registered Hampshire ewes and one Hampshire ram. A great opportunity to start a pure-bred herd. D. O. Lively, 215 Hobart Building, San Francisco.

SHROPSHIRE—Ewes and Ewe lambs for sale. International winner heads flock. Butte City Ranch, Box P, Butte City, Cal.

KAUPKE BROS., WOODLAND, CAL.—Breeders and Importers of Hampshire sheep.

DORSETS AND ROMNEYS—Dorset ram lambs for sale. John E. Marble, Los Angeles.

BISHOP BROS., SAN RAMON, CAL.—Breeders and Importers of Shropshire.

CHAS. KIMBLE—Breeder and Importer of Rambouillet, Hanford, Cal.

HORSES AND MULES.

REGISTERED SHIRES—Black Hawk Stock Farm, Importers and Breeders, Easton & Ward, Proprietors, Burlingame, Cal.

MISCELLANEOUS.

SAN FRANCISCO LIVESTOCK EXPORT CO., Eugene R. Croley, Manager, solicits foreign orders for purebred registered and merit breeding animals and fowls. California has great diversity of climatic and other conditions that enable us to select animals that have been raised under conditions similar to those of the location for which they are intended. We should be informed regarding these conditions and be allowed ample time to make selections. Nearly all disappointments in buying afar are the result of insufficient information as to conditions or to lack of time for proper selection. Our plan and terms for "raising animals to order" to fit into peculiar foreign conditions is worth investigating. References: Dun or Bradstreet, or San Francisco banks. Office, 319 Underwood Building, 525 Market St. San Francisco.

ATTENTION, STOCK MEN! Population increasing, meat decreasing. Greatest rush in years for Government and State land. Free homes. Safe investments without residence. School, State, Indian, Government lands. Now available. You have nine rights now worth \$1,000 each. Booklet and 640 acre Homestead Circular Free. Write Joseph Clark, Sacramento, Cal.

CROLEY'S BALANCED DAIRY FEED—the cheap milk producer; and Croley's Calf Meal—the best California calf raiser. Geo. H. Croley Co., Inc., 631-637 Brannan St., San Francisco.

Ground Rice for Hogs and Horses.

There is no gainsaying the fact that rice has gained a lot of adherents among stock men of the Sacramento Valley during the past winter; and especially is this true of hog raisers who have found it a satisfactory substitute for high-priced barley in most instances.

An illustration of this was recently seen on the ranch of J. H. Trainer of Butte county who has been feeding ground paddy rice that he secured for \$1.10 a hundred because it was a trifle smutty and not well filled out.

Early in March he had, for over a month, been feeding his hogs a ration of three parts ground rice, one part rolled barley and skim milk to a pen of market hogs, part of which had gained a pound a day during the entire feeding period. Mr. Trainer believed they were putting on gains fully as fast as any he ever fed, with other feeds.

In feeding it ground and soaked he believes he gets better results than he would if it were fed dry and whole, as the hull is hard and brittle and almost impossible to digest. His practice is to let it soak about

12 hours, using a bucket to dip out of the barrel. He aims to have the bucket about half full of the soaked barley and rice, filling it with skim milk and adding a little skim milk at the trough afterwards.

He feeds three times a day, always being careful that they have a good keen appetite, but never allowing them to become ravenous; as under such circumstances they gulp their food instead of chewing it; and as a result a large part of the food passes through them undigested.

In feeding brood sows Mr. Trainer does not believe in getting them very fat, preferring to keep them in moderate flesh till about a week before farrowing time when he feeds liberally to give them additional strength and a liberal milk flow for the pigs.

But he does not believe that rice need be limited as a feed to hogs only, for he has used it in connection with barley, equal parts of each, in carrying his horses through the winter. To all outward appearances they are in as good physical condition as if fed rolled barley.

Hogs Follow Tubercular Cows.

[Written for Pacific Rural Press.]

How deceiving hogs may be in appearance alone is related by a hog grower we know who recently shipped 42 of his own and a neighbor's hogs to a San Francisco packer.

The hogs were sold with the understanding that the shipper would stand one-half of any tuberculosis condemnations, and secure a bonus of 10 cents a hundred on all hogs that dressed over 77 per cent.

Of the lot 28 head were from the shipper's own ranch while 14 head were from the neighbor's herd. Neither lot had been fed milk, but the neighbor's hogs had run with his family cows that were known to be tubercular.

Following the entire lot through the packing house this is what the shipper saw: Of his own 28 hogs, one brood sow, nine years old, showed tubercular lesions in the glands of her neck but was afterwards passed through when further examined by the government inspectors.

Of his neighbor's 14 head, two sows were condemned outright, also a boar and one other sow were sent to the sterilization vats. This made a total condemnation for the lot of almost 30 per cent, half of which was shouldered by the packer.

While it was a costly experience

to the owner, it pointed out a bad practice in his farming operations which he would not otherwise have known about. As breeding animals are sold from the same herd to farmers all over the State, he will be in a better position to safeguard the interests of his customers in the future.

RICE STUBBLE FOR HOGS.

[Written for Pacific Rural Press.]

That increased pork production in California is certain to result from any increased acreage of rice seems assured from the experience of those who ran hogs on rice stubble during the winter months.

It had been thought by some that the hulls on the rice would do irreparable damage to the hogs' intestines because of their hard, flint-like character, and by others that the hogs might not do well on rice stubble because of the mud and water which results from heavy rains on the already saturated ground. Neither of these theories seem to be borne out in practice.

That hogs will do as well if not better on rice stubble than on other kinds of stubble is the opinion of J. H. Harlan of Yolo county, who pastured a large band of mixed hogs on 75 acres of rice stubble from December 1 till time for spring plowing last season.

Portions of the band were marketed weighing up to 300 pounds each and Mr. Harlan states that they were in as prime condition as any hogs he ever shipped, also that they put on weight faster than when run on barley stubble in previous years.

Skim milk from several thousand cows is reported to have been contracted on the West Side of Merced and Stanislaus counties to be hauled from several stations by eight motor trucks to the central casein factory at Modesto.

THEY ARE RIGHT

RIGHT as producers

RIGHT as breeders

RIGHT as individuals

That sums up the facts concerning the herd of registered Holsteins owned and developed by H. E. Cornwell, Modesto, Cal. But to arrive at the sum total we had to add together the splendid blood that Mr. Cornwell selected for foundation; the careful matings he has made of select animals during the years it has taken him to build the herd up to its present size and quality; the creditable official records made in the herd; the good semi-official yearly records, both of milk and butter; the consistent show ring winnings of members of the herd; and the splendid way in which the herd is breeding on in both form and production.

AND NOW—this good herd, consisting of 11 A. R. O. cows, with records up to 26.50 pounds butter in 7 days; 6 cows with semi-official yearly records up to 707.31 pounds butter; daughters of A. R. O. and yearly record cows; several well bred young bulls; and the great young herd sire **PRINCE HISKE WALKER**, son of Prince Gelsche Walker, will be sold by us at Mr. Cornwell's ranch near Modesto, California, on Thursday, April 19, 1917.

A catalog is being prepared and a copy will be mailed to those requesting it.

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California Breeders' Sales and Pedigree Company

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These Bulls are conceded to be the best offering ever made from the Hillcrest Stock Farm.

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King Lancaster, sired by King Edward, grand champion bull State Fairs, 1908-10-11.

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Golden Goods, Jr., Hard Sire.

Our 1916-17 offering of yearling bulls is small but select. They are all heavy boned, solid red in color and of Scotch and Scotch-topped breeding. Suited for either the range grower or breeder.

DUROCS.

Our Durocs are of the big type, with big bone, well-arched backs and carrying good hams.

We have a few head of service boars, now ready for service, solid red in color and out of prize-winning animals.

Every Animal Positively Guaranteed

Whether you buy or not, visit our ranch, 7 miles from Palo Alto on Woodside Road. We welcome inspection. Prices and pedigrees on application.

Shorthorn Cattle
Duroc-Jersey Swine

ORMONDALE CO.

R. D. No. 1
Redwood City,
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BREEDERS AND DEALERS

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LARGEST HERD IN THE COUNTRY

80 Head Jennets

40 Head Jacks

CAN SUPPLY YOUR WANTS AT ALL TIMES.

Write, or Come and See Them.

John Burrell, Proprietor

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Hanford, Cal.

Sale Barn in Hanford near S. P. Depot.



HOLSTEIN CATTLE

Tilly Alcantara, a pure-bred Holstein-Friesian, is the most wonderful cow in the world. In 385 consecutive days she produced 30,451.4 pounds of milk, or about 15 tons. In two years she produced 60,728 pounds of milk. She holds the world's milk record for one, two, three and four years. Holstein cows hold all world's records for milk and butterfat production, but the claim of the Holstein breed to the title of the "most profitable dairy breed" is not based on individual tests. It is the great uniformity of high productiveness of Holstein cows everywhere that makes them the greatest money-makers for dairymen. Send for FREE Illustrated Descriptive Booklets. The Holstein-Friesian Association of America.

F. L. Houghton, Sec'y.
Box 230, Brattleboro, Vt.

FEED RICE.

[Written for Pacific Rural Press by H. O. Jacobson, Butte City.]

The question of feeding rice resolves itself into one of dollars and sense. Barley is extravagantly expensive while rice is cheap. In most markets barley sells for 25 per cent more than does rice. We consider barley to be not more than five per cent more valuable than rice for feeding work stock, and less valuable for fattening purposes, either for cattle, poultry, or hogs. By persisting in feeding barley now the feeder wastes \$10.00 for each ton he uses.

California barley stocks are low and prices tend to rise as a consequence. On the other hand, a number of causes have restricted the movement and distribution of the 1916 crop of rice. Many of the rice farmers lack capital, since what they have is represented by the paddy in the warehouse. The California rice industry is an invaluable asset to the State; and a very big factor in the development of certain extensive areas. It will be the connecting link between the extensive grain farming operations of today and the better balanced farming methods of the near future. The animal industry interests of the State can lend a strong hand now to help the rice industry out of a depression and save money by so doing.

ABNORMAL BUTTER RECORDS.

The astonishing production of 50.7 pounds of butter in seven days by the New York cow, Segis Fayne Johanna, recently announced, calls to mind that the Missouri College of Agriculture first showed several years ago how these abnormally high seven-day butter records are brought about. The cow is fed heavily while dry for some time before calving and begins the milking period with a large amount of surplus fat on the body. If the animal is naturally a heavy milk producer these conditions invariably cause the animal to be underfed for a period of time after calving. It is this underfeeding which causes the cow to take off her excess body fat laid on before calving and put it into the milk.

The effects of underfeeding on the milk and butter have been extensively studied by the Missouri Experiment Station. Recently published results of these experiments show that the butterfat produced during the high seven-day tests has a composition such that it appears to have been mixed with oleomargarine. The butter would not pass for pure butter, according to the Government pure-food standards.

The Missouri Station tests also indicate that underfeeding is probably involved in all manipulations which cause abnormally high fat production for short periods of time. The butterfat produced is also likely to be below the standards for pure butter of the United States pure-food laws.

The business of the American Berkshire Association during March exceeded that of any month in the history of the Association. The increase in registration was 45 per cent greater than in March, 1916, writes F. S. Springer.



Half a Cow-

Half a cow means half a profit—really a loss, because a poor producer costs as much to keep as a good milker. If you have a cow that is below par, chances are some vital organ is impaired and she needs treatment.

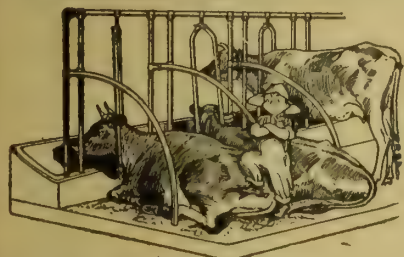
Kow-Kure is the one cow medicine that quickly tones up the digestive and genital organs and puts a backward cow on her feet. Try Kow-Kure on your most doubtful cow. It is especially effective for the prevention or cure of Abortion, Barrenness, Retained Afterbirth, Milk Fever, Lost Appetite, Scouring, Bunches, etc.

Sold by feed dealers and druggists. In 50c and \$1.00 packages. Write for free book, "The Home Cow Doctor."

DAIRY ASSOCIATION CO., Lyndenville, Va.



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Portland Seed Co., Portland, Ore.
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COW COMFORT

MORE and BETTER MILK

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Sanitary Barn Equipment
Carried on Pacific Coast.

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Best plow rig. NO WHIFFLETREES—NO TRACES.
Handiest farm harness.

Indispensable in the orchard with special fitness for all low down work. You can hitch closer to your load, plow and cultivate close to the row and save all the worry to man and team. No weight of whiffletrees for man to lug. Everything clear behind team. Use our outfit and save your trees. Highest endorsement of farmers and fruit growers.

Write now. B. F. BAKER CO., NUMBER
(1220) MAIN ST., BURNT HILLS, N. Y.

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LOSSES SURELY PREVENTED
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Low-priced, fresh, reliable; preferred by western stockmen, because they protect where other vaccines fail.

Write for booklet and testimonials.
10-dose pkg. Blackleg Pills, \$1.00
50-dose pkg. Blackleg Pills, \$4.00
Use any injector, but Cutter's simplest and strongest.
The superiority of Cutter products is due to over 15 years of specializing in VACCINES AND SERUMS ONLY. INSIST ON CUTTER'S. If unavailable, order direct.
The Cutter Laboratory, Berkeley, California



REDWOOD TANKS — SILOS.
Thirty-five years in this business in Stockton. A 500-gallon tank, \$12.00. A tank 6 ft x 2 1/2 ft., \$10.00. Other tanks equally cheap. I deal direct with the consumer, saving 10% to 25%. All sizes in stock. Clear dry redwood direct from the mill. Write for price today.

Latest improved machinery. Doors, Windows, Frames, Mouldings.
R. F. WILSON, STOCKTON, CAL.

Don't think you can remember each ewe's record. Have ear marks and be certain.

Do You Want Long Distance Breeding?

We have a son of the California State Champion three-year-old for sale. Born October, 1915; Sired by PRINCE ALCARTRA KORNDYKE, whose dam is TILLY ALCARTRA.

The Dam of this young bull is not a fifty-lb. cow, but she has to her credit 21,208 lbs. milk and 860 lbs. butter in one year, which is the largest record ever made in California by a Junior three-year-old.

If you are in the market for a bull, it will pay you to visit our ranch and see what we have to offer—at prices that will surprise you.

J. S. GIBSON CO., Box 97, Williams, Cal.

"THE NAME GIBSON INSURES QUALITY."

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For many years at widely separated show rings, under many different judges of varying type ideals, my Poland Chinas have been consistent prize-winners. My herd is large and I cull closely. The animals sent out as breeders are the very tops of a large number. I KNOW that my kind of Poland China is a profitable farmer's hog, for I send carloads of them to the packer every year—uniform in size, high in quality, quickly and economically matured and finished.

GRAND CHAMPION SOW,
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Young stock, \$30 Up.
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Box 1, Hanford, Cal.

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REGISTERED SHORTHORN BULLS

A fine lot of individuals. Ready for service on the range.
Registered Berkshires, Holstein Bulls from high-testing cows.

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Animals of either sex ready to deliver in car lots or singly.

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The best blood of the best breed on earth. 25 choice young boars, six months old. Sell your sub-soiler scrub and buy a money-maker for \$25.00.

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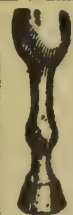
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Reduces Bursal Enlargements, Thickened, Swollen Tissues, Curbs, Filled Tendons, Soreness from Bruises or Strains; stops Spavin Lameness, allays pain. Does not blister, remove the hair or lay up the horse. \$2.00 a bottle at druggists or delivered. Book 1 M free.

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I represent one of the greatest Government Inspected Hog Cholera Serum Plants in the whole country.

NO BETTER SERUM MADE. An ounce of prevention is worth a pound of cure. Find out about this serum today. Price Right.

For particulars address.

CARRUTHERS FARMS,

MAYFIELD, CALIF.

Raising Poultry for Profit

PRESERVING EGGS FOR WINTER USE AT HOME.

[Written for Pacific Rural Press by Susan Swainsgood, Pomona.]

Preserved eggs, in the home, are perfectly legitimate, but don't make the mistake of thinking you can preserve them in any way and sell on the market, except a few to your neighbors. For many uses in the kitchen the eggs that have been stored seven or eight months are equivalent to fresh eggs and every farmer ought to put enough away during the time when eggs are cheap to last the cook during winter months.

None of the simple home methods of putting eggs up for a short time will be of much benefit in this State, unless one has a cellar. The lime method of preserving eggs is perhaps the oldest; and if done right is as good as any and much cheaper than the water glass method.

General Precautions.—Attention should be paid to the following: (1) Be sure that the eggs to be put away are perfectly fresh, gathered at least once a day out of clean nests. If any dirt is on them scrape or wipe it off rather than wash the eggs. (2) Have your solution ready and keep the eggs immersed all the time. (3) If possible save only those eggs where no males are in the yards. (4) Keep at as low a temperature as possible, the lower the temperature during the time the eggs are in the liquid, the better will be the flavor. When preserved eggs are allowed to get warm they often have a stale flavor.

The Lime Water Method.—One pound of lime, if it is good, will saturate seven gallons of water. But much lime is full of impurities; so unless it is fresh and of known quality, it is better to use, say, one pound of lime to five gallons of water. Slake the lime with a small quantity of water, then stir the milk of lime into the rest of water. After stirring a few times, allow the liquor to stand a few hours to settle, have the eggs packed in a crock or keg that can be closed tight. Pour the clear lime water over them, leaving the settlings in the vessel it was in. Exposure to air tends to precipitate the lime, so the vessel containing lime-preserved eggs should be kept covered until needed for use.

Water Glass Method.—Water glass varies some in quality and color; that coming from Germany is usually dark, while the American kind is white or nearly so. Both kinds vary in strength, but that can be adjusted by allowing for it. Eight quarts of water to one of water glass is about right. Boil the water—not merely heat it, but see that it boils—then set aside in a closed vessel to cool. Have the eggs packed (I always think they hold up the yolk better if packed large end down), then pour your cold water glass over them, cover with a cloth and something that will hold the eggs down in the water. If the work is done right eggs will keep a long time preserved in this way.

Hot Water Method.—For eggs

that are not to be kept very long this method keeps eggs the nicest for cooking, as they do not absorb any odor or foreign taste. But they must be strictly fresh. Place your eggs in a wire basket and hold them in boiling water, while you count six. Let them dry and cool off, then pack in a layer of clean oats, a layer of eggs and a layer of oats until you have all you need, cover and put in as cool a place as you can find. You will like these eggs best of all.

Packing Eggs for Hatching.—Whether you are packing one setting or 100, line your basket well, bottom and sides, with excelsior, then wrap each egg in a piece of soft newspaper and a little bunch of excelsior. Press down in among the other lining, and over every layer put a good thick layer of excelsior, then another layer of eggs, always having a well-rounded top so that expressmen cannot place anything of any weight on top of your eggs. Put a postcard addressed to yourself in the package asking customer to report breakages and bad hatches. You will find your customers will appreciate this on your part.

Little Chick Suggestions.—Keep little chicks from getting chilled. Don't feed too early (48 hours for incubator chicks, 24 for chicks with natural mother). Chicks of small breeds should be taught to perch at 8 to 10 weeks old; they thrive better after they commence to perch. If kept two or three nights in a brood coop, they will go to it even if given their liberty and range.

Look out for head lice on baby chicks if older fowls are around. A few drops of oil of cedar rubbed under the hens' wings will keep them away. And it will not hurt the chicks to put a few drops on top of head and around the throat.

Warm Weather Sprouted Oats.—We are going to have some warm weather soon, no mistake about it. Nature plays freak tricks, but she is bound to give us some warm days. Then we can sprout oats right out in the ground. Soak a bushel of oats overnight. Make a frame of 1x6 lumber, pour the oats inside the frame on the plowed ground and cover the oats with one inch of dirt, sprinkle every day and in a few days they will be growing through. They are now ready for feeding. Cut a piece about a square foot for each fifty hens a meal. You can't feed anything finer to breeders, layers, or little chicks. It's good for all of them and about the cheapest feed you can get, and it's good for little turks, too.

Brooding Notes.—With eggs higher in price, chicks must certainly cost more, so why not plan to make sure the brooder stove is working right and raise all the chicks. I believe it pays to hatch or buy only what you can take care of properly; the idea that if you raise a certain per cent you are doing as well as the average is up to, shucks!—a man or woman who ever expects to gain headway must raise the standard of his work above the average. Here's a pointer, paste it in your hat: Nobody ever succeeds

until they get too big for the place they are in. You can't lift yourself by your bootstraps, but you can make yourself too big for your present job by doing better every day. If you raised 50 per cent of your chicks last year, make up your mind that you are going to raise 75 per cent this year, next year raise it to at least 90 per cent and there is no natural law to prevent you raising 100 per cent. Wilful neglect of baby chicks is criminal, only it is outside the law and we can't touch people for it.

RABBIT POINTERS.

[Written for Pacific Rural Press.]

H. H. Ballou of Imperial county, who has raised lots of rabbits for meat, was just liberating some youngsters in a pen made by stretching fine mesh wire around a tree in a trench 2½ feet deep and a dozen feet square. The wire reached about 2½ feet above ground. It was expected that the rabbits would burrow for protection from the weather.

His successful experience was in Los Angeles county, and these were his first in the Valley. Of all he had raised his losses were practically none. He fed green grass, alfalfa, etc., but never while it was wet with rain or dew. Rolled barley and corn

Poultry Breeders' Directory.

Rates in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

EXTRA QUALITY White Leghorn chicks, 12c until March 1st, then 10c. Carefully line bred from MacFarlane, Young, Martin, and Cyphers strains of foundation stock. Eggs, \$1.50 per 15, \$2.50 per 30, \$5.00 per 100, \$50.00 per 1000. Acres of free range connected with our breeding pens, 20,000 feet under roof. Only Jubilee incubators used; disinfected every hatch. Don't save 2c per chick in buying, and lose a dollar per pullet in raising; get the Best and Succeed. Newton Poultry Farm, Dept. 1, Los Gatos, Cal. Catalogue free.

THE J. K. BIGELOW POULTRY RANCH and Hatchery—300 acres devoted to superb vigorous Hogenized White Leghorns. Bigelow chix are incomparably superior to the product of ordinary commercial hatcheries. Prices same as former seasons—10 cents each till April 1, 9 cents during April and May, and 8 cents thereafter. Shipped on approval; examination before paying. The Bigelow Poultry Ranch, Sonoma, Cal.

HIGHEST CLASS—Winners at State Fair, Oakland, Modesto, Reno, White Rocks and White Leghorns. Incubator chicks. Rocks, \$25.00 per 100; Leghorns, \$10.00 per 100; Hatching Eggs, \$2.00, \$5.00, and \$10.00 per 15, according to quality. Rock Eggs, \$10.00 per 100; Leghorn Eggs, \$6.00 per 100, from range flocks. The best of stock and a fair deal. Mahajo Farm, P. O. Box 507, Sacramento, Cal.

BARRED PLYMOUTH ROCKS—COCKERELS—Cockerels—Cockerels—Yes, we have them; also Hens and Pullets—all bred from our Champion Winners at California's leading shows. Also hatching eggs. If it's Barred Rocks you want, get in touch with me right away. Have bred them exclusively for nineteen years. Send for Catalogue. Chas. H. Vorden, Box 396, Los Gatos, Calif.

200-200 EGG WINTER LAYING Brown Leghorns; Wyandottes; Reds; White Barred Rocks; Buff Orpingtons; Wyandottes, Anconas. Special sale April 1-14. Breeders, Eggs, chicks—everything reduced. Fifty, \$2-\$5. Young 200 egg trap-nest Leghorns. One cock took seven firsts. Hundreds satisfied customers and repeat orders. M. Beeson, Pasadena, Cal.

"FINEST HATCHERY IN THE WORLD"—Baby Chicks, White Leghorns, and Rhode Island Reds, settings, 100's, 1000's, hatched right in our \$60,000.00 brick and concrete hatchery from our quality heavy layers. Reasonable prices. Stock, Hatching Eggs, Febleside Poultry Farm and Hatchery, Sunnyvale, California.

BABY CHICKS—From large, healthy, vigorous, heavy laying thoroughbred Single-Comb White Leghorns. \$10 per 100; \$2 per 100 when order is booked, and balance 5 days before delivery. I pay the express to your nearest express office. H. A. Schlotthauer, Eureka, Cal.

WHITE LEGHORN AND BROWN LEGHORN day-old chicks from healthy, vigorous breeders. Per 100, March \$10.00; April and May, \$9.00. Reduction in larger lots. "Chicks well hatched are half raised." San Jose Hatchery, 373 Meridian Road, San Jose, Cal.

MAY AND JUNE CHICKS—Will lay this fall if from our early maturing strain. Our Leghorns and Reds begin laying at 4½ to 5 months. Leghorns \$10 per hundred. Reds \$12.50 per hundred. Brooke Farm (Rancho del Paso), 807 J St., Sacramento, Cal.

BABY CHICKS—From white Leghorns that are the result of severely hogenizing for the last six years. Our Barred Rocks are thoroughly hogenized; none can be better. April May and June hatchings. Atterbury Poultry Farm, Route No. 1, Box 183, Turlock, Cal.

ROOFDEN RANCH CHICKS are good chicks, well hatched from first-class utility breeding stock—money-making egg producers. The prices are right—7c to 14c, depending on breed, month, quantity (dozen to thousands). White, Buff, Brown Leghorns; Black Minorcas, Rhode Island Reds, Barred Rocks for dollars and sense. Send card for circular. Roofden Poultry Ranch and Hatchery, Campbell, Cal.

BUFF ORPINGTONS—BUFF LEGHORNS—Winners at Riverside, San Diego, Los Angeles in strongest competition. Eggs, settings and incubator lots. Chicks for April and May. Free mailing list. The Ferris Ranch, E. 2, 114d, Pomona, Cal.

BABY CHICKS—HATCHING EGGS—White, Buff, Brown Leghorns, E. I. Reds, Barred Rocks. Sturdy chicks from well-mated fowls. Prompt, efficient service. Write for circular. Campbell Poultry Ranch, Campbell, Cal.

BABY CHICKS—We hatch from our own stock of 10,000 vigorous, healthy S. C. White Leghorn hens of heavy laying strain. Write for price list and further particulars. George Brothers, Petaluma, California.

SILVER CAMPINES—Large eggs from heavy laying Kennedy fowls. Economical heavy laying Kennedy fowls. Prices at San Francisco and Oakland. Setting \$2.00. Robert Edgerton, Raymond, Cal.

HATCHING EGGS—90 per cent fertility. From Hogenized S. C. White Leghorns only. Remated in February. Prices reduced for March and April. Write at once. Pine Tree Poultry Farm, Los Gatos.

HOGANIZED AND TESTED—220-egg type White Orpingtons and Buttercups. Hatching eggs, chicks and cockerels for sale. Reasonable prices. For particulars, write M. Woodhams, San Mateo, Cal.

SELECTED S. C. White Leghorn and Barred Rock eggs for hatching from hens typed to lay 200 to 260 eggs per year each. Baby chicks in season. Write for prices. Jay Maxwell, Madera, Cal.

S. C. RHODE ISLAND REDS—220-egg record in 12 months. Hatching eggs, Chicks, Stock. Also Rose Comb Reds. Mating list ready. Wm. Larm, 3915 39th Ave., Fruitvale, Cal.

BABY CHICKS from S. C. White Leghorns from trap-nested hens with records from 192 to 297 eggs. Also S. C. Black Minorca chicks and eggs. J. W. Benoit, Route C, Modesto, Cal.

HICKS JUBILEE HATCHERY, Petaluma, Cal.—White Leghorn and Black Minorca chicks and hatching eggs. Circular "How to Raise and Feed Chicks" Free.

GIVE the Black Minorcas a trial. Guaranteed first class. Eggs, \$6 per hundred, \$1.25 per setting. Chicks, \$12 per hundred. Ezra Mosher, Union Station, Napa.

BABY CHICKS—From select free-range White Leghorn stock. Place orders early. Prices on application. Western Hatchery, Petaluma, Cal. W. S. Waldorf, Prop.

EARL E. SANDERS, Modesto, Cal., breeder of M. B. Turkeys, S. C. White Minorcas, S. C. Black Minorcas and S. C. Barred Plymouth Rocks. Nothing but the best.

S. C. RHODE ISLAND REDS—Pullets and Cockerels. One Black Orpington Cock. Eggs from R. I. Reds and Silver Campines. Mrs. E. S. Spaulding, Woodland, Cal.

MODEL POULTRY FARM—White Leghorn specialists. Our thirteenth year. Baby Chicks and Hatching Eggs for sale. W. C. Smith, Fresno, Corning, Cal.

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Classified Advertisements

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WALNUT GRAFTING WOOD—Genuine Franquette. Same strain as Vrooman orchard was planted from. Willson's Wonder, grown by originator. F. C. Willson, Encinal Nurseries, Sunnyvale, Santa Clara Co., Cal.

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SEED CORN—Egyptian white, large pure white kernels. High germination test. None better offered. Also milo maize, feterita, and Egyptian wheat. Modesto Farmers' Union, Modesto.

QUALITY TREES—Seedlings, 5c. Prunes, 10c. Walnuts, 30c. Cash Nurseries & Seed Store, Sebastopol, Cal.

FOR SALE—Walnut Trees. Magnolia Nurseries, Whittier, Cal.

WANTED:

WANTED—Young men and women to attend the Western Normal Courses—Normal and Academic. The Normal Course gives an adequate preparation for teaching, at a great saving in time and money. Academic course gives practical finish to education. Write for Bulletin "A," Western Normal, 524 E. Market St., Stockton, Cal.

EXPERIENCED SWISS DAIRYMAN wants to rent a dairy on shares, or will take full charge of a dairy ranch as foreman. Can give references if required. Box 490, Rural Press.

COUNTRY LANDS.

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ALFALFA LAND FOR DAIRYING—Also first-class Orchard land. 10 acres and up. Brentwood Irrigated farms in Contra Costa County, 63 miles from San Francisco. Easy terms of payment. For prices, etc., address Balfour, Guthrie & Co., Land Department, 350 California St., San Francisco.

FOR SALE—948-acre stock ranch in Napa county. Price, \$17,000 net. All modern improvements. Living creek. 125 acres hay, grain and alfalfa land. Free range adjoining 175 head of cattle can be purchased if desired. Liberal terms. Owner, Box 383, Napa, Cal.

\$5,450.00—Andrew Linquist, 20-acre Peaches and Grapes ranch, two miles west Kingsburg, California. Improvements. Half interest. Pumping plant. See Linquist, C. E. Robertson, 105 Montgomery St., S. F.

FOR SALE—Dairy ranch, 30 acres all in alfalfa, with improvements, in the Patterson irrigated colony, one mile from town. \$5000 down, balance to remain. C. J. Clemens, Patterson, Cal.

completed the ration. "So long as you feed right and keep the pens clean and dry, you are not likely to lose any," said he. If the pen is not kept dry, they are likely to die with snuffles; and once in a while a barley beard may get into one's throat and will it.

Kink on Shipping Rabbits—In shipping the stock to the valley, they were designated "Market stock" and came at half the express rate that would have been charged for breeders. Of course in case of claim for damages, they would have been rated at market prices.

BROWN EGGS EQUAL TO WHITE.

[Written for Pacific Rural Press.]

The prejudice against brown shell eggs has practically disappeared in California except in the San Francisco market. When the brown shell eggs are fresh, clean, of proper size, and correctly marketed, they now sell for practically the same price in Sacramento and Los Angeles as white-shell eggs. This prejudice is still maintained in San Francisco, for the reason that Petaluma, Hayward, and other nearby poultry centers produce white-shell eggs almost exclusively, and these poultry centers carefully grade and ship every day. On the other hand, brown-shell eggs are usually produced from small flocks, or in districts where there is a limited supply; and for this reason are more or less held at point of production until a large shipment can be made. If the brown-shell egg is shipped promptly and handled the same as the white ones are being handled, the brown egg is equally good; which fact the general public of San Francisco do not understand. All California markets are over-supplied with small-size hens for killing purposes and are short the larger fowls, which are more suitable for table purposes. As a consequence, hundreds of carloads of these larger fowls are shipped into the State each year. Many California poultry-keepers realize that they could greatly increase their profits by raising the larger fowls, which are the producers of brown eggs, if they could market their eggs in San Francisco and receive the same price as for white-shell eggs. When this prejudice against brown-shell eggs has been overcome in San Francisco, many poultry people will be induced to produce these larger fowls, for the reason that the price per pound now being paid for large mixed colored hens, averaging 5 pounds each, brings the price to nearly twice as much per dozen as the present price paid for leghorns.

QUESTIONS ANSWERED.

[Answered by Susan Swainsgood, Pomona.]

Toe Picking—Is there any remedy for toe picking among baby chicks?

R. S. COELHO, CORCORAN, CAL., Owner.—150 acres improved, subdivided alfalfa dairy. Stratford. Keeps 85 cows. C. E. Robertson, 105 Montgomery St., San Francisco.

FOR SALE, RENT, OR LEASE on reasonable terms. Creamery in good dairying section for summer business. For particulars, apply Box 84, Quincy, Cal.

STEVENS COUNTY—Logged-off land where stock-raising and dairying pay. Free booklet. Phoenix Lumber Co., Crop Department, Spokane, Washington.

FREE NEW BLUE BOOKLET—State Government and Indian Lands. Bargains overlooked. Joseph Clark, Sacramento.

640-ACRE MONTANA HOMESTEADS—New law. Circular free. Bureau 27 Boulder, Montana.

—H. J. B., Petaluma.

The only remedy for toe picking is to remove the afflicted chicks as soon as found. Prevention, however, is not so hard, for it consists chiefly in providing lots of light in the brooding houses, and a deep fine litter such as oat hulls, rice hulls, or finely chopped straw under which the feed is thrown in order to keep the chicks busy on the ground. There may be something in the idea of giving them meat foods, but we doubt this. A number of leading poultrymen have suggested to us that they believe toe picking is primarily due to idleness in combination with the appearance of the chicks' toes, which look like worms. When the other chicks have tried to dig up these worms and have drawn blood that makes cannibals of them.

Rice and Mash for Hens—Is California whole rice with the hull on sary to cook it, howshrdlu shrdlu all right to feed chickens? If necessary to cook it, how does it compare with other feed? My poultry after having been at large for a year are now enclosed in yards and some are going light. Several have died. They were thin and weighed almost nothing. Internal organs seemed normal. Kindly give me proportions for a mash for 50 hens. I am giving middlings, bran, beet pulp, beef scraps, and alfalfa meal mixed in equal proportions, with plenty of grit and oyster shell.—Mrs. L. F. E. Crush your rice so that the hulls

can be left by the hens as scratch litter. Cooking would scarcely pay; but you might cook it and use in the mash in place of beet pulp. Your feed is too rough already. Do not feed rice with hulls on. For your mash take two parts corn meal, two of bran, two of middlings, two parts cooked rice, half a part alfalfa meal, one part bone meal, two parts beef scrap, and a little salt. Feed all they will clean up soon. Twice a week add a little sulphur to the feed, and keep grit oyster shell, and coarse charcoal before them all the time.



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Our free book "Chickens from shell to Market" gives full particulars
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Everything in Hair, Fur and Feathers.
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White Leghorn and White Plymouth Rock Cockerels. White Leghorns and White Rock Baby Chicks hatched from specially selected heavy-laying stock. Prices same as last season. White Leghorns, January and February delivery, \$12.50 per hundred; March, \$10.00; after April \$10.00. White Plymouth Rocks, \$15.00 per hundred. All P. O. B. Hopland.

San Francisco Office,

1210 Flood Bldg.

Mrs. Best's Letter.

ORIENTAL FADS.

Dear Friends: This spring sees a fad for Chinese things. Cunning novelties, furniture and clothes reflect its influence. The shops show things all made up, but any one clever with needle, paste and scissors can make attractive things for the home or for gifts from brocades of bright rose, blue, and green, Chinese embroidery and gold braid.

The telephone book is a new idea. It is a cover for that usually unsightly, mistreated necessity. Two pieces of cardboard for the backs and one for the end, a little wider than the book, are necessary. Pad the front and back slightly and then cover with Japanese crepe.

Paste the edges down neatly and line the inside with a dark color. The edges of the lining are hard to get down smoothly, but care here will give a finished air to your work. Two that I saw were of this soft silk crepe, one yellow with birds flying across it, the other blue figured all over with flowers. Both were finished with a tassel of a corresponding shade.

Large guest books, too, were covered similarly. Another shop displayed tapestry-covered and cretonne-covered guest books.

Magazine covers, too, now much in vogue, were covered with bright brocade and trimmed with gilt braid for a festive gift, and others were shown of patent leather with a bright stenciled flower on the cover. The magazine covers have a flap on the inside by which the magazine is held in place.

Very attractive book ends about five inches high are shown too in these bright materials. A foundation is of metal, bent so that there is a base. This is covered with felt on the inside and on the base. The ends are padded and covered with bits of Chinese embroidery richly lined with gold threads. The edges are finished with braid.

For the dresser there are many attractive things easily made. Round pasteboard boxes four or five inches high with covers are fitted with brocade and finished with braid to hold face cotton. Perfume bottles in odd shapes, carefully covered, are attractive too. Then slim tall bottles are covered carefully, and finished at the top with a cushion gay with color and covered with net through which you push your hat pins when you remove them. Trays are made in which glass is fitted, then under this glass is put a pretty piece of tapestry, or brocade covers the whole bottom. These trays are silenced by fitting felt on the bottom. Braid finishes the narrow sides.

Adorable pin-cushions can be made in any shape or size with this lovely stuff. And powder dishes may be made from small round boxes or dishes of which the sides are carefully fitted with material.

A lovely shade for the lamp could be made of four pieces of brocade fitting smoothly and light silk gathered onto the frame separating the brocade and setting it off. Shades for other lights in the room would be pretty if made in the same design.

Scissors or paper knife slipped

THE HOME CIRCLE

into a Chinese case and pulled out by a tassel is pretty on a library table.

Chinese cash, beads, characters cut from celluloid or felt and tassels combined with bright narrow ribbon are fashionable for hat trimmings.

Bags oblong in shape pull up like a fan and are made of embroidery combined with plain stuff. Long narrow bags with bracelets to carry them by slip on the wrist. Card cases and flat pocket books, carved ivory beads in white and colors, sandalwood beads, jade, rare oriental designs in jewelry are all fashionable now.

In furniture too this oriental influence is felt. There are softly tinted Wilton rugs reproducing Chinese and Persian designs. There are spindle-legged chairs and tables in dull black with green and rose trimmings with Chinese characters or designs in dull gold. Even in dishes, one shop showed a dull black set decorated in bright colors and another set in yellow, with Chinese decoration in yellow and purple. A specialty shop showed pretty sewing sets easily made. From a glass bracelet which was covered, hung a little bag for thimble, etc., a tiny heart-shaped book for needles and a scissors case all made of silk crepe. They were suspended by

cord, and a tassel finished off this pretty accessory.

Rosabella Best.

EGG ROLLS.

One cup mashed potatoes. While hot add $\frac{1}{2}$ cup sugar, 1 compressed yeast cake dissolved in cup of warm water, 1 cup milk that has been scalded and then cooked, to lukewarm, 2 well beaten eggs, 1 cup of flour. Mix well and stand bowl over pail half full of hot water. Let rise to double size, then add 1 tablespoon salt, 2 tablespoons shortening and 1 quart of flour. Knead 5 minutes, put in bowl and place over hot water as before. Let rise to double size, knead again, roll out and cut with biscuit cutter. Put in well buttered pan, let rise 20 minutes and bake. From start to finish, this should not take over 4 hours.

TO KEEP EYEGASSES CLEAR.

Editor Home Circle: I have worn glasses for years and have been much troubled by the collection of moisture on them. I am very glad to be able to tell other women who have had the same trouble that if the glasses are rubbed with soap every day and then polished, there will be no deposit of moisture.—Mrs. S. A. M., Vallejo.

SPANISH RICE.

Drain part of liquid from 1 can tomatoes. Cook pulp, press through colander and when cool put to soak in it, in the double boiler, $\frac{3}{4}$ cup washed seedless raisins. Let stand until raisins are plump. Cover $\frac{1}{2}$ cup rice with 1 quart cold water; bring slowly to boiling point. Take from fire, drain and rinse and add to tomato pulp. Add 1 large, sweet green pepper cut in shreds, 1 teaspoon salt and pint of water. Cook over lower boiler until liquid has been well absorbed and rice and raisins tender. Before serving, carefully mix in 2 tablespoons butter.



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Styleplus \$17
Clothes

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Floral Department.

[By Geo. N. Tyler.]

Conserve Moisture.—This is important as the sun gets higher, the top soil having a tendency to bake. If it forms a crust, a great deal of moisture is lost out of the soil by evaporation. Use the hoe and rake and cultivate. Keep a two-inch blanket of fine loose soil on top. You do not know what a benefit this is to your plants. You can get along with half the amount of water, and another thing, it causes the plants to send down deep roots, and by thorough cultivation, plants will go through a dry spell in much better condition. If you have to water, give a good soaking, then cultivate again. This daily watering is of more injury to your plants than good as it causes the roots to come to the top, and as soon as it dries out a little the plants wilt. A mulch is better than nothing; lawn clippings, straw or straw manure, leaves, excelsior, shavings, all make mulches, but even the mulch causes the roots to come to the top. I can grow better plants with the use of the hoe and rake, with one-fourth the amount of water that some use.

Seedling Planting.—Those who neglected to sow seed at the proper time can procure the young seedlings from the nursery men and florists. In planting out seedlings, do so on a cloudy day or in the late afternoon and evening; leave a little hollow around each plant, and fill up with water as soon as planted. The main injury to transplanted stock is caused by evaporation before the plant has begun to draw moisture from the soil. If they are very soft they should be shaded from the hot sun for a day or two. A shingle pushed into the ground on the south side leaning over the plant will do very well. But if you have a row of them, stand a board on edge against a couple of slanting stakes to keep in place.

Feed Pelargoniums.—Pelargoniums in pots are now beginning to show bud. If you want some large flowers for exhibition, work in a teaspoonful of fine bone meal to a six-inch pot. This is better than liquid manure, for manure of any kind around a geranium or pelargonium makes them make a long jointed soft growth, with lots of foliage, and few flowers, while the bone meal makes a short growth with plenty of large exhibition flowers. It is slower in action and one application will do for the blooming season.

Watsonias and Gladioli.—If you have not planted Watsonias and Gladioli do so at once in sandy soil if possible. Set them from five to six inches deep, so they will not have to be staked. In heavy soil four to five inches is plenty deep enough.

All bulbous plants in pots that are through flowering should be planted out in a shady location and watered, and induced to grow as much as possible so they will make a blooming shoot for next year. If you don't you might as well throw them away, for they will come blind, and will not bloom till the year after.

When stove pipe will not draw, a piece of zinc put on the live coals in the stove will clean out the pipe.

Good Health.

[By H. E. Pastor, M. D.]

"Cherubim on Toast."

This is what Mr. F. A. Thornley of Contra Costa Co., who criticises somewhat caustically our item on vivisection in the Pacific Rural Press of March 17th, suggests that this writer might prefer as a choice morsel on his menu. Perhaps; but as cherubim are presumably of heaven, and not of earth, and as we have not yet attained to our celestial abode, we have had no opportunity of sampling the dish. Mr. Thornley flatly contradicts our statement that man was given dominion over animals by divine law, and says that such assumption of superiority is a "natural law." May be so. In either case, however, it is a compelling principle of human action. Self-preservation is said to be the first law of nature, and, whether against the lower animals or against his fellow-beings, man always has, does now, and presumably always will recognize and act on this principle.

The real basis of Mr. Thornley's grievance seems to be that he doesn't like meat, or at least the preliminaries to the preparation of the animal for conversion into meat. Neither do we, nor many similar things. We don't even like the necessity of killing coyotes, bob-cats, bears, snakes, gophers, flies, mosquitoes, etc., but when they pit their lives against ours in the struggle for existence there is going to be a scrap, and we propose to put up the best fight there is in us. Broadly speaking, this about represents the attitude of man toward the animal creation—and so far man has won out.

If we printed Mr. Thornley's letter in full, which we would like to do, there would be no room left in our allotted space for a reply; and we can't endure to be stirred up and coked up at the same time. However, we quote this rather alarming sentence: "Personally I am too depraved to be a vegetarian; indeed, have committed many thousands of murders." This sounds like a most abhorrent confession, but we cannot be persuaded that Mr. Thornley is half as bad as he pleads guilty to being. We imagine he is a very amiable gentleman, void of offense to man or beast, and is merely a trifle peculiar in his dietetic scruples. Nevertheless, he vivisects our argument with merciless denunciation, and we feel quite cut up about it.

White Rice and Brown.

A few weeks ago we had a line or two on the subject of rice. We have just received from the California State Board of Health a circular in which Professor Jaffa has a timely word on the relative food value of brown and white rice. He says the brown rice contains about four times as much mineral matter as the white, the bran and other nutritive portions of brown rice being removed in the polishing process. He says that when the water in which brown rice is cooked is discarded much of this valuable mineral matter is lost. For this reason, steaming or preparation in a double boiler with no excess water added is recommended. This is a matter of special interest to California at this time.

California's Mineral Oil Best for Medicinal Use.

Since writing the item for the Rural Press last week on the efficacy and adaptability of mineral oils to obstinate cases of constipation, we have been favored with three little brochures from E. R. Squibb & Sons, New York, manufacturing chemists, on this subject, in which the following language occurs, which should interest Californians:

"Just as Russian oil, because is a naphthene oil, is superior to all American oils, except the heavy Californian, so is the heavy Californian liquid petrolatum in turn superior to the Russian oil, because: 1. It is free from unsaturated hydrocarbons. 2. It has a greater specific gravity. 3. It has a greater natural viscosity. 4. It is composed entirely of naphthenes." What distinction is next in order for California? There are few things worth while that California hasn't got.

HELPFUL CLEANING HINTS.

To keep the color in ecru lace dip into weak coffee.

Keep a blotting paper under silk while sponging with alcohol and there will be no ring around the spot.

Keep white silk articles, white furs and plumes in a blue-lined box to prevent their yellowing.

Gasoline removes chewing gum.

Do not apply hot water to an egg-stain as it cooks it in. Soak in cold water.

Use a bit of velvet for brushing silk. It is not so hard on it as a stiff brush.

Soften varnish stains with alcohol, then after scraping, clean with ammonia.

A good scrubbing with oxalic acid for a coarse weave and a corn meal rub followed by a peroxide bath for a finer one, will do wonders toward bleaching a last summer's hat.

Mildew may be removed with lemon juice and sunshine.



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Fast electric trains leave San Francisco every 2 hours during the day. One way fare \$2.50. Week end round trip \$3.35. Sunday round trip, \$2.50. Convenient and comfortable electric train service from Bay Cities to Sacramento Valley points, including Woodland, Marysville, Oroville, Colusa, Gridley and Chico.

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GEO. N. TYLER, Brookdale Nursery, Los Gatos.

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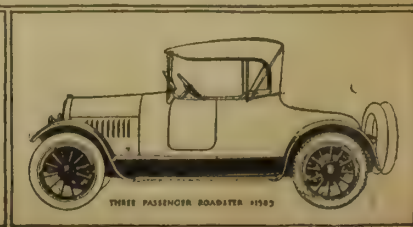
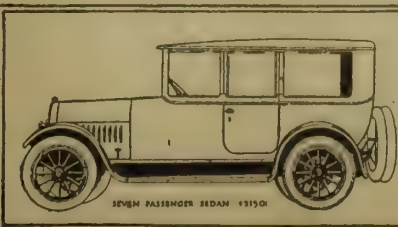
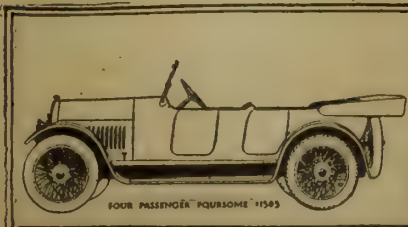
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This remarkable mechanism embodies a practical experience possessed by few manufacturers and represents the eight cylinder V-type motor at the point of its highest development. It is the most economical car for its power now being offered and is built to endure the hardest service for many years.

Sixty horse-power, Model EE may be had in four luxurious body models; Touring, Foursome or Roadster, \$1585; Sedan, \$2150. Prices F.O.B. Detroit. There is a KING dealer in your vicinity. Write for descriptive matter today and let us tell you where to find him when you are ready.

All prices quoted may be advanced at any time

KING MOTOR CAR COMPANY, DETROIT, MICHIGAN



SAN FRANCISCO.

San Francisco, March 28, 1917.

WHEAT.

The advance in wheat prices continues, despite somewhat heavier offerings. Local market conditions are all in favor of the seller and still higher figures are looked for. Northern stock is in especially good call and local dealers say that record prices on this variety are to be expected. Shipping orders are more than normal, and most of the small town dealers are getting as large a stock on hand as they can.

Sonora wheat None offered
Northern club None offered
Calif. Club, ctl. \$2.90@2.95
Northern Bluestem 3.15@3.20
Northern Red 3.10@3.20

BARLEY.

The slow production of green feed is responsible for heavy buying of barley, which is being used extensively for stock feed and a firmer undertone rules trading in this grain than for several months. Only in round lots is feed stock selling below \$2.35 per cental and general indications point to a stiffer market. The quotations on seed have been dropped, as this trade is hardly a market factor now.

Shipping, ctl. \$2.35@2.40
Brewing Nominal
Choice feed, ctl. 2.30@2.35

OATS.

White and red feed oats both advanced during the week, with Texas stock holding very firm at previous quotations. There has been an excellent shipping demand for this grain and there is every reason to look for still higher figures.

Red feed \$2.00@2.05
White 2.20@2.25
Red seed (Texas) 3.00@3.10

CORN.

The reaching of record prices on corn at Chicago has been reflected in this market by sharp advances throughout the entire list. The higher figures have apparently had no effect on trading, however, as hog owners are determined to reap the benefits of the fancy livestock prices. Egyptian corn is in very good demand and several large sales to southwestern interests reported.

[First-hand prices on strictly first-class grain, San Francisco.]
Eastern Yellow, ctl., bulk \$2.40@2.45
California, sacked 2.40@2.45
Milo Maize 2.35@2.40
Egyptian 2.50@2.60

BEANS.

This has been a quiet week in the bean market, due principally to the unsatisfactory freight conditions. Most of the lots which left here for the East within the past two months are still on the road, and those buyers have been rather wary about buying much more until their present holdings have been received and disposed of. Steadier prices on Mexican reds was the only price change recorded last week.

Bayos, per ctl. \$ 8.25@ 8.50
Blackeyes 7.00@ 7.20
Cranberry beans 9.75@10.00
Horse beans 5.50@ 6.00
Small Whites (south) 11.75@12.00
Large Whites 11.75@12.00
Pinks 8.75@ 9.00
Linas (south, reclaimed) 12.25@12.50
Red Kidney 11.75@12.00
Mexican Reds 8.00@ 8.25
Tepary beans 8.50@ 8.75
Garbanzos 4.25@ 4.50

HAY.

Receipts of hay at San Francisco were again in excess of those reported for the preceding week, but the call from the country sections is increasing and the supply is still short of the demand. Despite concerted efforts to get along as economically as possible, city holdings are rapidly dropping and country sections that ordinarily never enter the San Francisco market at this season of the year are clamoring for hay. Grass Valley ranchers report that cattle are dying by the score and that hay is costing \$36 per ton there, a quarter century record price. Modoc county is still receiving good-sized shipments of Nevada hay, but reports that stocks are still insufficient. That present California stocks will not be sufficient to carry through till the new crop is ready is the general belief. Export demand has been heavier than normal and other Western States have made inquiry in California for hay, indicating that this is not the only State in this section whose supply is below normal. The demand for alfalfa at interior points has been so good that very little alfalfa has been received here.

[Price per ton, carlots, San Francisco.]
Wheat, No. 1 \$25.00@26.00
No. 2 23.50@24.50
Tame oats 23.00@24.00
Wild oats 19.00@20.00
Barley 22.50@24.00
Alfalfa 20.00@23.50
Stock hay 15.00@16.90
Straw, per bale90@ 1.10

FEEDSTUFFS.

Feedstuffs have generally followed the lead of hay this past week, and most offerings of this type have been advanced. There is an especially noticeable shortage in middlings, and fancy offerings are commanding a premium over the quotations.

[Per ton, San Francisco.]
Beet Pulp, per ton \$32.00@33.00
Alfalfa meal, per ton 25.00@26.50
Bran, per ton 33.00@34.50
Oil Cake 4.00@4.50
Coconut cake or meal 32.00@33.00
Cracked corn 53.00@54.00
Middlings 47.50@50.00
Rolled Barley 47.00@47.50
Tankage 47.00@48.90

THE MARKET REPORTS

Figures Given Are Independent and Reliable.
Prices Quoted as Paid to Producers.

Rolled oats 45.00@46.00
Rice middlings 31.00@33.00

POTATOES, ONIONS, ETC.

Asparagus receipts are picking up so rapidly that each day sees further cuts in price, none of the dealers caring to be caught with any stock to carry over. Receipts are averaging two thousand boxes daily. The frosty mornings have cut into the quality of the peas offered, and really good stock has been commanding better figures. Lettuce held about steady in the absence of fancy grades. Potatoes and onions held practically unchanged during the week, despite the offerings of another lot of Japanese onions and one lot of Australian goods.

Asparagus, per lb. 5 @10 c
Peas, per lb. 8 @11 c
Hubbard squash, per lb. 2 1/2 @ 3 1/2 c
Lettuce, crate \$.90@1.25
Celery, Delta, crate 1.00@3.50
do, Southern, crate None offered
Tomatoes, crate Not enough to quote
Rhubarb, box \$1.25@1.65
Potatoes, ctl., Delta 3.00@3.50
Salinas Cleaned up
Oregon 3.25@3.50
Sweets, per lb. 5 c
Onions 6.50@8.30
Garlic, lb. 1@3 c

POULTRY.

The absence of Eastern competition has served to steady poultry quotations, although a combination among local retailers prevented as large an advance on hens as on the other items in the list. These men agreed among themselves not to pay more than 25 cents per pound for hens, with the result

half cent higher on all grades. A large number of dealers are storing in good-sized lots, entries at the ice house for the past week being reported as in the neighborhood of ten thousand cases. The Poultry Producers' are storing freely at this time, as are all of the speculative dealers. Those houses which store only enough to handle their own winter retail call are still holding back. The Northwest and Southern California are both heavy buyers here, and some Eastern business is reported.

Thurs. Fri. Sat. Mon. Tu. Wed.
Extras 27 27 27 27 27 27 1/2
Extra 1sts 26 26 26 26 26 26 1/2
Extra pul 25 1/2 25 1/2 25 1/2 26 26 1/2
Ex 1sts pul 25 25 25 25 25 25 1/2

CHEESE.

Higher quotations on Young America cheese and easier prices on old style Flats and Jack cheese. The shipping demand is still good and trader's sentiment seems to favor a recovery on the Flats type.

Y. A.'s 24c
Fancy Calif. Flats, per lb. 20c
Monterey Cheese 15@20c

DECIDUOUS FRUITS.

There has been no change in the asked prices on Newtown Pippin apples, with trade rather slow.

Apples:
Bellflower, box Not enough to quote
Newtown \$1.20@1.50

CITRUS FRUITS.

Quotations on citrus fruits were without change, although heavier buying of lemons followed the rumor of

FOODSTUFFS IN STORAGE IN CALIFORNIA.

The amount of foodstuffs on storage in the State was secured Mar. 1 to 5, by county assessors for the State Board of Equalization, pursuant to a Senate resolution. From the Board of Equalization's report to the Senate Mar. 21 we have cast up a few of the items, getting the following totals in cwt.: Potatoes 171,902; beans 567,977; onions 4138; rice 839,253; barley 295,075; wheat 261,017. This represents 50 counties, those not reporting having none to speak of. Sixteen counties reported practically no food supplies stored, other than required for local consumption within a month. Many other counties reported less than usual at that time of year.

that this was the top price in the market. Broilers, fryers and young roosters were all higher and fancy squabs also advanced.

Turkeys, live, lb. 22@24c
do, dressed, large, lb. Nominal
Broilers, 18 lbs to doz and less 37@40c
do, over 18 lbs. to doz. 35@37c
Fryers 32@35c
Hens, extra, per lb., colored 24 1/2 @ 25c
Small leghorn 24c
Smooth Young Roosters, per lb. 29@30c
(3 lbs. and over)
Old Roosters, per lb. 15@17c
Geese, per lb. 19@20c
Squabs, per lb. 40@45c
Ducks 21@22c
Old 21@22c
Belgian Hares (live) 13@15c

BUTTER.

Local butter traders have twice within the past week been confronted with the peculiar situation of a single price on butter. This is said to be due to the fact that nearly all of the butter being manufactured by California creameries at this time is of such quality as to grade an extra. Shipping business continues as an important part of the trade, with the East and the Pacific Northwest heavy buyers. Nominal sized lots have been sent to Southern California points.

Thurs. Fri. Sat. Mon. Tu. Wed.
Extras 36 1/2 36 35 1/2 35 1/2 36 36
Prime 1sts 35 1/2 36 34 1/2 35 86 36

EGGS.

Brisk business in eggs has more than cared for increased receipts and local quotations closed the week a

another f. o. b. advance on this fruit.

Oranges:
Navels, fancy, per box \$2.50@2.90
do, choice 1.85@2.25
Tangerines 1.50@2.00

Lemons:
Fancy, per box 3.25@3.50
choice 2.50@2.75
Lemonettes 1.50@2.00
Grapefruit, fancy 2.25@3.00

DRIED FRUITS.

There have been no notable changes in the dried fruit market during the past week, principally because buyers who could pay cash are not in the market until they know better what turn international conditions will take; and sales to the other type are not desirable or necessary this year.

[Net to growers, bulk basis, f. o. b. shipping point.]

Apples, new crop 5 1/2 @ 6 c
Apricots, per lb. 15 @ 16 1/2 c
Figs, black, 1916 6 @ 6 1/2 c
do, 1917 5 1/2 @ 6 1/2 c
do, white, 1917 6 @ 6 1/2 c
Calimyrna, 1917 9 @ 10 c
Prunes, 4-size basis, 1917 5 @ 6 c
Prunes, 1916 5 1/2 @ 7 1/2 c
Pears 6 @ 7 1/2 c
Peaches, 1917 6 @ 6 c

BERRIES.

Strawberries have been a feature of the market this past week, with good lines commanding as high as \$3.75 per crate and off-grade goods selling at \$1.50@2.25.

Strawberries, per crate,
choice \$2.75@3.75
Off-grades 1.50@2.25

Special Citrus Market Report.

Los Angeles, Mch. 27, 1917.

Shipments of citrus fruits from Southern California from November 1 to March 25, 13,911 cars oranges and 2,501 cars lemons. Same time last year 11,495 cars oranges and 2,244 cars lemons.

Shipments from Central California from November 1 to date, 4,046 cars oranges and 163 cars lemons. Same time last year 4,199 cars oranges and 143 cars lemons.

The past week saw both higher and lower markets East. Our review week started out higher with a good demand both for oranges and lemons. This was a signal for freer shipments and the current week saw the heaviest shipments of the season and the result was the improvement of the early part of the week was lost. Still all well-known brands of popular sizes sold very well. Locally the market had a little better tone. Oranges were not notably higher, though all good highly colored fruit met with good demand. Local packers bought steadily at 1@1 1/2 c per pound for paves in the grove picked. Grapefruit in better de-

mand and 1/4 c higher. Selling at 2@ 2 1/2 c per pound in the grove picked. Tangerines were dull. Not many coming in and not many wanted. Prices, 1@1 1/2 c per pound in the grove picked. Lemons still drag. The best were in fair demand at 1@1 1/2 c per pound in the grove picked, all else hard to move and have to be sold for what they will bring.

AUCTION SALES.

New York, March 26.—Sixty-one cars navels; one bloods; nine navels, bloods, tangerines and St. Michaels, and six cars lemons sold. Navels 25@ 40c lower; biggest decline on small sizes. Lemons firm. Weather fair. California navels averaged \$2.55@4.15. Lemons averaged \$3.60@4.66.

Boston, March 26.—Thirty-three cars sold. Market lower on oranges, doing better on lemons. California navels averaged \$2.50@3.80. Lemons averaged \$3.25@3.65.

Philadelphia, March 26.—Market strong. California navels averaged \$2.75@3.30. Lemons averaged \$3.40@2.80.

HOPS.

Sacramento 6 @ 9c
Sonoma 7 1/2 @ 9c
Mendocino 8 @ 9c

OILS.

Pearl Oil, per gal. 9c
do, cases two 5s 17c
Headlight, bulk 10c
do, cases two 5s 18c
Eocene, bulk 11c
do, cases, two 5s 19c
Gasoline, bulk 20c
do, cases two 5s 22c

LOS ANGELES.

Los Angeles, March 27, 1917.

BUTTER.

Receipts of week ending Mar. 27, 1917—288,560.
Receipts of week ending Mar. 27, 1916—361,720.

The market here the past week was again featureless. Receipts were lighter than last week and the same week last year. It was a 33c market for extras up to Monday. While production was reported better by some of the out-of-town creameries others said they were making no more butter. Eastern markets unchanged up to Monday from a week ago. Tuesday with higher markets both north and east the market here on call was bid up 1c but no sellers; the light receipts making holders reluctant to let go even at the highest price for two weeks.

We quote extra creamery 34c
Prime first 33c
First 32c

Daily quotations:

1917— Wed. Thu. Fri. Sat. Mon. Tu.
Extra 33 33 33 33 33 34
1916—
Extra 28 28 28 28 28 28

EGGS.

Receipts (railroads) for week ending Mar. 27, 1917—3873 cases.
Receipts (railroads) for week ending Mar. 27, 1916—4558 cases.

A steady and firm market was had the past week. Receipts were somewhat better than the week before, though lighter than the same week last year. A very good demand was had from the consuming trade and as the Eastern markets were firm with an upward tendency there was very good buying to go into cold storage. Chicago advanced 1c on first up to Monday and New York 1 1/2 c on first up to Monday. It was this that stimulated the demand from the cold storage people who profess to see in it a high market next fall and winter. Monday's prices were bid for round lots but no sellers.

Daily quotations:

1917— Wed. Thu. Fri. Sat. Mon. Tu.
Extra 28 28 28 28 28 28 1/2
Cse ct. 27 27 27 27 27 27
Pullets 25 1/2 25 25 25 26 26
1916—
Cse ct. 21 21 21 21 21 21

POULTRY.

A steady though hardly so active market was had the past week. Young stuff, fryers and broilers more than hens and roasters which continue in fair demand. Turkeys and ducks still moving fairly well. Receipts altogether local and show some falling off from a week ago. Prices unchanged.

We quote from growers:
Broilers, 1 1/2 to 2 lbs. 32@33c
Fryers, 2 1/2 to 3 lbs. 28c
Hens over 4 lbs. 22@23c
Hens, under 4 lbs. 21@22c
Ducks 22@23c
Geese 18@19c
Roosters, 3 lbs. up (soft bones) 26c
Turkeys, heavy, 12 lbs. and up 29@30c
Turkeys, light 24@25c
Squabs, live, per doz. \$1.50@3.00
Dressed 8.75@4.85

BEANS.

The market continues quiet. High prices causing buyers to hold back and buy sparingly. But as stocks in the country are light and seeding time about at hand, holders are firm.

We quote from growers:
Limas \$13.00@13.50
Large white 12.00@12.50
Small white 12.00@12.50
Pinks 9.00@ 9.50
Blackeyes 7.50@ 8.00
Tepary 8.00@ 9.00

BERRIES.

The berry season has fairly opened. Daily receipts of strawberries are being received both from the Imperial Valley and from local growers. Prices, however, are too high for a free movement as yet.

We quote from growers:
Strawberries—
Poor to choice, per case of 30 baskets, case \$3.50@4.00
Fancy, per case of 30 baskets, case 4.50@5.00

HAY.

The market has brightened up the past week. The demand from the country for horse hay shows a marked improvement. Dairy people, however, are buying little old hay, using mostly green alfalfa. Receipts light and with a better demand all round and light stocks in the country, prices are higher all round.

We quote f. o. b. Los Angeles:
Barley hay, ton \$21.00@23.00
Oat hay, ton 22.00@24.00
Alfalfa, northern, ton 20.00@22.00
Alfalfa, local, ton 22.00@23.00
Straw, ton 11.00@12.00

CABBAGE AND CAULIFLOWER.

Not much cabbage in the past week and all good firm heads were in demand and high. Receipts not only light but what generally arriving too poor to ship. Cauliflower is pretty much out of season. Not much in the past week and what arriving generally

poor, the tail-end of the crop. Closing prices \$1.30@1.50 per standard crate from growers.

ASPARAGUS.

More in the past week and prices lower. There was some home-grown as well as Imperial and Grand Island on

sale. With increased offerings and lower prices buyers were encouraged to take hold more freely. Grand Island selling in a very fair way at 15¢@17¢ per pound, Imperial Valley 12¢@15¢ per pound and local 10¢@15¢ per pound.

Special Livestock Market Report.

San Francisco, Mch. 28.

Livestock market dull for lack of supplies. Cattle not changed.

Steers, No. 1 9 1/2 @ 9 3/4 c
No. 2 9 @ 9 1/4 c
Cows and Heifers 7 1/2 @ 8 c
No. 2 7 @ 7 1/2 c
Bulls and Stags 6 @ 7 c
Calves, light 9 @ 9 1/4 c
Medium 8 1/2 @ 9 c
Heavy 7 @ 8 c

HOGS continue their upward climb with exception of lightweights which are the same as for two weeks. The Western Meat Co. pays 10c per cwt. above highest quotations for each percent above 77 that well finished hogs in good condition dress out. This is to encourage good feeding and complete finishing.

[Rough docked 20 pounds, piggy sows, 40 pounds, stags 80 pounds.]
100 to 150 lbs. 12 c
150 to 300 lbs. 13 1/2 @ 14 c
300 to 375 lbs. 13 1/2 @ 13 3/4 c

MORE SHEEP are wanted though they seem unavailable. Prices marked up 1/2 cent.

Prime Wethers 11 1/2 @ 12 c
Ewes 10 @ 10 1/2 c
Lambs 13 1/2 @ 14 c

THE WOOL situation is strong in California, but all concerned are guessing. In the East, wool is at a standstill awaiting Congress. Mendocino growers are still holding.

Sacramento Valley, spring clip, 40¢@45¢
Mendocino Nominal
Cloverdale 40¢@42¢
Southern, spring clip 28¢@30¢
Southern, 7 mos. 22¢@23¢
Imperial Valley, 7 mos. 30¢@35¢
Nevada, year's 35¢@40¢

HIDES are still stationary per quotations of past few weeks.

Los Angeles, Mch. 27.

CATTLE: Continued high markets East and independence of holders in the country caused packers the past week to bid steers up 50c per cwt. At this advance feeders were more disposed to sell and there was a fair movement to market and very good trading. Cows and heifers were also in very good demand and firm, though no higher than a week ago.

Per cwt. f. o. b. Los Angeles:
Beef steers, 1000 to 1100 lbs \$9.50@10.00
Prime cows and heifers ... 7.50@ 8.00
Good cows and heifers ... 7.00@ 7.50

HOGS: Not so many hogs coming in and the high markets East caused killers to bid prices up 50c per cwt. all round. This advance brought in a fair supply of very good hogs from California and Arizona, but mostly light weights. The high prices of feed causing raisers to run their hogs to market as soon as they make a fair showing as to weight, and not waiting for them to become good packer hogs.

Per cwt. f. o. b. Los Angeles:
Heavy, averaging 250@300 lbs. \$11.50@12.00
Mixed, 200@250 lbs. 12.00@13.00
Light, 175@200 lbs. 12.00@13.00

Rough docked 20 pounds, piggy sows 40 pounds and stags 40 per cent.

SHEEP: Offerings continue light and market firm the past week with a very good demand both for sheep and lambs. Yearlings were in especial request and their scarcity caused killers to bid them up \$1.00 per cwt. California and Arizona, as last week, furnished most of the supply. Spring lambs were in a little better supply, though are still too thin to attract much attention. What selling brought \$6.50@7.00 per head.

Per cwt. f. o. b. Los Angeles:
Prime wethers 9.00@10.00
Prime ewes 9.50@10.00
Yearlings 10.50@11.00
Lambs 13.00@14.00

CALVES: Arriving quite freely, slow sale and weak. Selling at \$8.50@9.50 per cwt.

No. Portland, Ore., Mch. 26, 1917.

CATTLE: Today's receipts totaled about 600 head, the market was rather active at steady to higher prices. Medium to good receipts of cattle were the best sales, prices in some cases being as much as 10 to 15c higher but mostly steady at last week's close. Cows and heifers met with an excellent call from all buyers. One load of beef steers brought \$9.65 with several bunches of good light steers from \$9.50 to \$9.55; while the bulk of the

medium to good steers brought from \$8.60 to 9.25; best cows brought \$8.00 with the bulk of ordinary to good kind bringing \$7.00 to 7.75; off-grade dairy breeds brought \$5.50 to 6.75. Bulls were in good demand although the offerings were very poor, which sold ranging from \$5.00 to 6.75; prime heavy bulls being quoted from \$7.00 to 7.25. There is also a good call for light feeding steers of good quality bringing \$8.25 to 8.75.

HOGS: Today's hog market was rather a drawn-out affair, buyers and sellers having a wide view at the opening of the market. One load of prime heavy hogs sold early at \$14.50 which was the top price; medium kind going at \$14.35. There were a good many buyers in the market but they had small orders. Pigs sold from \$12.75 to 13.25.

SHEEP: After a lull in the sheep division for several days a good supply was offered today, one load of prime wool lambs sold 40c over the previous record price, bringing \$13.50; one load of medium finished shorn lambs brought \$10.35. Demand was good. There were no butcher sheep in the market, although prime wool wethers are being quoted at \$11.50 to 12.00; good light ewes bringing \$10.00 to 10.75.

WEEKLY BUTTER AVERAGES.

Cents per pound for Extras.

Week Ending San Francisco Los Angeles

Jan. 9... 26.65 34.91 28.16 36.90

" 16... 27.83 35.83 28.10 37.00

" 23... 28.85 36.91 28.50 35.00

" 30... 36.33 38.48 36.66 38.87

Feb. 6... 30.25 40.00 32.33 41.19

" 13... 31.40 39.70 32.35 39.00

" 20... 32.00 36.00 32.00 37.00

" 27... 30.90 37.00 35.25 36.00

March 6... 24.08 35.50 24.16 34.50

" 13... 29.91 33.50 28.83 33.00

" 20... 28.33 33.25 27.16 33.00

" 27... 28.50 36.00 28.08 33.00

April 3... 28.50 28.83

" 10... 29.31 28.00

" 17... 27.33 27.50

" 24... 25.25 25.00

May 1... 24.33 25.33

" 8... 24.10 25.00

" 15... 24.58 25.66

" 22... 25.00 25.00

" 29... 26.50 26.50

June 5... 25.50 27.00

" 12... 25.83 27.00

" 19... 24.50 25.91

" 26... 24.50 25.91

July 3... 24.60 26.00

" 10... 26.40 26.60

" 17... 25.83 26.00

" 24... 26.00 26.00

" 31... 26.00 25.91

August 7... 26.16 26.00

" 14... 26.50 26.00

" 21... 26.50 27.95

" 28... 27.25 28.50

Sept. 4... 30.00 30.50

" 11... 30.20 32.00

" 18... 30.41 31.09

" 25... 30.41 30.50

Oct. 2... 31.66 32.16

" 9... 32.91 32.83

WEEKLY EGG AVERAGES.

Cents per dozen for Extras.

Week Ending San Francisco Los Angeles

Jan. 9... 31.41 37.91 32.00 38.16

" 16... 33.33 41.83 30.75 40.83

" 23... 34.83 32.50 34.33 33.12

" 30... 36.33 32.08 36.66 33.01

Feb. 6... 35.66 34.99 35.50 34.70

" 13... 28.90 33.30 28.00 31.66

" 20... 23.66 33.01 20.33 30.75

" 27... 23.30 29.00 18.50 27.66

March 6... 18.33 24.75 18.00 24.91

" 13... 19.50 25.96 18.91 26.08

" 20... 20.00 25.66 19.08 25.91

" 27... 21.41 27.16 20.83 28.00

Apr. 3... 21.75 21.00

" 10... 22.00 21.00

" 17... 21.16 20.91

" 24... 21.83 22.58

May 1... 21.00 22.58

" 8... 21.20 21.41

" 15... 24.58 20.83

" 22... 25.46 22.50

" 29... 25.33 24.51

June 5... 25.00 24.16

" 12... 25.00 23.75

" 19... 24.83 24.58

" 26... 24.66 24.00

July 3... 24.60 24.00

" 10... 26.30 24.00

"	17...	27.16	27.00
"	24...	28.20	28.00
"	31...	28.50	28.00
August 7...	21.00	29.16	
"	14...	33.08	31.00
"	21...	33.09	31.83
"	28...	33.50	32.00
Sept. 4...	36.13	32.00	
"	11...	37.90	36.00
"	18...	38.83	37.00
"	25...	39.75	38.66
Oct. 2...	39.75	40.50	
"	9...	42.25	43.16

Publisher's Department.

During the past week we have added 251 new paid subscribers to our list. All secured without premiums at \$1 per year.

Next week's issue of this journal will be largely devoted to the Swine Industry of California. We have secured articles from many of the leading breeders covering every department of the hog industry. The issue will contain more pages than any previous one, and will be a noteworthy contribution to the cause of placing California pure-breeds on the map.

"I am tempted to say a few words of appreciation to you about our excellent paper, the Rural Press. I've been a subscriber, off and on, for many years and always enjoyed much of its matter, but I think it is getting better, and more of it. I was especially pleased with the issue of the 3rd inst. The editorials appealed to my understanding of conditions more than anything I've read lately, and the counsel to many inquiries on many subjects agreed with my own opinions, founded on experience. So, of course, I considered the advice sensible. I congratulate you and your subscribers on the publication of a very good rural newspaper. This is just between ourselves, not for 'outsiders.' I am very truly your old friend.—Mary Stewart Smith. Yuba City.

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31x4	15.25	3.00	3.35
32x4	15.45	3.10	3.45
33x4	16.15	3.25	3.55
34x4	16.45	3.30	3.70
35x4	17.20	3.35	3.90
36x4	17.45	3.45	3.90
34x4 1/2	22.25	4.05	4.50
35x4 1/2	22.95	4.15	4.65
36x4 1/2	23.35	4.30	4.75
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The Central California Berry Growers' Ass'n, comprising strawberry growers of Santa Cruz, Monterey, San Benito, Alameda, Santa Clara, and San Mateo counties, has secured over 75 per cent of the acreage, according to a letter from President Mark Grimes of San Jose, to State Market Director Weinstock, under whose auspices the Association was formed. All members were called to meet March 29 at Gilroy to elect 11 directors, five of whom are Japanese, five white Americans, and one to be appointed by the State Market Director. The agreement covers only that part of the 1917 crop which is to be marketed directly or indirectly in any of the four Bay cities. This will be handled by the Association for the Growers, through any of an approved list of commission men.



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Forty-seventh Year

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EDITORIALS

CALIFORNIA'S SLOW GAME WITH SWINE.

[Twentieth of the Editor's Series of Historical and Analytical Sketches of California Farming.]

TWO rich perfumes welcomed the plain-crossing pioneers to California and are appreciatively praised in their records: the balsamic fragrance of the Sierra pine forests, which healed the alkaline irritation of their pulmonaries, and the odor of frying bacon, which, rising from open fires, filled the foothill gulches, and suggested joys more satisfying, for the moment at least, than the sight of gold in quartz and gravel. And these two perfumes are potent to the present day, for, though nearly seventy years have elapsed, and the third generation from the argonauts has been amply entered upon, Californians are still looking and longing for more balm and more bacon. One thing, at least, is capable of demonstration, viz.: California has pursued a stern-chase after porcine sufficiency from the beginning until now; only once catching a tail-hold and losing it again, as will be noted presently. It is, then, the purpose of this writing to deal with bacon and parts adjacent thereto and to note steps taken in California's pursuit of purposes which are still to be attained with hogs.

Swine were brought to California by the padres or by the soldiers who accompanied them—more likely by the latter. Probably they did not come with the initial expedition of 1769. At that time 229 animals are credited with arriving, but the kinds are not stated in such records as we have seen. It is reasonable, however, to exclude hogs, for one could hardly expect such pathfinders to drive a "passel of pigs" through such rough, trail-less country as they traversed. Nor is it reasonable to think that the pious fathers, whose burdens were largely ecclesiastical furniture, would tolerate nearness of these holy things to such well-demonstrated associates of the devil. However, the pigs came, and came soon, for Capt. Wm. Shaler of the Yankee ship "Lellia" landed in San Pedro bay in 1797 and "got supplies for a full year, including many hogs and sheep"—which was, perhaps, the first export business in California hogs. But the Missions had hogs, though relatively so few that they were not often separately noted in their inventories. There is, however, segregation of the smaller animals in this statement that at 17 of the Missions in 1825 there was a total of 1000 hogs and 100,000 sheep. The ratio is probably about right, though the figures have the roundness which would do credit to a modern statistician of the guessing class. But the Spanish derivatives did not have all the early pigs. The Russians at Ft. Ross in Sonoma county had hogs with their other livestock in 1812. From such sources, probably, came the "native Spanish hogs" which the Americans found here on their arrival, though it was said in 1860 that "the common hog of California was first imported from the Sandwich Islands." It is probable that the "common hogs" came to California from various sources, when the gold-seekers began to operate their appetites, and farmers seized what they could

get. The character of all of them is truthfully sketched in these words by C. H. Sessions, formerly a prominent swine-grower in Los Angeles county:

In former years, and in fact to the present day, there can be found on ranches in California numbers of the native Spanish hogs or "razor-backs." They are very hardy, but are not proof against diseases of the more fashionably bred hogs. They take care of themselves and live in swamps and river bottoms, but it requires two or three years for them to mature ready to put on fat.

THE PRECESSION OF THE BREEDS.

HOGS of the best blood of the time came to California in 1853, being included in the efforts for improved farming in that year. After satisfying demonstration of the success of this movement, the State Board of Agriculture in 1860 published this memorandum:

Seven years ago a few men saw the peculiar adaptation of our climate to the rapid development of animal existence and hence the richness of the field for the rearing and improvement of stock. They purchased at great expense of time and money, in distant portions of the earth, at great risk, a few choice specimens of blood cattle, horses, sheep and swine. Their growth and tendency to multiply more than verify the predictions of the projectors of the enterprise.

This importation was not by association; it was a group of individual enterprises in which many entered in their own ways. Contemporary records show that the breeds of hogs thus brought to the State were Westphalia, Bedford, Suffolk, Berkshire, Essex, Yorkshire, Leicester, Chester White, Irish Grazier, and China. All these were shown at fairs previous to 1863. We regret that we have no space to record the names of the pioneers who were exhibitors nor the interesting claims which they made for their favorite breeds, but we can assure our present-day readers that when it comes to making claims for breeds of hogs, they have nothing on their grandfathers. We cannot, however, exclude this general claim, officially made at the San Joaquin Fair of 1861:

The 46 hogs of pure breeds, Essex, Suffolk, Berkshire, and Chester White, exceeded all previous exhibitions in the State; indeed, could hardly be surpassed even in old England.

It was war-time in 1861 and patriotism reached even to pigs, for J. D. Patterson of Alameda county exhibited: "Union Pigs, a new breed, product of an Essex boar and a Leicester sow, three months old and looking well." It was quite the habit of the time to cross the breeds and expect much from it, which, of course, was not realized.

It is interesting to note that the color question in breeds arose very early. In 1860, Carey Peebles of Santa Clara, who had purebred Suffolks, Berkshires and Essex, and was hogging-off grain with them, said that "the Suffolks are most profitable in the pen but they suffer when allowed to graze. On account of their thin hair they get sun-burned and have a mangy appearance." This decision against the white hogs is frequently repeated in subsequent records.

Out of the contest of the many breeds cited above the Berkshire and Essex emerged as victors, in part on account of color, and later the Berkshire distanced the Essex largely because of superior size and range quality. Thus the Berkshire survived as champion over all the breeds introduced with it in 1853—most of which were utterly forgotten. Keeping pace with the development of the breed at the East and in England by scores of large importations by different breeders, the Berkshire armed itself for the contest with the more modern breeds of American naming, which is still on in the California swine world. Of these new breeds the earliest to arrive was the Poland-China—the first Magie hogs being shown by Moses Wick of Butte county in 1872 and the next year by several breeders. A few years after, Poland Chinas began now and then to beat Berkshires and Essex in classes open to all, though the Berkshire still held the lead in such tests. Even the arrival of the Duroc or Jersey Red, by several importations in 1885, did not shake the Berkshire in open sweepstakes and dropped from notice until re-introduced as the modern Duroc-Jersey by H. P. Eakle Jr. in 1905. The Berkshire and Poland China rivalry began its interesting course during the '80s and

still continues. Of the present issues between the breeds and the re-entry of white hogs we do not speak. Interesting facts by other writers may be found in this issue. Though the large importations of 1853 left only one entry for the present contest of the breeds, it was profitable in money to all who invested in it and it must have done something to lift the "common hog" of California today above the characters of the "native stock" which Americans received from the Spanish regime.

HOW THE GREASED PIG GOT AWAY.

ONLY once in nearly seventy years has the California producer gained a hold upon local consumption of pork products, and then it was a tail-hold which quickly slipped off. Of course the purpose of spending so much time and money to get the best hogs in the world in 1853 was to save the gold which was being sent away to pay for importations. And it took some bravery to entertain such a purpose. There were plenty of knoekers and croakers who shook their heads and said the "climate was too hot"; "there was no clover except in winter when hogs lived on corn"; "hog meat grown in this country would not keep," and one pessimist settled the question to his satisfaction by claiming "the baked soil of summer renders it difficult for hogs to root well." And yet brave men flouted all these discouragements and answered them by doing things which it was said could not be done. The details of such achievements before 1860 are exceedingly interesting, but we have no space for them. They demonstrated that the best hogs did better, in prolificacy and early maturity, than they did in the places whence they came; that barley and sorghum grain is as good as corn; that alfalfa is the best clover hogs ever grew upon; that the cured meat from well-bred and well-grown hogs is exceptionally good and keeps well, and they reduced the importation of salt pork from 51,169 bbls. in 1853 to 29,444 bbls. in 1859. "Thus it is seen," said John Bidwell in that year, "that as we become able to supply ourselves with necessities the importation of them declines." And during the next few years this truth became more apparent and in less than a decade, H. D. Dunn wrote in 1867:

With the exception of a comparatively small quantity of salt pork, hams and sides, mostly imported in brine from the Atlantic ports, the domestic production supplies the home demand. But a few years will pass before importations will cease entirely and California become a large exporter of salted and cured meats to countries on the Pacific and to the interior.

It was then that they had the pig by the tail and something slipped. In fact two things slipped in the latter '60s: The war contracts were no more, the pork packers of the Central West had too much product and the overland railway opened. In 1867 Dr. Holden said, in his address at the Stockton fair, these words:

Mr. Hancock, of Cragin & Co., Chicago, who was here recently, told me his firm, on taking stock a year ago, had on hand 71,000 bbls. of pork worth \$3,000,000 and bacon worth \$500,000. That is the way our Chicago neighbors do business!

It apparently occurred to Dr. Holden that the words of the enterprising Mr. Hancock were an inspiring incentive to local production, but Mr. Hancock was perhaps only the first of the procession of tired Chicago packers who have come to California since that time for recreation and have amused themselves with good strokes of business. Some of them have built up good local packing establishments and have been a great help in getting the California meat industry as far ahead as it now is. Perhaps they have done all they could do profitably and we are not asking them for more, but the fact remains that the pig our fathers hoped to catch got away and never again has the swine industry come so near to compassing the local demand and the hope of exports as it did just half a century ago this very year!

WHAT SORT OF A GAME SHOULD WE PLAY?

IT IS easier to say what the game should now be than to tell how to play it. The basic facts are that we have as good purebred hogs in this State as there are in the world; we can

grow more good hog feed for less money than any other hog-growing State can grow; we are buying, they say, fifteen million dollars' worth of packing-house products a year from other States which have no better hogs to get sires from, and worse climates for feed, growth of hogs and packing operations, and yet we are the worth of two dreadnaughts away from supplying ourselves, the worth of a whole war fleet away from what we should be selling beyond State lines, and worse off in these regards than we have been for half a century. It surely has been a slow game!

How can we play a better game with swine? We set it up this way:

1. Grow more good hogs.
2. Pay more money for good hogs than bad.

3. Pack California products under California labels.

4. Make our own people know that California pork products are as good as California oranges, raisins, prunes, walnuts, etc., by educational advertising.

5. Make the outside world recognize the same facts by similar effort and get our share of exports.

How shall the game be played? We do not know exactly, but the chief moves are these: organization, agitation, education, and legislation. It cannot be finished in a day nor in a year but it can be started in a minute in the heart of every patriotic Californian, for its benefits will accrue to every one who has citizenship or investment in this State!

By
the Editor

QUERIES AND REPLIES

Inquirer Must
Give Full Name
and Address

Too Many Millipeds.

To the Editor: For 10 years I have had a flower garden and just that long had trouble losing my nice flowering plants as soon as they get well started—especially carnations and stocks. The plants wither and die, and when pulled up I find the roots like those I am sending for examination. I also find little worms of which I enclose a few in the small paper box, and some very small white insects. The ground is full of these worms, but they don't bother dahlias, cannas, callas, verbenas, pansies and daisies.—Reader, Elk Grove.

Your pest is the common milliped (Julus hesperus), a small edition of the great thousand-legged worm which looks so formidable with its cylindrical form, shelly coat and legs too numerous to mention, which you may find under fallen leaves, etc., in moist places. The small julus is a lot worse pest than the big one. Go on growing the plants which they do not like just as you like and put the plants which they are apt to injure in a piece of new ground if convenient. If not, dig over one of the beds or borders loosely, letting the heat and dry air penetrate as much as possible for a month or more if you like. Then wet it down well and plant out the carnations and stocks which you have grown for the purpose in pots or cans. Put a slice of potato rolled in Paris green in the ground near the roots of each as you set them out and the worms will probably be killed by the poisoned potato. Handle this poison very carefully. This is an old way of trapping these ground pests which are otherwise hard to reach.

How Much Alfalfa Hay per Head?

To the Editor: Will you kindly explain the difference in the amount of food required to feed a dairy cow, and a working horse, on alfalfa hay alone? The horse weighs about 1400 lbs. Which one takes the more feed?—Subscriber, Gilbert, Ariz.

There are experiments to show that horses of that weight have been kept well enough to get around in ordinary ways on 20 lbs. of alfalfa hay per day. It has also been shown that cows (presumably of ordinary weight and product) have kept busy on 30 lbs. per day. But these figures do not indicate that these amounts are best or most profitable in results—that depends largely upon the animal and what it is being kept for. Of course a cow will eat more weight than a horse and has a much bigger place to put it.

Protecting a Lawn.

To the Editor: Gophers are digging in our newly sowed lawn and in our lawn that was planted last year. Can you please tell me how to get rid of them?—R. A., Lincoln.

If your lawn is small enough or your love for it large enough to make the expense seem reasonable, you can fence both gophers and moles out in this way: Take chicken fencing, 2 ft. wide and 1-inch mesh, and snip it through the center into strips 12 inches wide. Dig a trench around the lawn and bury the strips vertically with the selva sides near the ground surface and the cut wires at the bottom. Kill any animals you may have accidentally fenced in as they show

themselves. You will have no more from the outside. You can do the same thing with 12-inch redwood boards if you prefer. Aside from such



By courtesy Calif. Hog Book.
Feeder for alfalfa hay; self-feeder for grain; and colony house
at the Farm of the University of California, Davis, Cal.

fencing out there is no way to keep out gophers except to kill them with gun, trap, poison or cats, as has been frequently described in our columns. If you have to deal with moles, and in lawns they are frequently mistaken for gophers, it is harder to get them because they do not expose themselves for a shot and do not take poisoned vegetables. They must be speared, when moving the ground, or trapped.

Cow-peas for Hay.

To the Editor: I am thinking of growing cow-peas for feeding horses. Would it do to feed cow-pea hay and no other hay? What is the yield of cow-pea hay per acre? I have plenty of water for irrigation. How many months does it take from planting to cutting for hay, also how many pounds of seed per acre?—N. E. A., Anaheim.

Theoretically, cow-pea hay should be fed with grain hay or with grain and will do well with barley, Indian or sorghum grain. Physiologically,

this is more important if the horses are doing hard work. Practically, horses not worked or driven hard will do well on cow-pea hay alone and it is better than much of the stuff such horses have to eat. Cow-peas have yielded from one to three tons per acre according to the variety and growing conditions—probably two tons should be considered very satisfactory. Sowing after frost the first pods may appear in about 90 days. Cutting for hay should be in the first pod appearance. There is considerable variation in seeding practice; good results have been had by drilling 30 lbs. per acre and by broadcasting 60 lbs. A beginner with cow-peas in California should start in a small way and get wise. The crop has many surprises.

Leather Waste Non-Agricultural.

To the Editor: Would you kindly advise us if you know of any market for leather cuttings or scraps? In making gloves there is always considerable scraps and leavings from the leather which contains a percentage of nitrogen and makes a fairly good fertilizer.—Subscriber, Napa.

They are recorded to have practically no agricultural value because the substances they contain resist decomposition indefinitely. Even leather meal, made from grinding dried scraps, may remain in the soil for years unchanged. The stuff can be reduced with acid, but we believe it is not done because there are better sources of nitrogen available. The material may have manufacturing value, but that is out of our line.

Non-Heading Cabbages.

To the Editor: Why are my cabbages going to seed instead of heads? They were set out in October on fine land and have had good care. The plants are large and thrifty but are seeding; a very few heads forming.—L. A. M., Puente.

There are two possible reasons—probably others. If the plants get too much of a setback and become too dormant some time after transplanting they seem to think their second growing season has come and they go to seed. Such dormancy might come from drouth or from too hard freezing. The cabbage should grow continuously from seed to head. If the plants were grown from seed from plants which made seed the first year, they are apt to indulge the same habit. Therefore it is essential to get good seed grown by a man with a conscience who will grow seed only from stock which he knows to be really in its second season. Your trouble then may be due to bad growing conditions (not covered by the good cultivation which you gave) and not the defective results of bad seed.

Cleaning Ditch Banks.

To the Editor: I have a number of lateral irrigation ditch banks overgrown with Johnson and Bermuda grass. What can you suggest to treat these banks with so as to destroy vegetation?—G. S., Merced.

Get a good, sharp, flat-footed weed cutter and start it to running about four inches deep on the ditch banks every Monday morning at five o'clock. Don't wait to see anything green: Keep your eye on the calendar and the clock and work by schedule all summer—seeing red all the time. If you do this you will have the cleanest, prettiest ditch banks in the San Joaquin Valley.

If you wish to try a weed-killing medicine, spray the ground with arsenite of soda one pound to five gallons of water—using a coarse spray or sprinkler so as to wet the ground well. This will of course kill all other plants and animals which it reaches in sufficient strength, and you must calculate your own chances of doing that.

Future of the Purebred and Market Hog in California.

[By D. O. Lively, Chief, Department Live Stock Panama-Pacific International Exposition, 1915.]

Sky-rocketing prices in the hog market makes every California farmer want to kick himself for not having a lot of hogs to sell. Rolled barley, the grain feed in general use in this State for finishing hogs, occupies a moonlike altitude, and the next best or rather the next used grain feed, milo maize, is flying along on a little lower level. Yet in the face of this there are many hogs being shipped to the California packers. At the present writing it looks, too, as if the highest level in both pork and feed prices has not been attained.

The discussion just now of a possible future of the purebred industry and business of selling hogs to the slaughterer is timely. The business of raising and selling purebreds, in the majority of cases, is in the hands of what may be, for want of a better term, classed as the aristocracy of agriculture.

The Typical Purebred Man.

The breeder of purebreds is a man who subscribes to the farm papers, advertises therein, takes and reads his regular breed paper and is a member of a breed record association and of the California Swine Breeders' Association. He has his ear to the ground and knows what is going on. He contributes to public sales, writes live news items for farm press, and is up and going in every way. His future is pretty well assured. In the natural order of things he will do a lot of business attracting more attention to the excellence of his herd and expanding as a business man should. He will exhibit at the county and State fairs; will be rigidly honest about pedigrees; if he is not, the rumor of his crookedness will get about and in a short time he will automatically go out of business.

In every State where the breeding of any character of livestock is a new industry unprincipled men are sometimes attracted to the opportunities of sharp practice and consequent quick profits. There is no line of business where double dealing will be more quickly found out than in that of cooking up or substituting pedigrees for livestock. Another ill-advised practice which sometimes attaches to breeding of livestock, and especially hogs, is to attempt to sell an entire litter for breeding stock. It requires a good deal of fortitude and knowledge of type to get a breeder in the habit of taking one-third to one-half only of his big litters to keep for breeding sales purposes. When a man pays from \$100 to \$200 for a boar and an equal amount for a sow, and then when a litter of eight or ten pigs is farrowed finds it necessary to only keep four as breeding stock, he must have that characteristic which is necessary for success. Neighbors must depend upon mail orders from that breeder.

Romance of the Swine Industry in California.

The swine industry has come to

California to stay. No State in the Union that has gone into the business of raising swine ever went out of it. In some of the hog-producing States the high-cost of feeds and land tenantry conditions sometimes cause the farmer to sell off his seed stock when high prices come, then followed a falling off in production.

By and large the business of producing swine is the most attractive and profitable industry in which a farmer can engage, and, taking that as a starting point, it is safe to say that the man who is in the game of breeding purebred livestock and follows a regimen of progressiveness and rigid honesty has an assured future in California.

According to a table recently prepared by the United States Department of Agriculture, there is only 3.58 per cent of the 68,000,000 swine in the United States purebred. So much for the purebred side of the business.

Pork Producing Side.

Now for the phase that is of equal or greater importance; i. e., the pro-

duction of hogs for the market. In this California is weak. With the exception of what may be termed the desert States of Nevada, Arizona, and New Mexico, there is no State in the Union that produces so small a percentage of the pork products consumed within its borders. Albeit there is no State in the Union where swine-raising can be carried on as successfully as in California. Climate, feed, and water, the three great requisites for successful hog culture, are in better combination in California than in any other State. It is needless to dwell upon the advantage of climate and water. No zero weather and low humidity give to the California hog-grower advantages that the man in the Middle States, who furnishes the present supply of hog products, does not possess.

California's Feed Advantages.

The Californian has advantages of feed possibilities that are not equaled elsewhere. He has alfalfa; he can raise any of the root crops; and he can take his choice of bar-

ley, milo maize, or any of the other sorghums, Indian corn, waste products of the vineyard, cracked beans, fruit windfalls or paddy rice. The Middle States hog raiser sometimes has alfalfa, but generally he depends upon corn alone. With such advantages the California farmer should find it difficult to stay out of the hog business.

The Fly in the Ointment.

The only fly in the ointment to a successful continuance for increasing the volume of market hogs in California is that of marketing. Judging by what has taken place in other States and sections of the country where hog growing is carried on under greater handicaps than here, but where marketing facilities are better, if there was a central livestock market at San Francisco, dominated by a livestock exchange, and a similar institution at Los Angeles, California would not only supply its entire home demand with home-raised pork products but would be competing with the Missouri River country for a part of the

auction sales of market hogs. When asked as to the advisability of such sales it developed that there were as many conclusions and minds of the packers as there are men at the head of such enterprises. One packer said he believed auction sales were the solution of the market problem. Another said that while the market was on the ascent, events such as these would prove attractive, but when prices got to tobogganning the breeders would be greatly dissatisfied with the results attained. Another packer liked the idea of having hogs delivered to his establishment. California is a large State, second in size in the Union. When the business of growing swine assumes the proportions that it will, there would be as many auctions each day as there are counties in the State.

This condition will apply at a period of time when feed is plentiful—after that there will be a famine of auctions. Buyers will be out of occupation, and there will be no continuity of supply or means of determining storage space in the cooling rooms or taking contracts for future delivery. When these auctions are held at times when prices are normal or low, there will be certain tag ends no packer will buy; this will prove unsatisfactory to the farmer and discourage him. The central market idea is bound to come, and it will only be a few years until there are stockyards at both San Francisco and Los Angeles. At stockyards the supply of hogs comes from a large territory. There is, as a rule, a sufficient supply to enable the commission man to sort and grade ages, weights and quality into separate lots. At stockyards hogs, sheep, and cattle are sold after being fed and watered, eliminating a large part of the shrinkage incident to shipping.

The co-operative system of

marketing hogs in California has attained some proportion. In Stanislaus county the Farmers' Union have made shipments of hogs, collecting them at Modesto or other shipping point, marking them by clipping the hair of the hogs of each consignor and sending them to market in charge of a market manager. Glenn county has a man who regularly represents the members of the Farm Bureau in the sale of hogs, sorghum grains, etc. The Imperial County Valley Farm Bureau is considering the employment of such a man. This method of marketing hogs is not new. It is in effect in a great many States, but elsewhere than in California the market manager ships his hogs to a commission firm, and larger offerings are obtained.

In California the market manager ships his hogs to some packer, regardless of whether or not he gets the top of the market. There is a lack of satisfaction in not having the bids of more than one buyer. The co-operative system of shipping.

(Continued on page 424.)



By courtesy Calif. Hog Book.

Duroc Sow and Litter—the Dining Hour.

inter-mountain district and shutting out the States east of the Rocky Mountains from the trade along the Pacific ocean.

There is not space here to go into the various phases of the markets established in about twenty-five population centers in the United States—suffice to say these markets, their conduct and management are the outgrowth of an industrial need; also that similar markets will be established in California. They have been found necessary and profitable to the farmers tributary to the cities such as Portland, Spokane, and Seattle; and while the packers of California are divided about the need of stockyards for sheep and cattle, they are almost a unit in the statement that if there were stockyards there would be a better and more staple market for hogs.

Auction Sales.

Californians take a good deal of pride in the fact that they do things differently. Recently there have been pulled off in this State in one community two or more successful

Would Rather Have a Hog Ranch Than a Gold Mine.

The illustration below shows the Whitten Ranch method of pasturing the hogs. On each side of a long lane are grazing fields, all in alfalfa. There are about 30 fields on each side that are 2x20 rods, each large enough to contain 12 to 20 hogs, according to age. Farther on are several fields 4x20 rods, which will hold 40 young pigs each, but it is not considered a good plan to keep more than 20 together for any length of time, and not more than 12 after they are six months old. The hogs are turned into the different fields on one side of the lane, and remain until they have eaten all of the tender, juicy shoots of alfalfa, on which they thrive best. Then each bunch is transferred to its corresponding field on the opposite side of the lane, and the sheep are put in to crop down the stemmy alfalfa that remains. After this the fields are irrigated, and when the alfalfa is up again the hogs are returned.

The entire hog department is piped underground for water, and in each field is a trough with a float, so that the hogs have fresh, cool water at all times. Also, in each field is an inexpensive thatched shelter of straw, that affords protection from the rains in winter and the sun in summer. There are no wallows. When the herd was being established and animals were purchased that had been accustomed to wallows, they suffered considerably when deprived of them, but their pigs were never allowed to wallow and did not seem to mind the extreme summer heat and thrived better than those that had wallows. The long farrowing house shown in the picture accommodates 24 sows at a time. Each pen is 8x12 and has a guard rail all around to prevent sows from crushing their pigs.

Handling the Farrowing Sow.

A sow is put in a farrowing pen two days before she is expected to farrow, so that she may get accustomed to her new quarters. An attendant is on hand when she far-

Science and system should be given credit for the success of the Whitten Ranch, at Terra Bella, Calif., owned by R. H. Whitten of Los Angeles, who believes that the best farm implement is an office desk, and that the most effective tool is a nicely sharpened pencil. He has studied deeply, thought carefully, and planned wisely, and the result is an arrangement of buildings, fields, equipment and methods that keeps expenses to the minimum and profits to the maximum. Besides a large number of Holstein cows and Hampshire sheep, there are about 600 registered Poland-China hogs, of which Mr. Whitten makes a specialty.

rows, takes the pigs as they are delivered, and keeps them in a box (warmed if the weather is cold) until all have arrived, after which they are started nursing. After about ten days the sow and her pigs are moved to a colony house; three being put in each hog field. The Ames (Iowa) style of colony house is used. It has been found particularly suitable for this climate, as it can be closed tight and heated in winter, or thrown open so as to afford an abundance of shade in summer. There is a creep in each field, and in each creep a self-feeder is placed just as soon as the pigs are old enough to eat. By the time they are weaned (at eight weeks) they are eating so well that they hardly notice the removal of their mothers and there is no setback.

Ration for Growing Pigs.

The grain ration for the growing pigs consists of a mixture of two parts ground barley and one part shorts, and they are allowed to eat as much of it as they will until they reach about 150 lbs., when they begin to get too fat, and a filler of alfalfa meal is used at the rate of one part meal to six parts of the grain mixture. When good oats can be obtained, the amount of ground barley is reduced, and ground oats substituted. Also, a little ground milo is occasionally added for variety. At four months the pigs are culled, and those to be marketed are changed to a ration of two parts ground milo and one part ground barley—also fed in self-feeders. In addition to these grain rations, the pigs get a liberal allowance of skim milk; or, if there is not enough to

go around, tankage is substituted, and the pigs are given free access to it in the self-feeders. For roughage the pigs have green feed nearly every day in the year. In summer they have an abundance of alfalfa, and in winter they have barley, rye, millet and rape, which is disked in the alfalfa fields in the fall, and grows while the alfalfa is dormant.

A Good Hog Tonic.

In a separate compartment in each self-feeder is the Whitten Ranch hog tonic, which is compounded as follows: 8 lbs. charcoal, 8 lbs. wood ashes, 8 lbs. air-slaked lime, 6 lbs. salt, 6 lbs. bone meal, 2 lbs. powdered sulphur, 1 lb. powdered copperas. The copperas is omitted when fed to sows in pig, as it is apt to cause abortion. This tonic not only keeps the pigs in prime condition, but keeps them free from worms and enables them to make the greatest possible gains for the food consumed.

Records Food Consumed and Gains Made.

A careful record is kept of the food consumed and the gains made, and the average weight of Whitten Ranch pigs, month by month, is as follows: 1 month 16 lbs., 2 months 38 lbs., 3 months 64 lbs., 4 months 98 lbs. (cull all under 80 lbs.), 5 months 143 lbs., 6 months 185 lbs., 9 months 275 lbs., 12 months 365 lbs. Thus it will be seen that the pigs average practically one pound per day for the first year, the growth, of course, being confined to frame, bone and muscle, as the pigs developed for breeders are not allowed to put on any fat during the growing period. These weights represent the

average of all pigs not culled. The tops of litters of the biggest breeding often reach 450 lbs. in one year, and occasionally 500 lbs.

Rapid Growth of Poland-Chinas.

The Big Type Poland Chinas grow rapidly, and will finish off at any age (225 lbs. in six months if changed to a fattening ration), but they do not mature early. They keep on growing during the second and third years. Mature boars reach from 800 to 1200 lbs. and sows from 600 to 900 lbs. The dam of Mr. Whitten's leading herd boar, Jumbo Model, weighed 960 lbs. and the sire 1085 lbs., and the young boar is expected to mature at over 1100 lbs. Yet, notwithstanding this tremendous size, the Big Types of today have all of the smoothness and easy feeding qualities of the short, chubby types so popular a few years ago, and, if fattened, are ready for the market at a much earlier age and at a lower feeding cost. The culls that are to be marketed are confined in an enclosed feeding pen with a cement floor, and are fed a ration of three parts ground milo and one part ground barley; to this mixture is added tankage at the rate of one to nine, and alfalfa meal one to six. The records show that to make 100 lbs. gain it requires 270 lbs. grain, 30 lbs. tankage, and 50 lbs. alfalfa meal.

The grain not grown on the ranch was bought at an average cost of \$2 per 100 lbs., so it is now costing approximately \$6 per 100 lbs. to fatten the hogs. They are now bringing \$12 right on the ranch scales, without allowing for any shrinkage, so the profit, not counting the labor, is \$6 per 100 lbs., or \$12.25 per hog. Who says that hogs do not pay—even when raising them for the market alone?

Mr. Whitten swears by swine and system. He says that he would rather have a hog ranch than a gold mine, but he adds that brain work contributes more toward Great Success than all the results of arm and leg work put together.



The Value of Livestock to California.

A veteran Swine Breeding authority of Illinois gives our readers valuable suggestions after looking over the stock situation in California.

[Written for Pacific Rural Press by A. J. Lovejoy, Roscoe, Ills.]

The writer has been asked to give his impressions of California as an agricultural State, and what I think of it as a livestock State.

From the viewpoint of a Middle West farmer of Illinois, I am free to say that you have many things in your favor for the growing of purebred livestock that we of the farther Eastern States cannot have, viz.: the climate, for one thing, where stock can be grown with less expensive shelter, and where the forage crops can be grown and fed the year round. Of course, it looks rather queer to me to find no good warm barns, or at least very few, on the so-called ranches. To us in the East, one of the first things we plan for is good, warm barns, where all stock can be sheltered from the cold which often is very severe. Zero weather and below is a very common thing with us, and no animal can thrive unless well housed. We build our barns with a double wall, leaving a 4-inch or a 6-inch space between them, and use heavy building paper on the sheeting of boards which cover the joists, and then add the siding over the paper, and sheet up the inside of the barn with matched flooring, making a warm, almost cold-proof building. We use heating tanks to keep the drinking water in the supply tanks from freezing, and much of the time we feed our young pigs, on cooked warm feed, during the cold months. You can use such feeds as carrots, sugar beets, turnip, and rutabaga, and all kinds of roots, which we cannot do without much expense unless we have warm root cellars or bury them below frost.

We have alfalfa, of course, and make good use of it, but cannot grow but three, and sometimes four cuttings a year as we have to leave a good growth after cutting to protect the roots and crowns for the winter.

You have a variety of feeds that we do not, in the case of hog feed, such as citrons, roots, and milo maize, the pomace from the wineries, etc. I do not think you have much grass for grazing through the winter months, as most pastures that I have investigated look very bare, and you have few silos, which we consider almost indispensable. We cut up great fields of splendid corn, when in the glazed state, and while the stalks are still green, run it through a power cutting-machine and elevate it into the silo where it goes through

the process of curing and comes out a very valuable feed, that is all eaten up clean and is our very best and cheapest feed for cattle, sheep, and in a small way for horses, and is also picked over by the hogs, though they eat only the softened grain and a little of the greenest leaves. It makes a variety only for the horse and should not be depended on for a general feed.

Swine Rations.—For hog feeding we depend mostly on dry feeds, fed in the so-called self-feeders, or what is called the cafeteria system, where every pig helps himself. When the right variety of feeds are placed in these self-feeders, we have found that the pig knows as much about balancing his rations as does the college professor. To get best results give him a variety of grains and also a little tankage or meat meal, which with some alfalfa hay—when there is no green feed—and the proper mineral mixture, and he will thrive amazingly. You never have any trouble from frozen feed or the freez-

abandoned farms there. We even plow under alfalfa or sweet clover for the good of the soil. I think the time will come, to even California farmers, when the soil will need better care by establishing a more permanent system of agriculture.

Meats to Be High-Priced.—All meats are now very high in price, and probably always will be, as the country is fast filling up with consumers and we will never again see low prices. I believe that a good dairy, in conjunction with well-bred hogs, will add much to the annual income of the average ranch or farm, and also the growing of beef cattle is a good business, where proper grazing land is to be had. Why not grow more beef and mutton—both are very high now and will continue to be for many years.

The State Farm.—See what your California College farm at Davis has done for California. It has put the State on the map of the world by growing the best fat steer, the grand champion, as well as the reserve champion of the U. S., and has also bred, grown, and fed the best fat wether. I think the people of California do not realize what this means



Berkshire Sow and Litter at University of California Farm, Davis, Calif.

ing of the water.

Favorable Conditions.—I have visited a number of ranches here and find good stock, and that they are given good care and careful attention, and all stock looks well and very thrifty. You can grow fall pigs better, and make larger growth in this State, than can we of the Middle Western States. All in all, I am much pleased with California as a livestock State, and cannot see why every ranchman should not make livestock a prominent part of his business, even though he grows oranges and lemons, in part.

Keeps Up Fertility.—Livestock will do more to keep up the fertility of the ranch than anything else. One can save the purchase of so much commercial fertilizer and at the same time the land is growing better year by year. We in the East are very particular to farm our land so the fertility is growing better each year, instead of putting nothing back on the land, and gradually wearing it out. We do not intend to leave any

to the State. These prizes were won at the International Live Stock show at Chicago in 1916, competing with stock from all countries and with the best to be found. Your legislature should be proud of the work done and liberally appropriate the money to build a still greater State Agricultural College and Stock Farm. Illinois gives its Agricultural College, by vote of the people, a one-half mill tax on the dollar and it means something like four million dollars bi-annually, if I am not mistaken. We have always been very liberal with our College of Agriculture and our State Fair, and it has made Illinois stand out very prominently in these departments. Why not California? Your people have the knowledge and the enterprise, but need help from the State to accomplish greater results. After all, agriculture is the basis of all wealth.

Cold weather has retarded pastures in Monterey county.

THE PORK PROBLEM IN CALIFORNIA.

[Written for Pacific Rural Press by Cuthbert Powell.]

The demand for fresh pork in California is steadily growing with the increase in population and the substitution of the high grade and purebred hog for the scrub, giving us a better finished and more profitable hog for the packer. With better hogs packers are encouraged to enlarge the pork end of their business.

We have great diversity of crops here, two or three of which may be raised yearly through our irrigation system, enabling a ranchman to raise a few hogs at minimum cost. Alfalfa is a great growing feed for young hogs but should not be relied upon exclusively. Sorghum is a good hog feed and grows abundantly on certain soils. Sugar beets too can be fed to advantage mixed with other feeds, and their yield per acre is heavy. Barley grows well in this country, and is a good feed both green and dry. Refuse beans may also be used in the hogpen fed with other stuffs. Above all, corn should be used to top off with. Nothing takes the place of corn as a finishing feed. Corn can be grown in many places as a second crop and enough raised to finish your hogs with during the finishing process. Barley could be planted in the fall and when cut in the spring or early summer, the same ground may be put in corn. Pie-melons may be planted with the corn, and in this way three crops are raised, all making good hog feed. The pie-melons don't begin to run until after the corn has been "laid by."

Hog raising in California is a success managed along these lines if the same close attention is given it that is exacted by any other successful business. In the corn States of the Central West, where corn is the main feed, hog-raisers make their hogs weigh 250 to 300 pounds by the time they are eight to ten months old and produce a hog with 70 to 75 per cent net meat. Hog men in California should strive to attain the same results. That hogs of the Central West get better prices than California hogs on the markets here on the coast is due to several causes. Hogs sent to the Kansas City or Chicago market are either high grade or purebred and fed corn from infancy, and kept growing at the top notch from start to finish. This produces the best type of hog. It costs no more to feed and fatten a high-grade or purebred hog than it does a scrub and he responds more readily to everything that he eats, and is put on the market in good shape. This, with the fact that the hog raiser of the Central West has a broader market, accounts for the higher prices that are paid for hogs on the Kansas City and Chicago markets. Packers of these cities, too, are enabled to utilize everything about the hog save his squeal. With small packers this result is not always possible, but even when it is, the offal of 1000 to 1200 hogs per day can be handled more cheaply and to greater advantage than that of 100 to 200 hogs per day, which generally represents the daily killing of most packers here on the coast.

The Eastern packer has also an unlimited demand for his product, with the incidental advantages.

Hog Feeding Problems and Difficulties.

[By Prof. J. I. Thompson, University Farm, Davis.]

What to feed for pork production and how to feed it is often a problem. Grain is seldom relatively low in proportion to the price of pork, so that careful attention to the ration and to the manner of feeding is absolutely essential to success financially. Granted that the pigs are reasonably healthy and sufficiently well bred to be vigorous and capable of growing, the question arises:

1st. Shall the pigs be carried along on grass alone until the grain stubble is available? or

2d. Shall a limited grain ration, say two lbs. of grain for each 100 lbs. of pork, be fed in addition to the pasture and the hogs finished on stubble fields or in the dry lot immediately afterward? or

3d. Shall a heavy grain ration be fed from the beginning, with pasture when available until the pigs are ready for market?

There is no question but that some pasture is necessary for the most economical production. Recent experiments conducted by the University indicate that the first plan, pasture alone for the entire grazing season, using grain afterward to secure sufficient weight and finish, actually requires more grain than does the third system, where a full ration is fed continuously. If this is true the only question left to decide is whether a full grain ration or a limited one is conducive to the better results. This is not a question that can be readily decided experimentally, for all pigs in an experiment should be uniform in type, breeding, etc. Pigs best adapted to handle a heavy grain ration are not well adapted to a decidedly limited one when economy of gains is the main consideration. For example, pigs grown for generations on a very limited grain ration lose much of their ability to consume a heavy grain ration. Comparative results when a medium grain ration is fed against a heavy one seem to offer the best solution.

When self-feeders are used the ration is, of course, the maximum that the hogs can eat. A summary of all the results with self-feeder lots shows that pigs so fed gain more rapidly than those fed a limited ration. But still more important is the fact that less grain is required for each pound of gain. This, then, would seem to be the answer as to the desirability of the system. The most economical system must be the one that requires the least feed for each pound of gain and gets the pigs to market the quickest. Both of these requirements are secured by the use of self-feeders. It would seem logical to conclude, therefore, that the more limited the ration, the less the economy. There are just two factors to be carefully considered before adopting this system for feeding market hogs. One of these is: The hogs must have the ability to handle a heavy ration efficiently, and the second is: The pigs should be farrowed at such a date that when ready for market in the earliest possible time they will not arrive at that time of the year when the market is most liable to be overloaded.

The feeds used should be home-grown so far as is consistent with economy and rapidity of gains. The pasture should be alfalfa if possible. If not, clover, rape or sudan grass for summer, and for winter whatever will grow well. This generally means barley, rye or rape. Alfalfa hay, alfalfa meal, or mangels, where they can be grown economically, will be found useful when pasture is not available. Skim milk in the proportion of three pounds to one pound of grain is very desirable, but not absolutely necessary. Good whey for pigs over seventy-five pounds weight can be used effectively. Tankage is a desirable substitute for skim milk for brood sows and pigs, and other feeds high in protein, such

received has, in most cases, been unsatisfactory, due principally to the fact that a ration of one part of barley to three parts of alfalfa meal is too bulky for a growing pig.

Is it any cheaper? 100 lbs. of barley contains 79.4 lbs. of digestible material, which amount divided into \$1.80, the cost of 100 lbs., gives 2.25 cents which is the actual cost of each pound of digestible material in the barley that is utilized by the pig.

In 100 lbs. of alfalfa meal there are 50.7 lbs. of digestible material. Divide this 50.7 lbs. into \$1.25, the cost of the 100 lbs., and we get 2.45 cents as the cost of each pound of digestible material utilized by the pig from the alfalfa meal. This



Hog Houses and Hogs on State Farm, Davis, Calif.

By courtesy Calif. Hog Book.

as coconut oil meal and linseed oil meal, may be used to advantage by pigs being fattened for market. Barley, milo, Egyptian and Indian corn do and probably always must constitute the major part of the grain ration.

It is perhaps no more important to know what feeds are desirable than it is to be able to figure what the relative values are. In order to determine this the amount of the feed that is digested must be known. One example will suffice: When barley is quoted at \$36.00 per ton and alfalfa meal at \$25.00 per ton, it would seem that the latter is much the cheaper, and many people who formed this conclusion have attempted to feed this meal in place of much of the barley. The growth

means then that barley at \$36.00 per ton is actually cheaper than alfalfa meal at \$25.00.

A ration of three pounds of alfalfa meal to one pound of barley at the above figures would cost 9.6 cents for the digestible material, while one pound of alfalfa meal and three pounds of barley would cost 9.2 cents, a saving of practically one-half cent, and the latter ration is much more efficient because it is not so bulky.

The American Berkshire Ass'n has provided \$1200 special premiums for the National Swine Show to be held at Omaha, Neb.; and the Nat'l Swine Growers' Ass'n has offered \$800 for Berkshires at that show, according to Sec'y F. S. Springer of the Berkshire organization.

Do You Feed Hogs?

With the present feed prices the big essential for profit in hog raising is a proper feeding method. It is important that the ration be well balanced and contain in proper proportion the food elements necessary to rapid growth and development.

Digester Tankage

is a supplementary feed, designed to make up the protein deficiency in ordinary feed.

It develops bone and muscle in young pigs and makes them grow. It matures hogs for market two or three months earlier than grain alone, and makes the kind of pork that commands the top market price.

It fortifies and strengthens the system and enables hogs to resist disease.

Send for free booklet,

"PROTEIN FOR PROFIT."

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Animal Food Dept.
**Western Meat
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San Francisco

Swine Organizations in California.

[By O. L. Linn, Modesto.]

To build up any great industry, and especially where the individual contributors to that industry are essentially many, there is one thing that is absolutely necessary for the largest success and that is, to secure the willing co-operation of every individual within the range of influence of the institution to be established. Such has been the aim of those most vitally interested in building up a great swine industry in the State.

To do this it was necessary to have a parent organization to serve as a clearing house for the great work of bringing together on a common ground all the swine men of the State. Just such a parent the California Swine Breeders' Association became and a worthy "father," too, of every individual or organization of swine interests within the State; its objects being (to quote from its constitution) "to secure the co-operation of farmers and parties engaged in the raising of market or purebred hogs; to promote the business interests of its members; to procure and distribute the scientific and practical knowledge in all things relating to swine raising." This association has a just claim upon the hearty support of every swine man within the State no matter how small or in which direction his interests may lead, so long as he desires to see the swine industry in California made a real thing.

Then there are the individual breed organizations which claim the interests of their particular members according to their preference of breeds, and any man who is selfish enough to be concerned about his own welfare and those dependent upon him must needs belong. There is the Western Berkshire Congress whose particular interest is in the "Worthy Berks," and while its scope of influence is not limited by the bounds of the State, still its aims and purposes are identical with those of the parent organization and its hearty co-operation is assured for anything that makes for "more and better hogs in California."

Another worthy son of a worthy parent is the California Poland China Association, which has been recently launched. Here again we find an organization of royal boosters who have joined their efforts in winning for "The American Hog" his rightful place in the list of popular breeds in California. This organization has undertaken a worthy task and every Poland man within the State should volunteer his hearty support.

Then again steps have been taken to organize the men of the "Auburn Hog" proclivities, and while this organization, owing to the serious illness of one left in charge, has not been fully worked out, it is only a question of a short time until such will be done, for (to quote from one of these men), "The Duroc breeders realize that some such step is vitally necessary."

Then there are the various smaller country and district organizations, such as the Stanislaus Duroc Association, the Southern California Duroc Association, the Kings County Poland China Association, the Poland

China Breeders' Association of North San Joaquin Valley, and the Glenn Co. Berkshire Ass'n. All of these make their particular claims upon the breeders within their influence, and while it is not necessary for a breeder to belong to all, he should send in his application at once to the State organization and to the particular breed organization in which he may be interested.

Below are given the names and addresses of the secretaries of such organizations:

The California Swine Breeders' Association, Prof. J. I. Thompson, Davis, Sec'y.

The Western American Berkshire Congress, Arlington Smith, Visalia, Sec'y.

The California Poland China Breeders' Ass'n, R. H. Whitten, Sec'y, 610 Security Bldg., Los Angeles.

Southern California Duroc Association, R. K. Walker, Sec'y, Fontana. Stanislaus Duroc Association, Elmer Lamb, Sec'y, Ceres. Those interested in a State Duroc Association should address W. W. Everett, St. Helena.

FUTURE OF THE PUREBRED AND MARKET HOG.

(Continued from page 420.)

even in California, is a big improvement over selling to the traveling speculator. An instance of marketing direct as against selling to a speculator is shown in a California county within the last three weeks. A traveling buyer paid one man eight and one-half cents for a lot of choice, prime-fed hogs; he went over to a

neighbor and bought a lot of hogs of a lesser quality for 9½ cents; his third call was on a farmer posted on the market, who told him if he wanted his hogs at 10½ cents he could have them. The buyer paid the price. If all three of these farmers had combined and shipped their hogs to market they would have received twelve cents, which was enough to pay the freight and stand the shrinkage and leave a good margin beside.

Summary.

To sum up: (1) The business of producing purebred hogs in California may be considered as firmly established. It will grow naturally. The business of producing hogs for the market is an integral part and fixed feature of California agriculture. (2) The difficulties with

which it is now surrounded, the chief of which is the lack of marketing, will be adjusted. (3) The farmer who has been giving consideration to engaging in the hog-growing industry can make his investment with an assurance that it will pay him better than anything else.

Mr. Hog Raiser:

Here are some facts worth knowing. It does not pay to feed hogs by guesswork. Alfalfa fed hogs bring less on the market than hogs fed a balanced ration. A balanced ration produces firm meat at less cost and puts on more weight sooner and at less cost than any other feed you can use.

Feed Your Way To Success BY USING

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all of which are prepared from highest grade of Meat and Grains, balanced in just the right proportions to produce maximum results at a minimum cost.

We have found the leak in hog feeding and have assisted many of the now successful hog raisers to realize the highest market price for the least cost. Can we help you? Drop a line tonight and let us give you some inside facts worth money to you—FREE.

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providing you have your hogs vaccinated with our 20 C. C. Standard Dose Serum. You can infuse your three to ten day old pigs their natural life by using our high potent Serum and Virus.

We are in the market to buy all the stock hogs we can get. We have bought over five thousand head of fine stock hogs in Imperial Valley in the last fifty days—these we will ship to Kansas City in April. Write for free book on hog cholera.

Order your Serum from 430 Bryson Bldg., Los Angeles, Cal.

Yours for business,

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Economy Stock Powder

Conditioner: Worm Expeller: Disease Preventer:

For: Horses, Hogs, Cattle and Sheep

Not a Stock Food, but a Medicine. Not a Panacea, but a Remedy. Not a Medicated Salts, but purely a Medicine composed of the very best and choicest of Herbs, Roots, and Sodas. Not a Cure-All, but a genuine conditioner containing TEN different ingredients, scientifically compounded. No Oil Meal, No Bran, No Salt, No Poisonous or Harmful Drugs or Stimulants, such as Arsenic or Black Antimony that will create a false appetite.

Time will prove whether an article is good or bad. Economy Stock Powder has stood the test of time. It is no longer an experiment but a Compound of proven merit. Over 200,000 Farmers and Stockmen are feeding Economy regularly. A trial will convince you.

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Send me your booklet, Economize Your Farm; also a free sample of Economy Stock Powder, to try out on my stock.

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Poland Chinas, the American Hog

By W. Bernstein, Hanford, Calif.

At the recent organization of the California Poland-China Association, Mr. Bernstein was elected its first president. A. M. Brown, Sec'y of the National Poland-China Association, writes that "Members are indeed fortunate in having such a leader."—Editors.

Poland Chinas, the great American breed of easy-feeding, early-maturing swine, have led all breeds in the manufacturing of high-price pork at the least cost.

The breed was not fashioned after any hog ever seen in the world before. It had new qualities, new possibilities, a new form, and was not only a new hog, but pre-eminently the result of the environments of the American corn belt. In short, the breed is distinctly entitled to that slogan which now bids fair to become so popular, "Made in America."

Poland Chinas have carried the banner in popularity the past year as indicated by the high averages at public auction. Bred sows have sold at \$500.00, \$600.00, \$910.00, and \$975.00 per head and reports from their present owners state that they all farrowed large litters and are raising nearly all of them. We would not have our readers think that we encourage high sale averages, but the competition as was demonstrated for these sows indicates expressly the appreciation of the sterling qualities of the "Made in America" breed of swine.

The Poland-China was distinctly the result of the constructive breeding ideas of the American corn belt farmer. Breeds of many colors and different forms and characteristics were used in connection with the common hogs of the corn belt country, to produce the Poland China. In no predominating degree did the breed owe its form, conformation, and easy feeding qualities to importations, nor to any one of the numerous breeds and kinds of hogs used in the making of the Poland China.

It was about 1816 that a Shaker colony in Miami Valley, Ohio, then the chief corn producing section in the United States, began to breed the large white "China" hogs. Up to about 1845 these were crossed with various breeds, including the White Russian, White Byfield, Irish Graziers, Berkshires, and others. The effort was to produce the thick slabs of fat pork especially demanded in the Southern States. The type was emphasized, but not the color. These hogs during that period were raised in woods and farms far and wide surrounding Miami Valley; and when over a year old were driven down to this pioneer "corn belt" to put on the required fat. They were big boned, long, and deep, a type that held favor until late in the century. Since about 1870-1880, all colors except black with six white points have been bred out of all except the spotted strain.

The name "Poland-China" was adopted in 1872 at the National Swine Breeders' Convention. The breed had been known by a dozen different names based on localities where it was produced and on breeders who had been prominent in developing and fixing the type and advertising it at shows, etc.

From 1845 to 1877, improvement seems to have been by selection only, with no other recognized pure breeds being used. In 1877 the Ohio Poland China Record Association was organized. Next year the American Poland China Record Association was organized. In 1906 the National Po-

The wide dissemination of the breed outside of the corn belt in territories known as the south, southwest, west, and northwest, has been the most remarkable epoch in the way of breed extension the Poland China has ever seen. The growth in popularity of the breed has doubtless been greatly assisted by large num-



By courtesy Calif. Hog Book.
Typical Poland-Chinas.

land China Record Association was organized through combination. In 1887 the Standard P. C. Record Association was organized. Animals registered in one of these are eligible to all—a great duplication of work.

The small fine-boned silky type of Poland China began to appear late last century, but is not now widely bred. There are also the "medium" and the "spotted" types of Poland Chinas; but the great majority are bred to the large type of the earlier days of the breed. This long fixing of type makes the offspring of Poland Chinas of remarkable uniformity within each type.

The beauty of form and contour of the Poland China, emphasized by its present massiveness, is the type first set by the originators of the breed. It has been the one which received the stamp of approval, and has always had the support of the corn belt farmer of this country.

It is the form and type toward which all lard hogs in America have been working, and the success of any breed in this country, can be measured by its approach to the type of hog first seen in the Miami Valley.

bers of corn belt farmers who have settled in these territories. It is noticeable, however, that the quick growth and easy feeding qualities have commanded favorable attention from a great many people in these sections who were formerly bacon hog advocates.

California until a few years ago was conceded to be a bacon hog State; but present records indicate that the lard type predominates. Farmers and breeders are finding that the Poland Chinas make good every claim made for them, and are adapted to the conditions and feeds of California.

The Record Associations can testify as to the popularity of the Poland Chinas in California, where but a few years ago only an occasional pedigree was received for record, and today on every mail pedigrees are received from substantial, aggressive farmers and breeders.

Secretary A. M. Brown of the National Poland China Record writes me: "It is very gratifying indeed to see the interest shown in this breed by stockmen of the Pacific Coast and particularly California, which State can well boast of the interest and enthusiasm of its Poland-China breeders."

World's Champion Poland China Herd



SUPERBA 220623,
Grand Champion P. F. I. E.,
Over 100 of his sons & daughters.
All ages, Priced to Sell.

Rough's Greenfields
Arlington Station, Riverside, Cal.

MACOMBERS

POLAND-CHINAS



CHIEF PICTURE 2nd 21083,
Sire of Banker's Boy, the \$1000
boar and son of Chief's Victor,
Grand Champion Boar at Cal-
ifornia State Fair, 1916.

I am booking orders for pigs of
both sexes by Chief Picture 2nd.

J. K. MACOMBER
Tipton, Cal.

H. W. EKHOLM
ESCALON, CAL.

Breeder of

POLAND CHINAS

Sold out now, but will have fine
spring pigs to offer after June 1st.

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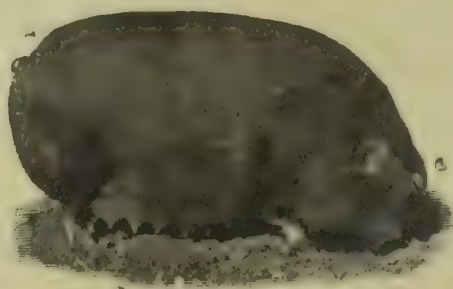
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KINGS COUNTY POLAND CHINA BREEDERS.

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POLAND CHINAS



We have a few splendid Medium Type Poland China Boars ready for service.

Also half dozen Big Type Boars, just the right age to do you the most good.

Write for prices. Will ship on approval.

L. C. Trehwitt

Manager,
HANFORD,

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Prop.
KINGS CO., CAL.

TREWHITT'S
Big Type Poland Chinas

BIG JUMBO.

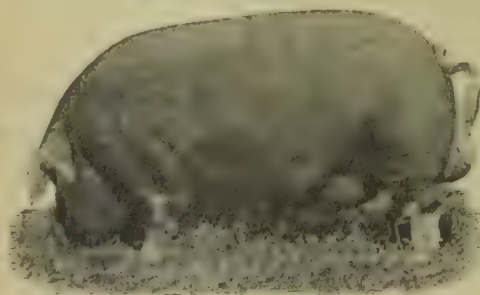
The blood lines of the herd are unexcelled, the foundation stock having been secured from the Topnotch Herds of the Middle West. Sows of fine quality, yet big and roomy. The sort that have large litters of vigorous pigs.

Can supply your wants to your satisfaction.

Write or call.

W. D. TREWHITT,

HANFORD, CAL.

JOHN M. BERNSTEIN'S HERD
of Big Type Poland Chinas

President 229941.

Quality and size combined of the best. **PRESIDENT 229941** at the head of the herd, assisted by **Fruitful Maid 532200**, **Beautiful Belle 580614**, **Lena B. 592778**, and other noted brood sows. Some of their offspring topped the Hanford sale March 7th. They are the big easy feeding kind with quality. Buy where you get the best. A few young boars for sale, ready for service, at low prices considering their quality. Gilts all sold.

JOHN M. BERNSTEIN

BOX 329

HANFORD, CALIF.

Rosemead Farm
POLAND CHINAS

Individuals from my herd won second on boar and sow at Panama-Pacific International Exposition, 1915. Champion sow at Fresno and Hanford, 1916. A young boar topped the last sale of Kings County Poland-China Breeders' Association.

YOUNG STOCK OF THIS BREEDING FOR SALE.

WRITE TO

Fred D. Ross,

Hanford, Cal.

T. J. Gilkerson

Breeder of

Poland Chinas

Young Stock for Sale

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Poland Chinas

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HANFORD,

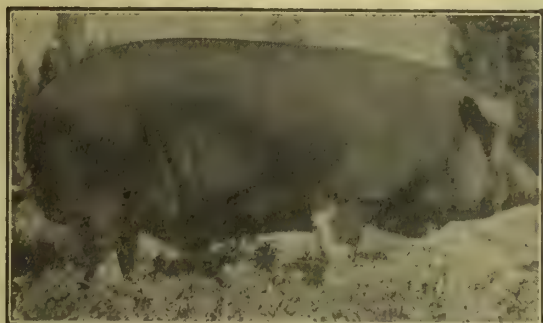
CALIF.

POLAND CHINAS

This grand breed of hogs, THE FARMER'S KIND, has been bred on my farm under my personal oversight for many years. The result is a herd of hogs that win 1st Prizes, Championships and Grand Championships wherever shown. Better than this they are all individuals of strong constitution, good bone, wide sprung ribs, splendid hams, straight, smooth and right in every way. They are easy keepers, coming to market weight and condition at six months of age. They make a profit as a market pork hog under present conditions of high feed prices. Years of experience convince me that they are the best hog for California conditions and that they are in every way

The Hog for the California Farmer

TWO OF MY HERD BOARS



SURPRISE,

First in Sacramento, 1916; first in Hanford, 1916. Sired by Gold Coin, who was third at San Francisco, 1915. His dam was Lady Style, who was fourth at San Francisco, 1915.



CHIEF'S VICTOR,

Champion and Grand Champion Sacramento, 1916; second at San Francisco, 1915. He is a half brother of Banker's Boy, my great boar that won first at San Francisco, and which I sold to Anita Baldwin for \$1000.

Herd Boars

I have five distinct strains on my farm, each headed by a boar that is of championship stock. You can pick from my herd just the blood lines and breeding that you need to start or add to your herd. I can at all times supply your needs at prices that you can afford to pay.

Visitors Welcome

My farm is located near Hanford and I shall be glad to welcome you and show you as fine a herd of Poland-Chinas as there is in the State. **COME AND SEE.**



MISS BEAUTY,

This sow was the champion at San Francisco in 1915 and champion at Sacramento in 1916. Her sire was Hustler, who was first under six months and first in young herd at the International Stock Show, Chicago, 1912. Her dam, Black Beauty, won first in 1909 at Sacramento, at Oregon State Fair, at Portland, and at the A.-Y.-P. Exposition, Seattle.



Breeding Sows

Every sow that I keep for breeding is of as high a quality as the boars to which I breed them. The result is to be seen in large litters of strong, active pigs that start right and grow rapidly into the fine prize-winning kind of hogs. The kind you want.

Foundation Herds

I can furnish foundations of unrelated strains, all of champion and grand champion stock and shall be pleased at all times to figure with anyone on costs. This is the way to **START RIGHT.**

M. Bassett

HANFORD,

CALIFORNIA

Poland-China Notes

These notes are taken from reports of Poland-China breeders sent us by request for this issue. We wrote to every breeder of whom we had knowledge. All did not respond and some reports are not entirely complete. However, we believe that on the whole they give a good idea of the amount of breeding stock and the blood lines in the State.

C. A. Stowe, Stockton, 7 sows, breeding not given. Herd boar not given; 40 head young stock.

Packwood Farm, W. F. Mitchell, Visalia, 4 sows, Silver Boy, Chief Picture and Candy Kid breeding.

T. E. Gilkerson, Lemoore, 5 sows Chief's Laddie breeding. Herd boar A. Wonder A., grandson of A. Wonder.

V. O. & T. R. Carlisle, Sanger, 30 sows, breeding not given. Boar, Wahtokey Chief, grandson of A. Wonder.

J. L. Lane, Hanford, 10 sows medium type, Bassett and Bernstein breeding. Young stock 20 boars and gilts.

T. H. Beckman, Lodi, 12 sows, blood lines not given. Herd boar, Lodi Boy. Young stock, 20 head boars and gilts.

Dimmick Bros., Lemoore, 6 sows of Chief Picture, Gold Coin and Chocolate Drop breeding. Young stock, 30 head gilts and boars.

Geo. V. Beckman, Lodi: 30 sows (breeding not given). Herd boars, Panama Knight; (2) Foxy Boy of 2nd prize sow at P. P. I. E. Young stock, 20 head.

J. McKindley, Acampo, 4 sows of Wonder, Lady Darkness and Meddler breeding. Herd boar, Chief Wonder, sired by Young's Wonder out of Lady Price.

W. T. Dice, Fowler, 8 sows of A. Wonder and Silver Boy breeding. Boar, Princess Lad, of Meddler and Hanford Chief breeding (first prize at Hanford Fair).

C. Gatewood & Son, Fresno, sows (number not given) of Big Joe, Blue Valley and Giantess breeding. Boar, Black Favorite, by Our Orphan out of Big Knox Girl. Young stock 20 head.

University of California, 12 sows from Expansion and Perfection foundation. Herd boars, (1) Big Bob Orange 3rd; (2) Meritorious (4th prize senior pig at National Swine Show 1916).

Deacon Ranch, Davis, 4 sows of Big Jumbo, A. Wonder, Meddler, and Perfection breeding. Herd boars, (1) Longfellow's Model; (2) Victor Chief. Young stock, 7 gilts and boars, and spring pigs.

California Polytechnic School, San Luis Obispo, 6 sows of Clymers, F. M. Darkness, Sunrise, Hillcroft, Hero, and Perfect I Know breeding. Herd boar Panama Chief. Young stock, 3 gilts and 6 young boars.

H. W. Ekholm, Escalon, 4 sows of Blue Valley, Good Enuff, Dude and Mascott breeding. Boar, Blue Valley Tecumseh, sired by Blue Valley out of Blue Valley Hadley. Young stock, 4 gilts, 2 boars and spring pigs.

J. M. Bernstein, Hanford, 10 sows, of Chief Picture, Big Mastiff, Candy Kid, Giantess and Queen Bess breeding. Herd boar President, son of Woodrow. Dam Giantess F.. Bred by Purcell. Young stock, 40 gilts and boars.

Rossmead Farms, F. D. Ross, Hanford, 2 sows of Warrior, Clymers, F. M. Darkness, Candy Kid and Silver Boy breeding. Herd boar Panama Black Jr., Champion at Oregon State Fair. Young stock, 60 head gilts and boars.

Bernstein's Ranch, Wm. Bernstein, Hanford: 20 sows of Big Chief Jumbo, A. Wonder, Nugget, Silver Boy, Warrior, Silver Baby, Long Model, and Candy Kid breeding. Herd boars: (1) Rosebud Chief 1st, (2) Lacy, sire King's Wonder, dam Candy Kid.

Reoaks Ranch, J. W. Hanna, Gilroy. 12 sows of Longfellow Lady,

U. S. Chief, Long Dude Up-to-date, Black Crow, Giantess, Big Surprise and Wonder breeding. Herd boars, A. Wonder and Dry Creek Wonder. Young stock, 12 boars and gilts and 96 spring pigs.

Dr. J. A. Crawshaw, Hanford, 12 sows, of Longfellow, Wonder, Long Model, Expansion and Big Orange breeding. Herd boar, President's Equal of Big Mastiff and Giantess breeding. 50 head of young stock. Spotted Poland Chinas, 2 sows. Herd boar, California Firsts.

Dr. T. B. Spaulding, Turlock, 5 sows of Chief Price, Big Ben and A. Wonder breeding. Herd boars, (1) Big Ben's Wonder by a Big Ben sire and out of an A. Wonder dam; (2) I. B. Wonder by an A. Wonder sire and out of a Smooth Price dam. Young stock, spring pigs.

Nate Hauck, Alton, 5 sows of A. Wonder, Giantess Longfellow and Blue Valley breeding. Herd boars, (1) Long Model by Long Wonder out of Miss Model 2nd bred by Fessenmeyer. (2) Cantrall's Ideal, sire Big Joe and out of Bessie Love. Young stock, 15 boars and gilts.

Chas. R. Hanna, Riverside, 3 sows, one sired by Thos. Walker's famous Blue Valley, one by a son of James' Big Orange, the other by Pacific Forrest. Herd boar (name and breeding not given). Young stock, 21 May to December pigs sired by Superba and 5 sired by Hanna's Big Bone.

W. D. Trewhitt, Hanford, 50 sows of Giantess, Silver Coin, Nugget,

Jumbo, Big Chief, and Gold King breeding. Herd boars, Jumbo Equal, sire Big Jumbo Equal. Dam Patsy C's A. B. (2nd prize P. P. I. E.) 2 Long Nelson. Sire Big Nelson, dam Big Surprise 2nd. My Choice, and Nuggett. Young stock not given.

Sandy Acre Farm, H. I. Marsh, 20 bred sows of A. Wonder, Giantess, Blue Valley, Big Bone and Hadley breeding. Herd boar, Model Major. First prize boar at Sacramento and grand champion at two county fairs 1916. Young stock not given. Just

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Get Rid of Lice

Let your hogs rid themselves of these blood sucking pests and keep free from cholera.

Churns

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Whitten Ranch Poland-Chinas

Our Big Type Money-Makers will increase your profits. They are the best hogs for business farmers, for they make the greatest weight in the shortest time at the lowest cost, topping the market at 225 lbs. in 6 months.

Get Started Right

Let us start you on the road to greater prosperity with a few choice breeders. You will be delighted with their size, type, quality, vigor, prolificacy, easy-fleshing and quick-fattening qualities—everything that goes to make the ideal farmer's profit-producing hog.

WRITE US YOUR WANTS. We have 600 head to select from and can furnish stock of all ages. Prices most reasonable and satisfaction guaranteed.

VISIT THE RANCH and see one of the largest, best-stock and best-equipped hog ranches in America. Visitors say it is a whole hog show of itself.

Ranch located at the Saucelito School Corner, between Terra Bella and Pixley, in Tulare county, but address all correspondence to

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Name

Address

Town and State

bought Knob Hill Stock Farm herd from A. M. Henry and added to Sandy Acre herd.

Ammawage Ranch, G. A. Loughery, Visalia, 30 sows. Ross, Bassett and Bernstein breeding, including sow Effie B, purchased at last Hanford Sale, sired by Georgie S and out of Queen Bess and bred to President. Herd boar Panama Silver by Panama Black (Jr. Champion Oregon State Fair) out of Silver Daisy. Young stock 40 head boars and gilts.

Forest View Ranch, J. H. Cook, Paradise, 10 sows of A. Wonder, Smooth Price, Jumbo Fashion and Blood Royal breeding, including 3rd prize sow at P. P. I. E. who has litter by Superba, grand champion P. P. I. E. Herd boars (1) Royal Sam whose sire and dam were both prize winners at Oregon State Fair; (2) a son of Big Ben. Young stock, 40 head.

Browning Stock Farm, Woodland, 40 sows of A. Wonder, Chief Price, Giantess, Longfellow, Long Wonder, Ideal Meddler and Matchless Perfection breeding. Herd boar, (1) J. O. Orange, sired by Big Orange out of Anna Price 13th; (2) Grand May sired by Model Major out of Blue Valley Giantess; (3) A son of Superba, Grand Champion P. P. I. E. Young stock, 100 head.

J. K. Macomber, Tipton. Sows (number not given). Include Candy Kid's Equal, B's Baxie and Matchless Belle. Herd boar, Chief Picture 2nd; sire of Banker's Boy (junior champion and reserve grand champion P. P. I. E.), also sire of Victor Chief (first prize boar P. P. I. E. 1915 and grand champion at Sacramento last fall). Young stock, spring pigs (number not given).

Santa Anita Rancho, Anita M. Baldwin, Santa Anita. Sows (number not given) of Chief Picture, Clymers, F. M.'s Darkness, Gold Coin, Ambition, Smooth Wonder and Chief Nelson breeding. Herd boar, Banker's Boy, by Chief Picture 2nd, out of Banker's Lady, junior champion and reserve grand champion at Panama Pacific, purchased by M. Bassett for \$1000. Young stock, not given.

W. A. Young, Lodi, 10 sows. Large type strains from best blood lines of Harry Fessenmeyer, J. W. Plander, Isaac Overton, Peter Moreno, M. P. Haucher. Medium strains from

herds of Ink Ukens, J. N. Kemp and Frankwinn. Herd boars, (1) I. B. A. Wonder, Reserve Grand Champion at Panama-Pacific; (2) Young's On the Dot. Just received from Isaac Overton two young sows out of first prize winner at 1916 Iowa State Fair.

Knob Hill Stock Farm, A. M. Henry, Farmington, 14 sows, foundation selected from Peter Mouw and W. J. Hather herds. Herd boars: (1) Mouw's Great Jumbo; (2) Smooth Orphan, bred by W. J. Hather. Young stock, 25 gilts, 8 boars and 25 suckling pigs. This is one of the best known herds in the State and consistent winner at the show ring. Since the above was in type we learn that the above herd has been sold to H. I. Marsh of Modesto.

M. Bassett Herd, Hanford, established 20 years. "Champions and Grand Champions at Alaska-Yukon and P. P. I. E. Expositions, and at California, Oregon and Washington State Fairs. Sows (number not given) of Chief Picture, Gold Coin, Banker, Hustler, and Ambition blood lines including Miss Beauty, Grand Champion sow P. P. I. E. Herd boars, (1) Chief's Victor, sired by Chief Picture 2nd out of Victoress, champion and grand champion at California State Fair 1916, half brother to Banker Boy who was first prize at P. P. I. E. and sold for \$1000; (2) Surprise by Gold Coin out of Lady Style, 3 others, names and breeding not given. Young stock number not given.

Whitten Ranch, Los Angeles, 52 sows comprising 14 imported tops from herds of Mouw, Silver, Herring, Caverly, Fessenmeyer, etc., and their offspring by leading Eastern boars. Herd boars: (1) Jumbo Model (\$1000 yearling) sired by Big Smooth Model, dam Wonder Smooth B.; (2) Mouw's Long Smooth Jumbo, sired by Mouw's Smooth Jumbo (his best boar) Mollie King 2nd; (3) Black Big Bone Jumbo, by Black Big One 2nd, out of Big Timm's Lady Wonder; (4) Supreme Wonder by Pritchett's A. Wonder out of Defender Girl. Young stock, 12 boars, and about 300 spring pigs, 64 fall gilts to breed in May. Recent importations: Sow Smooth Jumbo Masterpiece with 11 pigs by Mouw's Columbus, boar Jumbo Model bred by Chas. Herring and boar, Big Long Jumbo, bought of Chas. Herring for \$500.

Browning Stock Farm

Home of

Big Type Poland Chinas



My herd of sows represent the best big-type blood lines. Ten of them were sired by A. WONDER. Herd headed by J. O. ORANGE out of ANNA PRICE 13TH by BIG ORANGE, selected as the best breeding to go with A. WONDER sows.

Have also a son of MODEL MAJOR, First Prize California State Fair 1916, and a son of SUPERBA, Grand Champion P. P. I. E. 1916.

Can furnish any number of sows or gilts, bred or open. Service boars, young boars. Unrelated herds and young pigs.

CAN PLEASE YOU

WM. H. BROWNING, Prop.
WOODLAND - - - CALIFORNIA.

FOR SALE Price \$100

Big Type Poland China Boar

WONDER'S BLUE VALLEY 255267, sired by Blue Valley Again, dam Rood's A Wonder. This boar was second in the Under Year Class at the State Fair last fall. I bought him in dam from G. W. Seffrit, Delphos, Iowa, and would not think of selling him if I did not own his dam and sisters.

HE IS A SURE BREEDER

My Spring pigs, sired by Long Model and Cantrall's Ideal, are beginning to arrive. I expect to have something fine for the State Fair this Fall.

N. HAUCK

Breeder of Big Type Poland Chinas.

ALTON,

Humbolt Co.,

CALIFORNIA.

Forest View Ranch

REGISTERED

Big Type Poland Chinas

My foundation strain is that of BLOOD ROYAL in my herd boar, ROYAL TAM, whose sire and dam were both prize winners at the Oregon State Fair. One of my sons was third prize-winner at P. P. I. E. and has 8 fine pigs by Superba, Grand Champion Boar, P. P. I. E.

Have recently added to my herd 5 sows and boars from top of herd of Dr. T. B. Spaulding. Rich in blood of A. Wonder, Smooth Price, Jumbo Fashion, etc.

Now Booking Orders for Spring Pigs from the Biggest and Best Blood Lines of the Breed.

J. H. COOK, Propr.

PARADISE,

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Globe A-1 Cottonseed Meal & Nut Cake

45% Protein and Fats

ONE TON COTTONSEED MEAL replaces corn and hay values of \$102.24 at present prices. One feeder obtained equal results by feeding on the basis of 1 LB. OF COTTONSEED MEAL IN PLACE OF 1.37 lbs. corn, and 1.41 lbs. clover hay.

Write for Circulars and Information. Send Dealer's Name.

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These pigs are choice individuals and are cholera immune and registered free. Everything guaranteed as represented. Pigs of both sexes for sale. Write me.

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and **DUROC JERSEY HOGS**

Cholera Immunized for Life

Young Stock — Both Sexes

T. H. Beckman

Lodi, Cal.

Rough's Greenfields, W. H. Rough, Arlington, Riverside, 14 sows of Chief Price, Pawnee Lad, Big Orange, Major Lark, Sky Lark and K. C. Royal breeding, including Ameca Price 11th (the mother of Superba and sired by Pawnee Lad out of

Anna Price 2nd) Pride of the West, 3rd prize P. P. I. E. and Lady Lineature, a half sister to Superba. Herd boar Superba I, first senior and grand champion at World's Fair, San Francisco. Young stock, 100 head sired by Superba.

Commoner Hog Ailments in California.

[Written for Pacific Rural Press by Dr. H. B. Wintringham.]

California taken as a whole is probably freer from hog diseases than any other State in the Union. This is probably due in part to the State's isolation and in part to the even climate found here.

Cholera probably ranks first in losses to pigs in the State. It is found universally, with a few exceptions, in some of the more isolated mountain sections where little or no pigs are brought in and the pigs are shipped out. There have been from time to time various so-called remedies placed upon the market for the cure of this disease and millions of money has been wasted in the purchase of these so-called but worthless cures. Vaccination is to date the only weapon we have for the satisfactory combating of the trouble. In territory known to have the disease every pig should receive the immunizing treatment very shortly after weaning. This will prevent its outbreak if systematically followed up. After pigs become sick the vaccination, though satisfactory, is not nearly so effective. Money spent for serum used in the vaccination is well spent whether for the prevention or the cure of the trouble.

Swine Plague or Contagious Pneumonia is a disease found here which seems to receive little attention as compared with the damage it does. It is often confounded with cholera. It is in the main confined to young animals housed in unsanitary quar-

ters. There seems to be a fallacy that any old place is good enough to be used for the housing of pigs, and no greater error was ever made, as from a financial point of view no animal yields greater profits than the pig from a small outlay, in good sanitary quarters. Sanitation and hygiene will do more for the control of this disease than medicinal remedies. Recently there has been put on the market a vaccine for this trouble which seems reasonable and should help to cut down the losses from swine plague.

Tuberculosis will always be with us in pigs, just as long as the same trouble exists in our dairies and the waste dairy products are fed to the pigs. The losses from this trouble to the grower are not directly as heavy as some other troubles, since the animals are marketed before its ravages have become severe enough to cause death. A simple process of pasteurization would overcome the greater part of this trouble.

Anthrax takes its toll in those sections where it is prevalent, but mainly through the cattle industry, as the infection in the majority of instances is caused by the hogs feeding on the carcasses of other animals dead with anthrax. The use of the new simultaneous vaccination will, if systematically used, prevent this loss.

Parasites play their part in the economic losses in pork production. Worms are probably the most important of these. There are very few hogs which do not harbor some of these insidious invaders. The systematic feeding of remedies for the destruction of these parasites and the keeping of the feeding floors and troughs clean and well limed will overcome much of this trouble. Lice are also always with us and by their irritation destroy some of the effect which the feed should have. A simple way to get rid of them is to establish rubbing posts which are covered with burlap saturated with crude oil. Another way is to cover hog wallows one-half inch deep with crude oil.

Footrot causing lameness and therefore loss is due to infected soil. Its remedy is to make the affected animals stand in a two per cent cresol solution for periods of ten minutes twice a day until the infection is under control.

Rheumatism may be overcome by keeping the sleeping quarters warm and dry and the pens well drained. Cold and dampness induce it.



Raise Your Calves on Blatchford's Calf Meal and Sell the Milk

More calves have been raised on Blatchford's Calf Meal than on all other milk substitutes combined.

100 lbs. makes 100 gallons of milk substitute, costing only one-third as much as milk. Prevents scouring and insures the early maturity of sleek, handsome calves. It is steam-cooked and no trouble to prepare or use.

Write for Pamphlet "How to Raise Calves Cheaply and Successfully with Little or No Milk." At dealers, or Calsen Poultry & Stock Food Co., Inc., Petaluma.

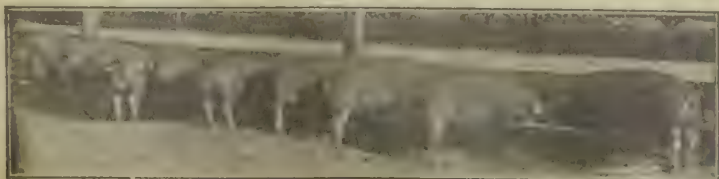
Reaoks Ranch

POLAND CHINAS
Big Type. Fine Quality

Spring pigs for sale after June 1.

W. J. HANNA, Prop.
GILROY, CAL.

LAKESIDE FARM POLAND CHINAS



Are money-makers. Satisfaction, or money refunded.
GEO. V. BECKMAN & SONS, LODI, CAL.

NOB HILL STOCK FARM REGISTERED POLAND CHINAS



TYPICAL NOB HILL BROOD SOWS.
Big Type combined with high quality.

ANNOUNCEMENT!

To My Friends and Patrons:

Owing to the fact that my other interests demand all my time and attention, I have been compelled to dispose of my herd of Poland Chinas. I am pleased to announce that they have been purchased by H. I. Marsh of Modesto and will be combined with his Sandyacre Herd. Mr. Marsh is a well-known breeder and requires no introduction to Poland China men.

He will now have one of the largest and best herds in the State and I trust you will give him the same friendship and patronage you have given me and for which I thank you.

A. M. HENRY

FARMINGTON,

CALIFORNIA



Sandyacre Farm

Home of

**MARSH'S BIG TYPE
POLAND CHINA HOGS**

"MODEL MAJOR," winner of three firsts and two Grand Championships, is at the head of my herd of prize winning sows. My sows are the easy feeding, big litter kind that have quality.

Now booking orders for June delivery of Spring pigs. Satisfaction guaranteed or money refunded.

H. I. MARSH Modesto, Cal.

ANNOUNCEMENT! Have just bought the Knob Hill Poland China Herd of A. M. Henry of Farmington. The addition of this well-known herd to mine makes it one of the largest and best in the State.

Poland China HOGS

Large, Smooth Type. Best of Breeding! Will make 200 lbs. in six months.

I SELL DIRECT.

I Guarantee Satisfaction.

O. L. LINN

Linview,

Route A, Modesto, Cal.

The Berkshire---Oldest of the Breeds.

[By Arlington M. Smith, Visalia, Secretary Western Berkshire Congress.]

Among the leading breeds of the swine family in America is the Berkshire. This breed is very popular on the Pacific Coast; its popularity increases each day. Berkshire style and finish, easy feeding and rustling qualities appeal to the imaginative and practical farmer; and the high dressing percentage, and quality and flavor of the pork make them a favorite with the packers. These things, together with the splendid bunch of boosters back of the breed in the West, are putting "Berkshires on every farm" with a rapidity that is astonishing.

As far back as 1789 this long hog was widely known in England and Scotland. The Berkshire is generally known as an English hog, though American genius has brought about wonderful changes and improvements. The aristocratic hog of today who turns up his nose at others of the swine family is very different from his old English ancestors of a century and a quarter ago, the most popular hog in Great Britain at that time. He was a large, rangy, reddish brown hog with sloppy ears. This reddish tinge still shows up in some strains of the breed, but it is nothing more than a sign of purity. Since that date Chinese, Siamese and Neapolitan blood have been freely used to establish a better type, but the Berkshire is still a hog with size notwithstanding the use of so much small type.

The breed originated in Berkshire County, England; and first importations were made to the United States (New Jersey and New York) as early as 1825. From this date the breed spread rapidly and grew in favor till 1855 when a "boom" was experienced and many new importations made. When the Civil War came to a close the Berkshire was the purest breed of swine in America.

During the last seventy-five years much improvement has been done by selection with few importations; and now it is said that the American Berkshire is superior to the English. This is probably due to the fact that the swine industry is carried on so extensively in the United States that exceptional individuals appear so much more frequently.

The Berkshire today is long, smooth, with full flanks and hams that extend well down toward the hocks. The back is slightly arched with ribs well sprung, good depth and even bottom lines. He stands on good feet well set apart and handles

himself with ease. His head is short and well dished, his ears erect, his eye wide-open and clear. The boars are very prepotent and the sows prolific, careful mothers and good sucklers, raising a large percentage of the number farrowed.

The American Berkshire Association, the first association for the registry and publication of pedigrees of swine, was organized at Springfield, Ill., March 25, 1875. Geo. M. Caldwell of Williamsville, Ill., was elected president. Hon. A. M. Garland, Secretary of the Board of Agriculture of Illinois, was elected Secretary, and Phil M. Springer, assistant secretary and treasurer. In 1877 Mr. Springer was elected secretary and treasurer, and in 1899 the Association was incorporated.

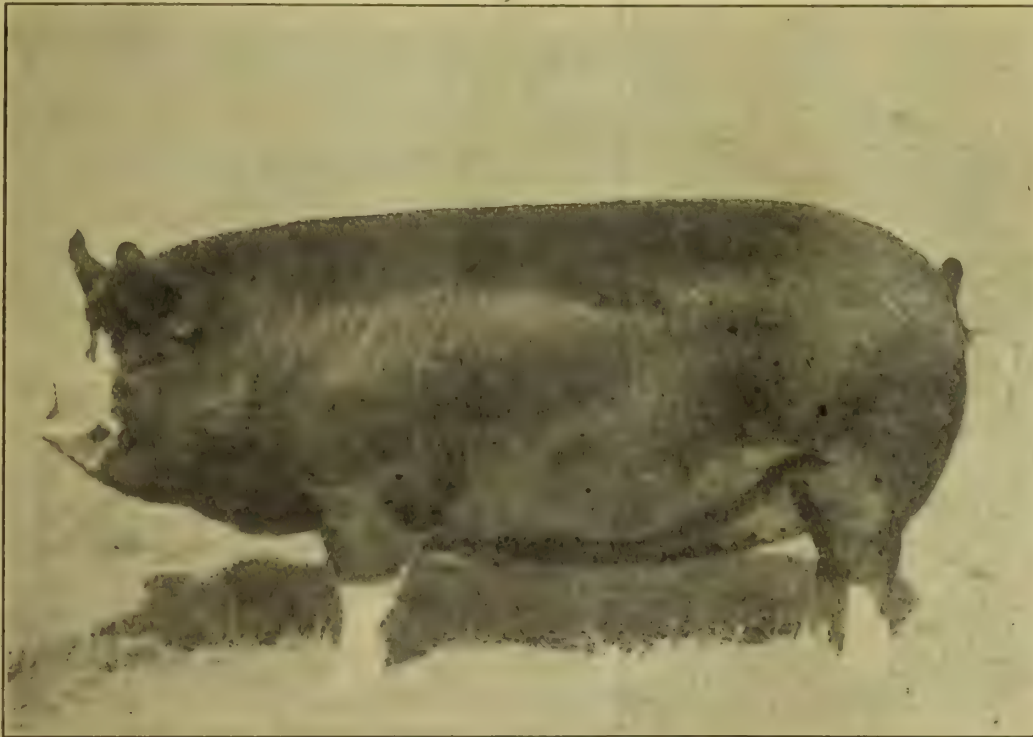
Berkshire breeders the country over are good-spirited, aggressive men with individuality. There is not another livestock organization where good fellowship and a spirit of boost

all sheep raisers in their section, have been compelled to supply some supplementary feeds in addition to corn silage, which they have used in past seasons.

To satisfy themselves as to the efficiency of various feeds, three lots of 150 head each were selected last winter. One lot was fed corn silage and all of the volunteer hay they would eat. Another was fed a ration of alfalfa meal and cane molasses, while a third was fed a ration of one-third alfalfa meal, one-third cane molasses and one-third Indian corn.

In checking up on the three lots after 30 days, Mr. Rutherford, superintendent of the ranch, found that those fed on silage lost 130 pounds, those on molasses and alfalfa meal gained 160 pounds and those on corn, molasses and alfalfa meal gained 890 pounds.

The weather during the 30 days was as bad as any experienced dur-



An Outstanding Berkshire, Forest Grove Laurel 2nd—A fine type.

is more apparent than the Berkshire Congress. This same spirit is the first essential toward the advancement of any common cause and this unique organization affords opportunity for acquaintance and co-operation.

At the Panama-Pacific Exposition in 1915, the Western Berkshire Congress was organized and since then this association has been quite active. At this time its officers are: F. R. Steel, president, and Arlington Smith, secretary. The first Western Congress sale was held in 1915, at which prices averaged \$150 per head. At the State Fair in 1916 the second sale was held, at which Berks sold for an average of \$100. In February, 1917, the third sale was held at the State University Farm and prices averaged \$130.

SHEEP FEEDS IN DRY SPELLS

[Written for Pacific Rural Press.]

Keep your sheep in good condition even if you have to supply expensive feed in dry seasons, is the policy of Bishop Bros. with their flock of purebred Shropshires.

During the past season, they, like

ing the winter, and for that reason Mr. Rutherford felt well satisfied with the gains made on the alfalfa, corn, and molasses ration.

He questions the advisability of trying to profitably fatten sheep on this ration, but states it is the best supplemental feed he has found for carrying sheep over dry spells.

BREED for Bigger and
BETTER Hogs, by raising
BERKSHIRES, Easy Keep-
ers and
BY Test the Best
BREEDING Size and Qual-
ity. Use
BOARS that are Sired
BY one of the Best Boars—
BARON LONGFELLOW
2nd Combination. And

You get all

I am now booking orders for the Spring litters from such good sows as ARTFUL'S QUEEN 22nd, 197571, a daughter of ARTFUL MASTERPIECE 110970. TRIXIE M. 2nd, 163982, a good daughter of RAVENWOOD, LONGFELLOW 10th, 136430, and FOREST GROVE LADY 3rd, 212383, a daughter of AMES RIVAL 39th, 180364. All bred to BARON LONGFELLOW 2nd COMBINATION, 180700.

Order Early
and Get the Best.

Dean Beeman

WOODLAND, CALIF.

Berkshire Boar

FOR SALE

MAY STAR 170735

Also two of his daughters out of Mayhew's Queen 2nd.

Apply MRS. J. C. TODD,

Box 431,

Monterey.

FOR SALE

BERKSHIRE BOAR

MAJESTIC'S KING 6th

First prize, 1916 California State Fair.

PERKINS & CO.,

PERKINS,

CALIF.

HEDGEMERE FARM

Offers for Sale

Registered Berkshire Boars

Sired by

Grand Leader 2nd

H. J. HAMMOND,

Box 338,

Sacramento

GEO. M. YORK

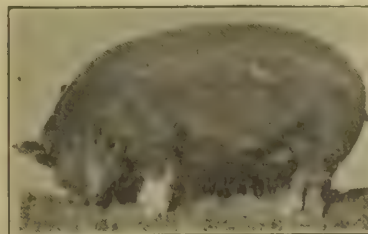
MODESTO, CAL.

Breeder of

FINE BERKSHIRES

Spring pigs by Premier Leader for sale this Summer and Fall.

Berkshires



Congressional Miss, 231873

MAPLEWOODE RANCH

E. M. HOLJE, Owner,

HOMER HEWINS, Jr., Manager,

CALISTOGA, CAL.

We have a few late fall and winter pigs to offer. They are bred in the most popular lines of the breed.

We guarantee satisfaction or you get your money back.

Berkshire Jottings

These notes are taken from reports of Berkshire breeders sent us by request for this issue. We wrote to every breeder of whom we had knowledge. All did not respond and some reports are not entirely complete. However we believe that on the whole they give a good idea of the amount of breeding stock and the blood lines in the State.

Cedar Hurst Farms, Sacramento: Five sows Kennet and Chiefs Princess breeding.

Geo. J. Carr Ranch, Marysville. Just starting foundation mostly Grand Leader breeding. One sow three gilts and young boar.

Geo. Kounias. 6 sows of Grand Leader 2nd, Rookwood and California Royabet breeding. 14 young gilts. Boar Premier Longfellow.

G. A. Murphy, Perkins, Seven sows of Robins Ruby and Columbia Model breeding. Boar Kennet Lee Jr., grandson of Kennet. Young stock and spring pigs.

Chas. Goodman, Williams. Seven sows of Black Robinhood, Baron Duke and Masterpiece breeding. Young stock, 15 head. An old established and well known herd.

Lomas Altos Ranch, Monterey. Three sows of Fashion Longfellow, Mayhews Queen and May Starr breeding. Herd boar, May Starr by Superior Starr out of Highwood May Belle.

Dallas Bache, Hollister: Ten sows of Matchless Longfellow, Fashion Longfellow, Columbia Model and Longfellow Premier breeding. Herd Boar sired by Grand Leader 2nd out of Mayhews Queen.

Geo. M. York, Modesto. Seven sows of A. B. Humphrey, University Farm. Hood Farm and W. E. Spicer breeding. All to farrow spring pigs by Premier Leader and Loyal Duke.

A. L. Stephenson, Los Molinos. Three sows of Duke, Silbira and Laurel Champion breeding. Herd Boar, Tehama Chief by Panama Lee out of Mayhews Dora. Young stock 7 spring pigs.

Holbert Farm, H. Gist, Tulare. Six sows of Longfellow, Rival Baron Premier Ravenwood, Dutchess and Masterpiece breeding. Boar, Winona Dukes Champion by Laurel Champion out of Dukes Lady Value 10th.

Oak Grove Dairy Farm, Woodland: 20 sows of Masterpiece Improver, Longfellow, Charmer's Duke, Robin Hood, Baron Compton, Berryton, Premier and Belle Wilts breeding. Boars (1) Brinton Longfellow (2) Improver B (3) Ravenwood Longfellow's Rival.

Perkins Company, Perkins. Three sows, Highwood Columbia and Legal S. breeding. Herd boar, Majestic King 6th, first prize at State Fair 1916, by Ruby King 4th out of Majestic Bernice 9th. Young stock, 25 gilts and boars.

Pacific Sugar Corporation, Tracy: 24 sows of Rival's Champion Best, Baron Duke, Rookwood Lady, Lord Premier, Longfellow, Dutchess and Masterpiece breeding. Herd Boar Ames Rival 45th. Young stock (number not given).

Rancho De Napa, Frank B. Stetson: 3 sows, daughters of Artful Masterpiece and Iowana Majesty. Pure bred to Masterpiece and Lord Premier. Herd boar, Oaks Superba by Superbus out of Baron's Belle; 15 head young stock, 15 gilts and boars over 6 months and spring pigs.

Hedgemere Farms, H. J. Hammond, Sacramento. Two sows, of Fashion Longfellow, Star Value and Grand Leader 2nd breeding. Herd boars (1) Hedgemere Irving, by Grand Leader 2nd out of Golden Lady Value; (2) Hedgemere Benjamin, litter mate to No. 1. Young stock, two boars, one gilt.

University of California, Davis. Twelve sows of Ravenwood Longfellow, Rivals Champion Best, Superior Star and Grand Leader 2nd breeding. Young stock (number not given), sired by Star Leader, Re-

serve Grand Champion at P. P. I. E., recently sold to Anchorage Farm for \$1500.

Santa Anita Rancho, Santa Anita: Sows (number not given) Laurel Champion, Robinhood, Dutchess, Baron Duke, Premier, Fashion Longfellow and Grand Leader 2nd, breeding. Herd boar, Kintyre Laird, Reserve Senior Champion at Panama Pacific, by Kintyre Duke out of Monarchs Dutchess. Young stock (number not given).

Sierra Madre Ranch, Russ Avery and J. K. Miller, Lancaster: 36 sows Laurel Champion, Dutchess, Silburfa Belle, and Columbia Model breeding. Herd boars: (1) Ames Rival 106th bred by Rookwood Farm Iowa and Yatama Sunrise 20th, Grand prize winner at P. P. I. E. Young stock (number not given). High class young boars and gilts of promise.

Brighton Farm, H. L. and E. H. Murphy, 30 sows of blood lines of best Berkshire families among them. Ideal Lady Panama Dutchess, Rival's Pointer Star 15th, Majestic Girl 10th, etc. Boars: (1) Rival's Robin 2nd Grand Champion at Sacramento 1916, (2) Lustre Robinhood (3) Mayfield Champion (4) Artful King 11th. Young stock, number not given. Spring pigs. This is one of the pioneer Berkshire herds and has an enviable show record.

W. H. Waugh, Riverside: Sixteen sows of Star Value Masterpiece, Rival's Champion's Best and Baron Duke breeding. Herd boars (1) Wilts Masterpiece by Artful Masterpiece out of Belle Wilts. (State Fair blue ribbon winner). (2) Values Bachelor by the \$4000 Star Value out of Lady Bachelor 5th. (3) Pacific Star Masterpiece. (4) Fontana's Rival Masterpiece (combines Rival Champion's Best and Masterpiece breeding).

Shady Glenn Stock Farm, Dean Beeman, Woodland: Sows (number not given) of Ravenwood Longfellow, Artful Masterpiece, Lord Premier and Rivals Champion's Best breeding. Herd sire, Baron Longfellow 2nd Combination, a grandson of Baron Longfellow 2nd, reserve grand champion at St. Louis World Fair in Longfellow breeding. Young stock sired by Baron Longfellow 2nd Combination.

James Mills Orchard Company, Hamilton. Fifty sows of Laurel Champion, Silbira, Lustra and Improver and Rival's Champion Best breeding, including Forest Grove Laceral 8th, reserve grand champion sow at 1916 California State Fair. Boars, (1) Ames Rival 70th; (2) Bandmaster 2nd; (3) A son of Grand Leader 2nd; (4) Mill's Improver 2nd. Young stock, 75 head gilts and boars.

Hopland Stock Farm, A. W. Foster Co., Hopland: 24 sows. Masterpiece and Longfellow breeding also Lady Mayhews, a daughter of Grand Leader 2nd, and Grand Champion sow at Western Berkshire Congress Show, Sacramento 1916. Boars (1) Royal Painter 2nd, (2), Iowana Rival Majestic (Reserve Grand son of Rival's Champion. Young Champion at Sacramento 1916). A stock, 100 head gilts and boars.

Rose Crest Berkshires, F. L. Hall, Perris: 14 sows of Grand Leader 2nd, Laurel Champion, Rival's Champion best Masterpiece, and Robinhood breeding, including a litter sister to Junior Champon boar, Sacramento 1916 and five grand daughters of Rival's Champion Best. Herd Boar Ames Rival 118th by Rival's Champion Best out of Successor Duchess 8th. Young stock (number not given) spring pigs of fine type by Ames Rival 118th.

Anchorage Farm, Mark Requa, Orland. Twenty-four bred sows of Rival's Champion, Rival's Champion Best, Lord Premier, Panama Lee and Superbus breeding. Herd boar, (1) Star Leader, son of Grand Leader 2nd and reserve grand champion to his sire, at World's Fair Swine Show P. P. I. E., purchased from University Farm for \$1500; (2) A young boar sired by Mayhews

Grape Wild Farm BERKSHIRES



Grand Leader 2nd—World's Fair Grand Champion.

At the P. P. I. E. on 18 entries we won 24 ribbons, including 7 Firsts, 4 Championships and Premier Breeder.

At the 1916 State Fair: The Get of Grand Leader won Grand Champion Sow, and she sold in the Congress Sale for \$500—the highest price ever paid for a California bred Berkshire Sow. Also won first on Get of Sire; First on Aged Sow; First, Senior Yearling; First, Junior Yearling, and second Under Year Sow.

A Sow Bred to Grand Leader topped the list at the Berkshire Congress Sale and one of his sons recently sold at private sale by the University of California for \$1500.

Present Sale Offerings—Ten Service Boars 8 to 14 months of age at Farmers' Prices. We have the best and we want them in the hands of real Farmers.

February and March Pigs Are Coming on Fast and we can furnish Boars and Sows, or Trios, unrelated.

We can furnish a few Bred Sows, but we will hold the most of our young females to be bred for August Sale of Bred Sows. Watch for announcements later.

A. B. HUMPHREY, Prop.
ESCALON, SAN JOAQUIN CO., CALIF.

Brighton Farm Herds Our Berkshires

Are the result of years of selecting and breeding with a definite type in view. We are carrying the blood lines from the best Berkshire families in America. We are carrying 30 head of brood sows and young stock and offering only the choice individuals to our customers for breeding purposes.

WE ARE NOW BOOKING ORDERS for weanlings, either sex, for May delivery from such sows as Murphy's Ideal Lady, Panama Duchess, Rival's Pointer Star 15th, Majestic Girl 10th, etc., sired by Lustre Robinhood, Mayfield Champion and Artful King 11th, all prominent Boars of the breed.

SHORTHORN CATTLE

Our foundation families have been bred on this farm since 1880. During the past few years we have been adding to our breeding herd a few choice females selected from the best blood lines of the Middle West.

We are now offering a choice lot of imported Range Bulls and are booking orders for selected herd bulls and females for our next importation.

H. L. & E. H. Murphy

PERKINS,

(Six miles east of Sacramento)

CALIF.

GLENN COUNTY, CALIFORNIA --- BERKSHIRE HEADQUARTERS

Berkshires

Special sale of Bred Sows and Pigs

WE ARE OFFERING AT PRIVATE SALE 50 BRED SONS
AND 40 PIGS AT FROM \$20 TO \$200.

WE WANT EVERYONE INTERESTED TO COME TO THE
RANCH AND SEE THEM.

SPECIAL PRICES on lots of five or more

THESE ANIMALS REPRESENT THE BEST
FAMILIES IN THE BREED

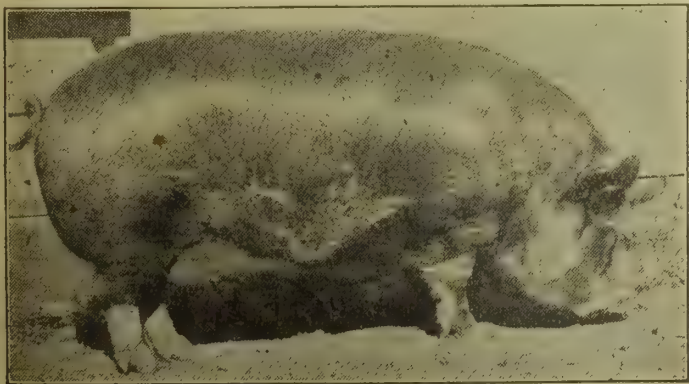
Butte City Ranch

BOX P, BUTTE CITY, Glenn County, CALIFORNIA

—We also breed Shorthorns, Shropshires and Ponies.—

Hardy Prolific Berkshires

The type we are breeding for. Sows are of the best blood lines breeding. Strong standing, prepotent Boars. In short, the best possible specimens of the Berkshire Breed.



WINONA ROYAL LAUREL 2nd.
A Daughter of Laurel Champion out of Princess Royal.

We aim to do this by breeding large numbers and from them making rigid selection of only the best individuals from the best litters for breeding stock.

IF YOU WANT GOOD BERKSHIRES WE CAN SUPPLY YOU

James Mills Orchard Corporation

HAMILTON CITY,

CALIFORNIA

Anchorage Farm

ORLAND, CALIFORNIA

Quality Products

HOME OF

STAR LEADER

JUNIOR CHAMPION AND RESERVE
GRAND CHAMPION TO HIS SIRE,
GRAND LEADER 2ND, AT THE PAN-
AMA PACIFIC INTERNATIONAL EX-
POSITION.



THE SOWS OF OUR HERD WERE SE-
LECTED FROM THE BEST TO BE HAD BY
W. S. GUILFORD, PROF. J. I. THOMPSON
AND A. B. FROST. A NUMBER OF THEM
ARE GRANDDAUGHTERS OF RIVAL'S
CHAMPION. IT IS UNNECESSARY TO
POINT OUT THE EXCELLENCE OF A
CROSS BETWEEN THIS STRAIN AND
STAR LEADER.

Correspondence Solicited

"Berkshires on Every Farm"

Leader 6th out of Panama Belle. Young stock, 50 January pigs.

Pelko Ranch, Willows: Forty sows, Rival's Champion Best, Masterpiece, Great Grand Leader 2nd breeding. Herd boar, Artful Leader by Star Leader out of Artful Belle: Young stock, 21 pigs.

Whittier State School, Whittier: Fifteen sows of Masterpiece, Robih Hood, Royalist, Duchess, Rival's Champion and Rookwood blood lines. Herd boars: (1) White's Longfellow by Oake's Longfellow 9th out of Fair Duchess 2nd; (2) Ames Rival 117th by Artful Duke 32nd out of Rookwood Lady. Young stock, 30 gilts, 19 boars, 15 suckling pigs.

Normandy Farms, Arlington M. Smith, Visalia. 21 sows of Laurel Champion, Baron Duke, Lord Premier, Masterpiece Berryton Belle, Princess Royal S., and Rivals Champion best breeding. Recent addition to sow herd, 3 Silbirla Lustre sows and a daughter of Fashion Longfellow bred to Grand leader 2nd. Herd Boar, Winona Royal Champion 5th. Junior Champion Boar of Western Berkshire Congress Show Sacramento to 1916 son of Laurel Champion out of Princess Royal S. Young stock, 30 head fine boars and gilts.

Grapewild Farms, A. B. Humphrey, Escalon (World's Champion herd. Won most money and most first prizes at P. P. I. E. 1915. 100 herd boars. 1 Grand Leader 2nd (Grand Champion of the world at Panama Pacific Exposition, Swine Show, San Francisco) 2. Fashion Longfellow 27th. 3. Fashion Longfellow 30th. 4. Solano Emblem Rival. Young stock, 125 gilts and boars. Show record dates back to 1910 when large show of state Fair ribbons for Berkshires went to Grapewild Farms herd and have been going that way ever since.

Butte City Ranch, W. S. Guilford, Butte City. Sows (number not given) represent most of leading families of the breed, rich with blood of Rival's Champion, Superbus, Masterpiece, Grand Leader 2nd, Baron Duke 170th and other famous sires.

Herd boars, (1) Iowana Champion Peer 2nd, a son of Rival's Champion; (2) Mayhews Leader 6th, a son of Grand Leader 2nd; (3) Superior Lustre, a son of Superior and litter brother of Grand Leader 2nd; (4) Duke's Combination 13th, brother to the grand champion sow at all the leading Eastern fairs of 1916; (5) Escalon Star, a son of the \$1500 boar Star Leader. Young stock

Rincon Farm, Frank A. Brush, Santa Rosa. One hundred sows, of Baron Duke, Longfellow Rival's Champion, Artful Belle, Miss Plattsborg, Rookwood Royal Lustre, Laurel Champion and other leading Berkshire blood lines including Riverby Princess, the Grand Champion Berkshire sow of the world. Herd boars: (1) Charmer's Duke 77th, grand champion boar at Missouri State Fair; (2) Ames Rival 102, reserve grand champion of the world, P. P. I. E.; (3) Winona Lee Champion 6th. His sire, dam, sister and brother have all been State Fair grand champions; (4) Mayfield Rookwood 2nd. Young stock, 20 head gilts young boars and pigs.

Hollow Hill Farm, C. W. Wilder, Redlands, and Colton, 16 sows of Longfellow Masterpiece, Baron Premier and Rival Champion families. Herd boars: (1) Artful Duke 32nd by Baron Premier 20th, out of Artful Belle, was first senior yearling boar and head of first herd bred by Exhibitor at 1911 International. He sired first prize boar pig and Junior and Reserve Grand Champion at P. P. I. E. (2) Our Rancho's Otto by Sittytton Masterpiece out of Lady Sequel 3rd, was gold medal Grand Champion boar at Riverside 1916. (3) Ames Rival 131st by Rival's Champion Best out of Belle Rival 17th. First at Riverside and 3rd at Sacramento 1916. Young stock, 14 boars, 27 gilts 4 to 11 months old. Also spring pigs.

Carruthers Farms, Mayfield: Of these twelve are daughters of Rival's Champion Best, the greatest living Berkshire boar in the last decade. Three were sired by Rival's Champion, one of them, Rival Lady's

HOLLOW HILL FARM

REGISTERED

Berkshires

are the results of breeding to produce the most pork with the least feed, and therefore make the most profit for the owner.



AMES RIVAL 131ST, 224304,

First at Riverside, 1916. Third at Sacramento State Fair, 1916. Hollow Hill Farm, Colton, Cal.

OUR SENIOR BOAR, ARTFUL DUKE 32nd 151978

First Senior Yearling Boar and Head of First Herd, bred by Exhibitor at the International Live Stock Exposition, Chicago, 1911.

NEEDS NO INTRODUCTION TO HOG BREEDERS

His get are prize-winners all over the country. Our Rancho's Otto was Gold Medal Grand Champion at Riverside, 1916. Our brood sows are prize-winners also. We have boars from 3 to 11 months, and gilts, open or bred to these champions, for sale. Prices and pedigrees on request.

HOLLOW HILL FARM

BOX 212 R. R. 1,

COLTON, CAL.

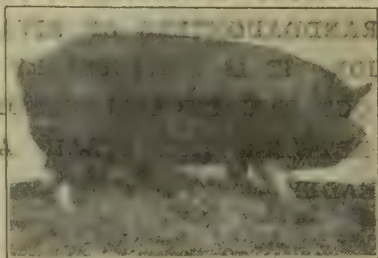
SPRING LITTERS FROM

Winona Royal Champion 5th

Junior Champion Berkshire Boar Western Berkshire Congress Show

Champion California State Fair 1916

now coming on



**His Get Is In Strong
Demand**

ORDER NOW!

NORMANDY FARMS

ARLINGTON M. SMITH

Visalia, Cal.

Santa Anita Rancho

Anoakia Breeding Farm

Berkshire Hogs

The herd of registered Berkshires is composed of a group of sows and gilts representing the most desirable blood of the breed, headed by KINTYRE LAIRD, first prize senior yearling and reserve Senior Champion boar at P. P. I. E. A few good year-pigs are offered at this time.



POLAND CHINA HOGS

Prize-winning sows and gilts backed up by many generations of famous prize-winners form the breeding basis of the herd. Heading these splendid females is HANKER'S BOY Junior Champion and Reserve Grand Champion at P. P. I. E.

We have several exceptionally fine SERVICE BOARS for sale.

Anita M. Baldwin

W. H. TAYLOR, Superintendent.

Santa Anita, Cal.

BERKSHIRES

Three Boars of serviceable age—grandsons of RIVAL'S CHAMPION BEST. One was first prize Boar at Riverside County Fair, 1916. Booking orders for Gilts, bred to AMES RIVAL 131st, for fall farrow. They are an extra good lot.

ALL HOGS CHOLERA IMMUNE

F. L. HALL

RIVERSIDE COUNTY,

PERRIS, CALIF.

BERKSHIRES

The Sierra Madre Ranch, at Lancaster, Calif., has three FINE YOUNG BOARS ready for service, and about FIFTY GILTS, ranging in age from three to ten months. These are from some of the BEST BRED SOWS in the State, and from a VERY FINE BOAR. Write for particulars or visit the ranch. RUSS AVERY, 630 Laughlin Bldg., LOS ANGELES, CALIF.



Grow Them Like This

with long, deep, meaty hams and well-sprung ribs. He stands shipping well and tops the market when he arrives. He makes the choicest bacon and dresses out with the least waste. For quality and profit, breed

Berkshires

They farrow large litters of lively, active pigs that are seldom crushed by the mother. These youngsters soon rustle for themselves, making rapid gains on inexpensive feeds. Berkshires mature early and fatten easily at any age. Hardy and vigorous, they thrive in all climates. Send for our freebook "Berkshire Hogs" and learn facts about this money making breed.

American Berkshire Ass'n

543 Monroe St. Springfield, Ill.

BIG-BONED BERKSHIRES

HERD BOARS

Steybrae Brummel 4th, 207202

Royal Rival 6th, 214287

Satisfaction guaranteed

FAIR OAKS RANCH

Willetts, Cal.

Goods is mother of the Grand Champion sow at Chicago last year. Another, Rival Lady 36th, is said by some of the best hog men to be the mother of more good herd boars than any other living sow. The other sows are grand-daughters of the Rival's Champion Best. Herd boar. (1) Ames Rival 100th, sired by Rival's Champion Best, and from a Black Robinhood sow. (2) Mayfield Champion, sired by Baron Matchless 50th and out of Rival Lady 36th. Herd won the Premier Exhibitor's Banner at the Panama Pacific International Exposition.

Maplewoode Ranch, E. M. Holje and Homer Hewins Jr., Calistoga, Cal.: 11 sows of Rival's Champion Best, Masterpiece, Columbia, Laurel Champion, Dutchess, Bandmaster, Rookwood, Baron Premier, Rival's Emblem and other leading Berkshire strains including two-half sisters to 1st under year sow at last International and a litter Sister to Grand Champion Sow, Oregon, 1914. Boars (1) Calistoga Duke, (half brother to Senior yearling sow at 1916 international) by Dukes Baron 8th out of Peaceful 4th. (2) Highwood Standard 91 by Highwood Standard out of Highwood Columbia 91. (3) Maplewoode Leader by Grand Leader 2nd out of a Fashion Longfellow Sow. (4) Maplewoode Duke by Ames Rival 70th out of Forest Grove Dutchess 5th. Young stock, 20 late fall pigs.

CARRUTHERS FARMS' Berkshires



Forest Grove Laurel 2d,
One of the great sows of the breed.

This herd of Berkshire Sows is considered one of the greatest collections on any farm in America. The Panama-Pacific International Exposition demonstrated this by giving this herd the Premier's Exhibitor's banner.

Their two great Herd Boars, Ames Rival 100, and Mayfield Champion are recognized for their smoothness, quality and thickness. It is doubtful if any farm in the West owns two as great herd boars.

First annual sale averaged \$187.50 each.

ANIMALS OF BOTH SEXES FOR SALE.

Carruthers Farms

513 HEARST BLDG., SAN FRANCISCO, or MAYFIELD, CALIF.

Rincon Farm Berkshires

FINEST HERD OF SOWS IN THE STATE

Including

RIVERBY PRINCESS

Grand Champion Sow of the World.

Herd Boars:

CHARMER'S DUKE 77th, 186329

Grand Champion Missouri State Fair.

AMES RIVAL 102nd, 210054

Reserve Grand Champion, P. P. I. E.

WINONA LEE CHAMPION 6th, 230096

His sire, dam, sister and brother have all been Grand Champions at State Fairs in their classes.

MAYFIELD ROOKWOOD 2nd, 218976

A limited number of fine bred sows, gilts, and young boars for sale.

F. A. Brush, Prop. C. E. Barrows, Mgr.
SANTA ROSA, CAL.

Whittier State School Berkshires



The photographs are of "Rival's Champion's Best" breeding, now generally acknowledged as perfection in Berkshires.

Our second herd sire is "White Longfellow," a boar of outstanding individuality and breeding, and our foundation sows are of such noted families as "Masterpiece," "Robbin Belle," "Duchess" and "Crestview."

All off-type animals are slaughtered for our own use, as we reserve for sale only the finest individuals. Our prices are right, and every animal is absolutely guaranteed to be as represented.

We prefer to sell after personal inspection, but painstaking care is given to mail orders.

Whittier State School, Whittier, Cal.

HOPLAND STOCK FARM

HOPLAND, CALIF.

Registered Berkshires

We are now offering weanling Boars and Gilts sired by our GREAT HERD BOAR, IOWANA RIVAL MAJESTIC, RESERVE GRAND CHAMPION, SACRAMENTO, 1916, and a SON OF RIVALS CHAMPION 112590.

PLACE ORDERS NOW

San Francisco Office: 1210 Flood Bldg.

MY BERKSHIRES

Are registered and cholera immune. Rival's Champion's Best and Masterpiece breeding. They show high quality and size, yet are so priced that the progressive pork producer, as well as the breeder, cannot afford to overlook them. They are the easy feeding, quick maturing kind from prolific litters (average 8.5 pigs at weaning), out of choice dams and sired by big, classy, 1st-prize winning boars. 3 months pigs from \$15 up.

Choice growthy fall Boars and Gilts \$25 to \$40. Watch Classified Column for special offerings.

W. H. WAUGH Riverside, Cal.

Rancho de Napa Berkshires

Herd headed by OAK'S SUPERB 191212, sired by world's greatest boar, SUPERBUS 136000, and out of BARON BELLE'S 11th, 176946. Two yearling boars for sale sired by above and from an Artful Masterpiece and an Lowana Majesty sow.

FRANK B. STETSON, Napa, California.

The Duroc-Jersey Hog---Great Pork Producer

Written for Pacific Rural Press by Elmer Lamb, Ceres, Secretary of the Duroc Breeders' Ass'n.

The early history of the Duroc reveals to us pretty clearly that he is all that was best in two or three strains of red swine; the massive coarse Jersey Red of New Jersey, the more compact Duroc of New York and the Red hog of Kentucky, whose ancestry doubtless came over from North Africa in slave trading vessels. Naturally it was some years before there was an established type, much less was there strong family lines. These were built by the slow process of elimination and development.

The Jersey Red was a hog of extreme size, as can be gleaned from Clark Petit's history of that breed. He gives the results of butchering contests, in which the prizes went to the farmer producing the biggest carcass. The following are some of the weights: 30 head 22 mos. old averaged 686 pounds dressed; 50 head 17 mos. old averaged 520 pounds; 5 aged barrows averaged 1053 pounds; the largest barrow reaches the enormous size of 1302 pounds.

Record Association.—The first record association was organized by some Wisconsin breeders in 1882. In 1888 the American Duroc-Jersey Swine Breeders' Association was organized. In 1891 the National

ers are not retarding the breed by inconsistently sticking to any one individual that demonstrates his ability of breeding. Any outstanding individual to sire the right kind, has a strong hold on the breeder regardless of blood lines. We do not wish to belittle blood lines—we would emphasize them, but not at the expense of the individual.

Leading Families.—Robt. J. Evans in his booklet, "The Old Red Sow," classifies the breed into eight best known families: Protections, Colonels, Top Notchers, Crimson Wonders, Golden Rules, Proud Advances, Orions and Golden Models. These are not named in order of importance but rather the order of development. These naturally trace some of their foundation from the same sire and dams.

The Protection family originated in the East. Among the best known of these are Ohio Chief, Chief of Ohio, Red Chief Iam, Ohio Chief II, Cherry Chief, Cherry King, The Professor. Ohio Chief was a consistent winner in the hands of S. E. Morton, who sold him to Harding & Osborne of Iowa for \$2000, who in turn sold third interest in him to Morrison of Nebraska for \$2000. The Cherry Chief, Cherry King and The Professor lines have been the

champion at the St. Louis World's Fair 1914. He got Orion Chief who sold for \$3,500.

The Crimson Wonder family was produced in the West coincident with the Top Notchers and Golden Rules in the East. The Crimson Wonders have produced more noted animals in the West than any other line.

The Golden Rules were developed in Ohio. The most noted of their boars being Choice Rule, Good Enuff, Burke's Good E Nuff, a noted sire of the West.

The latest developed family is the Golden Models, developed in Iowa. They have been the most consistent prize winners of the Middle West for the last five years. Their popularity is attested by the fact that a few days ago the Waltermeyers sold 60 bred sows and gilts at auction that averaged \$207 per head.

New to California.—The breed has recently attracted interest in California. Although there were good Duroc-Jerseys brought to and bred in California considerably earlier, the pioneer exhibitors of recent years at Sacramento were Fraser of Denair, Daggs of Modesto, Slocum of Willows and Eakle of Woodland. In 1912 there were only a few hogs exhibited. In 1914 they lacked only a few of outnumbering any other breed. Californians have not been slow in appreciating the many good qualities of the Duroc and they have gone after the best in Eastern herds. Every one of the noted families above is represented by many excellent sons and daughters in this State.

Why They are Popular.—The Duroc has stood the test of every condition imposed upon him, and is equally at home on the foothill range, the stubble field, alfalfa pasture or dairy ranch. He can stand the cold of the mountains or torrid heat of the valley with any breed. They are exceptionally quiet and docile. You very seldom see a vicious sow, even at farrowing time, and hardly ever a vicious boar. They are good sucklers, good mothers, hardy, resisting disease, and always on the job making pork, ready for the block at any time.



Purebred Durocs Feeding.

Duroc-Jersey Record Association was organized, since which time there have been two associations, which have recorded to date more than five hundred thousand Duroc-Jersey hogs.

Ideal Pork Hog.—The Duroc has been developed through half a century of careful consideration of the qualifications necessary for the best machine to convert grain and grass into pork. How rapidly he has come into his own and convinced the pork growers that he is nearer the ideal pork hog than any yet produced, one only needs to look over the records of shows, sales, registry books, and note the per cent of Durocs that come to the market centers of the nation.

Prolificacy.—This is not to be wondered at when the prolificacy of the Duroc sow is considered. About March 1st this year, Geo. Wood, Ceres, had a Duroc sow farrow 25 live pigs; while near Denair, another party had a grade Duroc farrow 23. While these litters are unusual, eight pigs raised per litter is a fair average for the Duroc.

Constructive Breeding.—The true American values a man according to his ability to do things. Just so with the Durocs. The constructive breed-

most popular lines from Ohio Chief in the last five years.

The most noted line of sows of the Protection family was the Duchess line, of which Duchess 40th is the most noted. She was mated to Protection and produced Ohio Chief and Chief Ohio; she was mated to Orion II and produced Top Notcher.

Colonel M was a 1st prize winner at the Columbian Exposition 1893. The most noted boar of the Col. family was King of Cols. He was a failure in the show ring, never winning higher than 3rd. He was sold by Carl Scott to Mr. Morton, who refused \$10,000 for him afterward. His progeny are the most widely used today of any. His son, Defender, sold twice for \$5000.

Proud Advance is noted as a great producer of sows. His failure to produce any noted boars caused his line as a family to soon run out. His daughters hold the record in number sold at high prices. One, Proud Zeda, sold for \$2,600.

Orion family was founded in Iowa. He was mated to Ohio Anna and got Orion II, who went to Ohio. Orion II mated to Duchess 40th, produced Top Notcher, head of that family and sire of Tip Top Notcher, grand

Registered DUROCS

SOWS—Bred or Open.

A fine young November boar. December Sows and Boars.

C. E. DURRELL

Route 1,

Napa

WILL SELL OR TRADE

Duroc Boar

Fredonia Prince

3 years old

PERKINS & CO.

PERKINS,

CALIF.

DUROC - JERSEYS Finest herd of brood sows on the coast, bred to the best boars in the world. Sows sired by, or bred to, Grand Golden Model, Great Wonder, Grand Champion Iowa 1916, Grand Model, Pathfinder, P. & L's Defender, King the Col, Col the King, and Cherry Chief. Peters, Lamson & Walker, breeders for Fontana Land Co., Devore and Fontana, California.

CHOLERA IMMUNE

DUROC-JERSEYS

OF THE BIG TYPE.

Bred for Show and Quality.

DERRYFIELD FARM,

I. O. O. F. Temple, Sacramento

65th RANCH

DUROC - JERSEYS

Herd Boars.

BIG DICK and BEAUTY BOY Spring pigs sired by these boars and out of Colonel and Nebraska Sensation Sows.

J. L. Dickenson, Visalia, Cal.

F. M. Barney

HANFORD, CAL.

Breeder of

REGISTERED DUROCS

Booking Orders for Spring Pigs.

W. H. GINN & SON

CORCORAN, CAL.

Breeders

DUROC JERSEYS

Offering Fine Weanling Pigs

P. K. HICKS

BREEDER

FINE REGISTERED

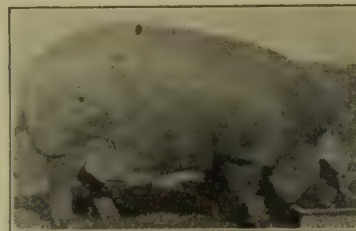
DUROC JERSEYS

Young pigs to offer June 1st.

ORLAND,

CALIF.

Uneeda Herd Duroc Jerseys



Uneeda Wonder, Second at Nebraska, 1916.

BOOKING ORDERS FOR PIGS

H. P. SLOCUM & SON

WILLOWS,

CALIFORNIA.

Hogs and Pigs for Sale

Two 3-year-old Duroc Jersey sows, bred six weeks; registered. Also 3 Gilts and 3 boars, registered. One 2-year-old Boar from Indiana.

ALL CHOICE BLOOD.

2 registered Jersey cows, 4 years old, fresh April 5 to 15, St. Lamberts.

JERSEY QUEEN FARM,

SAN JOSE, CALIF.

Duroc-Jersey Items

These notes are taken from reports of Duroc-Jersey breeders sent us by request for this issue. We wrote to every breeder of whom we had knowledge. All did not respond and some reports are not entirely complete. However we believe that on the whole they give a good idea of the amount of breeding stock and the blood lines in the State.

R. E. Dixon, Hanford: 10 sows, 2 boars of Defender and Foxy Model breeding. 50 head of young stock.

Leonard Farm: W. J. Hackett, Ceres, 3 sows of Good Enuff and Ohio Chief breeding. Fall and Spring pigs.

Wm. Way & Sons, Modesto, 7 sows, Good Enough and Crimson Wonder breeding. Herd boar, Standiford Chief.

W. L. Reedy, Tulare: 2 sows, Defender and Bill Boy breeding. Boar, Budd by Bill Boy. Young stock, 14 head.

L. J. Gamble, Winton: 8 sows of Sensation, Golden Model and Crimson Wonder breeding. 3 herd boars same strains.

F. M. Barney, Hanford: 4 sows, Elmer Lamb's breeding. Herd Boar, Mandy 13, by Taxpayer. Young stock, 20 head.

C. R. Sorter, Tulare: 3 sows (Defender and Nebraska Belle breeding). Herd Boar, Colonel Wonder 3rd. Spring pigs.

Ora P. Burns—100 sows eligible to registry, blood lines not given. Herd Boar Joaquin Prince. Sire Imperator, Dam Tilley.

Henderson Company, Sacramento, 8 sows breeding not given. Herd Boar, Fruits Orion (Jr. Champion Oregon State Fair 1916).

J. L. Dickenson, Visalia: 9 sows of Colonel and Sensation breeding. Herd boars, Big Dick, Beauty Boy, sired by Burk's Goodenough.

Geo. A. Farmer, Hanford: 5 sows, Colonel and Sensational Model breeding. Herd Boar, Farmers Improver. Young stock, 15 spring pigs.

New England Corporation have 50 registered sows, 12 registered boars. Breeding not given. Five young boars, 40 gilts eligible to registry.

E. C. Hoover, Turlock: 4 sows of Colonel Chief and Modesto King breeding. Herd Boar bred by University Farm, sired by Colonel out of Advancer 3rd.

H. E. Boudier & Son, Napa: 4 sows, Crimson Wonder and Colonel breeding. Herd Boar H. F. Colonel (2nd prize State Fair 1916). Young stock, 15 gilts.

Dos Hermanos Rancho at Ukiah: 6 sows of Sugar Valley and Model Colonel breeding. Herd boar Advancers Chief 3rd. A goodly number of fine Spring pigs.

Derryfield Ranch, Dr. Geo. A. Spencer, Sacramento, 8 sows of Gold Model, Crimson Wonder and Orion breeding. Herd boar, Derryfield Colonel. Young stock, spring pigs.

University of California, Davis: 12 sows of Crimson Wonder, Advancer, and Colonel blood lines. Herd Boars (1) Model Colonel. (2) University Wonder (a Crimson Wonder boar).

J. M. De Vilbiss, Patterson, number of sows and breeding not given. Sows related to Grand Champions. Herd Boar Crimson Monarch 2nd (champion 18 months class 1916 State Fair).

R. C. Sturgeon, Tulare: 7 sows, Defender, Colonel Sensation, Primrose, Golden Rod Critic B and Golden Choice breeding. Herd Boar Orion's Golden Colonel 2nd, son of Pathfinder. 16 Spring pigs.

Allen Thompson, Tulare: 9 sows of Defender, Gold Model, Long Wonder, Critic B and Illustrator breeding. Herd Boar, Orion Golden Colonel, a consistent winner at County Fairs. Young Stock, 100 Fall and Spring pigs.

W. P. Harkey, Gridley: 5 sows, University Farm, Frazier and Rucker and Coppin breeding. Boar, Ahtatum Perfection, by J. K.'s Colonel, out of

Glady's 11th. Young stock; 24 boars and gilts by California Defender and Model Colonel.

John P. Walker, Visalia: 15 sows of selected breeding. Defender King's Colonel, etc. Herd boar, Tulare Boy grandson of Defender, out of Bell Boy. Has some fine young stock out of his former senior herd boar, Ely's Colonel.

Perkins & Co., Perkins: 4 sows of Nebraska Sensation and Modesto King breeding. Herd Boar Fredonia Prince, 3rd prize California State State Fair 1916 by Swineland 1st, out of Queen of Swineland. Young stock, 25 boars and gilts.

C. T. Thompson—12 sows of Crimson Wonder, Lady Surprise Monarch of the Nook, Colonel and Sunkist breeding. Herd boars: Colonel 2nd, sired by Royal Muriel out of Sheldon's Belle and Thompson Pilot Defender, Sire Silver Defender, out of Forest Beauty.

Elmer Lamb, Ceres, 11 sows of Cherry King, Orion Golden Rule and Helen Blazes breeding. Including Jr. Champion sow and reserve Grand Champion sow at Panama Pacific. Herd Boar, Orion Model, sired by Orion Cherry, King Grand Champion, Omaha 1916. Young stock, 2 boars, 20 gilts.

Tagus Ranch, Tulare: Sold down to 30 best brood sows of Cherry King. Fashion, Improver, and Center of Attraction breeding. Herd Boar, California Defender (Junior Champion at P. P. I. E.) Sired by Crimson Wonder, out of Gladys 2nd. Young stock, spring pigs by California Defender.

H. P. Eakle, Woodland, 50 sows of Tip Top Notch and Crimson Wonder breeding. Herd boars: (1) Colonel Keep On, 2nd prize 1916 State Fair; (2) Oregon Defender by the only boar two times Grand Champion Chicago International, (3) H. P. Wonder, out of Grand Champion Sow of Nebraska 1914.

Frederick M. Johnson, Napa, 8 sows of Orion, Cherry King, Good Enuff and Ohio Chief breeding. Just importing Pathfinder sow from the East. Herd boar, bondholder, a son of P. P. I. E. Grand Champion and just in the under year class at Sacramento 1916. Young stock. 60

The Ormondale Company, Redwood City: Five registered sows, among them, Red Beauty 2nd, out of Red Beauty and tracing back on sire's side to U. R. Colonel. Herd boar, Commodore Colonade, sired by Locust Hill Colonade, out of Lady Commodore. Young stock (number not given); a fine litter out of Red Beauty 2nd, sired by Willettas Wonder.

Haden Smith, Woodland, herd consists of line bred Colonel, Golden Model and Crimson Wonder. Sows (number not given) selected for show quality as well as for prolificacy and quick maturing. Won first herd and first prize at Swine Show at Sacramento 1916. Herd sire, Uneeda Wonder, by Uneeda Crimson Wonder, by Crimson Wonder, out of H. A.'s Queen. Young stock (number not given). Fall pigs and Spring by Uneeda Wonder.

Swineland Farms, W. O. Pearson, Woodland, Durocs: 10 sows of Mo. Girl, Colonel Brown, Kruger Chief, Sunset Queen, Ruby, Buddy and Perfection breeding. Boar, Rosebud Boy 2nd, by W. L. A.'s Perfection, out of Yuba Girl. Young stock, 40 head Fall and Spring pigs. Tamworths 19 sows of Glenola Lady Bryan, Profit Farm, Longfellow, Excelsior, Nesbit, Choice and Queen breeding. Boar 1. California 2nd, by Mr. Home Indiana, out of Salvation Nell. (3) Nunrod 4th, by Nunrod 3rd, out of California Queen. Young stock. 40 Fall pigs and 50 Spring pigs.

Uneeda Glenn Co. Herd, H. O. Slocum & Sons, Willows: 10 sows of Colonel, Golden Model, Perfection Wonder, Crimson Wonder. Grand Model Illustrator, Kruger Chief, Defender and other leading Duroc blood lines. Herd boar Uneeda Wonder. 2nd prize Neb. State Fair 1916, by Uneeda Crimson Wonder, by Crimson

Wonder, out of H. A.'s Queen. Young stock, 30 gilts and boars; also spring pigs by Uneeda Wonder.

Ginn & Son, Corcoran: 2 sows, Colonel breeding. Herd Boar, Imperator. Young pigs, 20.

Durocs of Quality FOR SALE

One Mature Sow, carrying litter by "River Bend High Model"—our 900 lb. two-year-old boar. Her last litter was 14. Price, \$125. She is by "Advancer of University Farm," with good back, rangy and large bone.

Five of her October Gilts—with good bone, fine cherry color and bid fair to be like their dam—sired by "River Bend High Model" Price \$30 each.

Two "Crimson Wonder" service boars—heavy bone, fine feet, cherry color and promise to weigh 1000 pounds at maturity. They are now 11 months old. Price, \$75 each.

Three "Defender"—"Orion's Pal"—boar pigs, now 7 months old, weighing over 200 lbs. These are future champion stock by a boar which sold twice for \$5000. Price, \$100 each.

River Bend Farm

ORDER NOW.

ST. HELENA, CALIF.

Duroc Jersey Swine

I have been building up my herd for two years and have one of the best herds in the Valley.

*I will ship all stock on approval
EVERYTHING I SHIP IS GUARANTEED*

MY PRICES ARE RIGHT

J. P. WALKER

Visalia

California

P. K. Hicks, Orland: Three sows imported from East by Slocum. Young stock, 2 litters fine spring pigs.

C. E. Durrell, Napa, 2 sows, Orient breeding. Herd boar, Napa Chief, grandson of Chief Colonel.

Riverbend Farm, W. W. Everett, St. Helena: Sows (number not given) of Crimson Wonder, Orion, High Model Defender and other good Duroc blood lines, including a daugh-

ter of Defender, the \$5000 sire, and out of Radiant Model. Herd boar, Riverbend High Model, a 900-pound 2-year-old. Young stock (number not given), fine gilts, service boars, boar pigs and spring litters.

Peters, Lamson & Walker. (Fontana Land Co.) Fontana & Durocs: 50 sows either by or bred to following boars: Grand Model, Grand Champion at Iowa, South Dakota and Minnesota Fairs, Pathfinder, largest type Duroc boar in America, King the Col., Col. the King, Grand Golden Model, Great Wonder (G. C. Iowa 1916), P. & L.'s Defender and Grand Model Again. Boars: 1. Grand Golden Model, first junior pig at Riverside 1916. 2. P. L.'s Defender. 3. Col. the King (prize winner at World's Fair). 4. P. L. W.'s Golden Model, by Educator. Young stock (number not given). Litters by King the Col., Critic B and Grand Golden Model.

Leonard Farm

DUROCS

OFFERS

2 GH/TS and 1 BOAR, out of Girlie of Leonard Farm, a P. P. I. E. prize-winner.

3 GH/TS and 1 BOAR, out of a full sister of Girlie of Leonard Farm.

3 GH/TS and 1 BOAR, out of Katie's Pet.

All sired by
LEONARD FARM CRIMSON,
1st prize yearling boar
Stanislaus County Fair, 1916.
Breeder of Duroc Jerseys and
Register of Merit Jersey Cattle.

W. J. HACKETT Ceres, Cal.

Duroc Jerseys

WINNING

Fresno, 1915—5 firsts, 2 seconds.

Fresno, 1916—6 firsts, 2 seconds.

Visalia, 1916—4 firsts, 2 seconds,
and 2 champions.

Young stock and bred sows
for sale.

MOST POPULAR STRAINS

ALLEN THOMPSON

Route A, Tulare, Cal.

Ormondale Durocs

ARE BIG TYPE, WITH BIG BONE, WELL
ARCHED BACK AND CARRYING GOOD
HAMS. YOUNG STOCK BOTH SEXES
FOR SALE.

Duroc Jersey Swine
and
Shorthorn Cattle

ORMONDALE CO.

R. F. D., No. 1,
Redwood City,
Cal.

DUROCS ENTERPRISE STOCK FARM

Boars in service—COL. KEEP ON 159313, 2nd prize aged boar 1916 State fair. H. P. WONDER 193917, sired by 1st prize boar 1916 Neb. State fair, out of Bessie Wonder, grand champion 1914 Neb. OREGON DEFENDER 42797, by Defender, twice grand champion at Chicago International, out of Col.'s Belle III, the sow that produced the prize-winning herd two consecutive years through the South.

FOR SALE

A few sows by Col. Keep On and H. P. Wonder, open or bred. Price, \$50.00 up. Enterprise Col. 193921, third prize senior yearling boar, 1916 State fair, price, \$75.00. Crimson Col. 214067 April, 1916, farrow, price \$50.00. All 1916 fall pigs, except show herd, sold.

All stock guaranteed as represented. Thirteen years a Duroc breeder and no regrets.

Correspondence solicited. Visitors welcome.

H. P. EAKLE, JR.

Tamworths.

As they are now bred, the Tamworths are a very large bacon type of hog—grow rapidly and produce good meat. They are good rustlers and consequently can be raised on pasture to advantage. They originated in England, but of their early history little is known, other than they were very large, coarse, active animals.

The secretary of the American Tamworth Swine Association, E. N. Ball, Hamburg, Mich., reports that there are nearly 300 of this breed in California.

Tamworths should have golden red hair on a flesh-colored skin, long snout, large ears, chest wide and deep, shoulders slanting and well set, legs set well outside body, back long and straight, loin strong and broad, sides long and deep, ribs well sprung, flank full and let down, hams broad and full.

Breeders claim for them great hardiness, pasture and stubble feeders, producing lean meat, very prolific and great size.

Swineland Duroc - Jerseys and Tamworths



* TAMWORTH, the bacon hog. We have the largest herd in the State. Twenty sows of best blood lines, headed by California 62nd and Nimrod 4th. Duroc herd headed by Rosebuds Boy by W. L. A.'s Perfection out of Yuba Girl.

Mature stock and weanlings of both sexes. Sure to please.

Swineland Farm

WM. O. PEARSON, PROP., WOODLAND, CAL.

FIRST PRIZE HERD DUROCS

At Sacramento 1916 won first Prize Herd and First Prize senior sow pig.



Uneeda Wonder Prize Winner at Nebraska State Fair and Omaha National.

HADEN SMITH, Breeder of Fine Durocs
Woodland, Box 840, California.

I am using on my herd of prize sows Uneeda Wonder, grandson of Crimson Wonder and H. A.'s Queen. The get of H. A.'s Queen won more prizes at the Middle West Fairs than that of any other living sow.

My entire offering of spring spring pigs will be from first or second prize winners.

BIG TYPE DUROC-JERSEYS

The Leading Blood Lines of the East and Middle West

Offering at the present time choice spring pigs, either sex. A few boar pigs sired by Critic D, also a few by Indianwold's Orion Cherry King out of a sow sired by Joe Orion II, for May delivery.

FREDERICK M. JOHNSON,
NAPA CAL., R. F. D. 2, BOX 87.



Herd sire at age of 16 months. First in class, Sacramento, 1916

The DeVilbiss Herd of LARGE TYPE DUROC HOGS

My stock is out of National Prizewinning Stock, being either out of Grand Champion Boar or Grand Champion Sow, or related to same.

Herd headed by CRIMSON MONARCH II, a Prize-winner in the World's Fair and Champion of the eighteen months' class at the California State Fair, 1916. Meet me at the State Fair, 1917.

J. M. DeVILBISS

Patterson, Cal.

The Chester White Breed in California

[By C. B. Cunningham Mills, President Calif. Swine Breeders' Association.]

About the year 1812, there were found in Delaware and Chester Counties, Pennsylvania, large white hogs that were supposed to have been brought there by the Quakers. These animals, while having extreme size, were very coarse and slow in maturing. In 1818, the Cumberland, a large white hog from Bedfordshire, England, was introduced for crossing these native animals and within a very few years the Improved English China, another white hog of very early maturing qualities was imported; later the Thin Rind, now called the Hampshire, was introduced in the cross, so that the Chester White blood comprises all of these. In 1848 it was decided to call these white hogs, Chester County Whites. Later the name was shortened to

spective of the type or color of the sows. They will stand all climatic tests with any breed; the introduction of Chester blood in any herd is immediately apparent in the disposition of the pigs.

The Chesters are probably the only breed that has never been bodsted and today one can secure the highest type animals at a very reasonable figure.

As regards the different blood lines, no one family stands out as prominently as it does in other breeds; the blood lines at present most popular and the individuals that are bringing the highest prices are from the Wonder, Combination and St. Elmo strains, or a combination of them.

Wonder has probably produced

O. I. C.

Geo. M. Frazer, Glen Frazer: Two gilts and one young boar.

Cedarhurst Ranches, Sacramento: Four gilts and 3 boars, of Iowa Boy, Tessie and Gussie breeding.

B. F. Nickell, Orland: 4 sows. Boar: Sidney, breeding not given. Young stock, 19 spring pigs.

The Melone Co., Napa: Fifteen sows. Herd boar, Lucky Dog, breeding not given. Young stock (number not given).

A. H. Gilbert, Pixley: Three sows (Hiawatha, Blue Bird, and Cream Cap Perfection breeding). Boar: Mills' Chief by Chief Again out of Nancy.

University of California: Four sows including 1st and 2nd prize pigs at 1913 International Bredels breeding. Herd boar, a son of William A., grand champion at National Swine Show 1916.

S. R. Cheney, Strathmore: Four sows of Cream Cup and California Boy, and Chief Again breeding. Boar: Perfection Boy sired by Iowa Boy out of Mill's. Best Young

stock, 22 gilts and boars.

Highland Herd, R. L. Robinson, Fair Oaks: Four sows of Brendel's Beauty, Jim's Dandy, Pallenmades White Eagles and Naval breeding. Herd boar, Benito Boy by Palten-made out of Brendel's Beauty. Young stock (number not given), promising gilts of Chief Triumph and Perfection Boy blood lines.

Billiken Herd, C. B. Cunningham, Mills. Sows (number not given) of Combination 2nd, Wonder, St. Elmo, Wildwood, Price Juanita and Perfection breeding, including grand champion sow at Sacramento 1916. Herd boar, Billiken by Wm. A. out of Elmo's Pride. Wm. A. was 1916 grand champion at Iowa and Michigan State Fairs and at the National Swine Show at Omaha. Young stock a few bred and open gilts and some nice fall pigs.

Forty-nine Pig Club members of Imperial Valley wound up their contest last Saturday with a show in Brawley where Prof. G. H. True of University Farm judged the stock and addressed visiting farmers.

CHESTER WHITES

The Breed That Is Here to Stay

WHY?

Because they Have Made Good

THE BILLIKEN HERD OF CHESTERS IS COMPRISED OF INDIVIDUALS THAT HAVE THE TYPE AND CARRY THE BLOOD MOST DESIRABLE IN THIS BREED.

A FEW GILTS THAT ARE SHOW PROSPECTS. BRED GILTS DUE TO FARROW IN MAY AND JUNE. OCT. PIGS, BOTH SEXES, FOR IMMEDIATE DELIVERY.

EVERY ANIMAL CHOLERA IMMUNE AND REGISTERED.

Write for circular and booklet.

C. B. CUNNINGHAM
MILLS
Sacramento Co., Cal.

LOCKEFORD STOCK FARM BREEDERS

CHESTER WHITE

(O. I. C.) Swine

Young stock of best breeding.

JERSEY CATTLE

Sons and grandsons of Empress Lass and King's Valet.

Increase your milk production with a good Jersey bull and feed your skim milk to O. I. C. Hogs.

N. H. LOCKE COMPANY
LOCKEFORD, San Joaquin Co., California

O. I. C. and BERKSHIRE PUREBREDS

We have a few choice 8 months' Berkshire gilts yet on sale, and one 8 months' O. I. C. gilt; also one of two and a half months. Would sell a tested O. I. C. boar, 18 months old—a magnificent specimen of this superior breed; and one 8 months old—all in splendid breeding condition, and VERY moderate in price, considering the present price of hogs.

CEDARHURST RANCHES, R. F. D. No. 2, SACRAMENTO.



By courtesy Calif. Hog Book.
Chester White Sow and Boar.

Chester Whites; today they are often known and advertised as Improved Chesters, O. I. C.'s, etc. All, however, trace back to the same ancestry and are none other than a family strain or name type.

The great size, easy feeding qualities, even disposition and ability to not only produce but to raise large litters of uniform pigs that matured at an early age gave them such a reputation and created such a demand, that unscrupulous dealers, at the close of the Civil War, sent out any kind of a white pig as a Chester, and this caused such a set back to the breed that it is only in recent years that they have come to the front again.

It is impossible to state just when the first Chesters were introduced into California. There has been white hogs in this state for a long time, but most of them were of a very coarse type, thin haired and not very satisfactory. The Chester White of today is the equal of any breed in the State. They are easy feeders, mature early and fatten quickly at any age or size. The sows are very prolific and raise large litters of uniform pigs. The boars are exceptionally strong in reproduction and stamp their individuality on their pigs, irre-

more Champions and Grand Champions than any other boar.

Combination 2nd, sired by Combination, has more high-priced public sales individuals to his credit than has any other sire.

St. Elmo, an extreme Eastern boar, has not only a wonderful record, but has produced numerous sons and daughters that he has stamped with his good qualities.

Any good individuals of these three blood lines are valued very highly.

There are the famous Lenora and Juanita and many more family strains that are equally as good, although not as well known.

Why the Chesters should be popular in California? The sows farrow large litters of uniform pigs and have sufficient milk to suckle and raise them. They are gentle and contented and make rapid gains; quickly adapt themselves to local surroundings and do well either on the range or in the fattening pen. They dress nice, clean, white, and high percentage carcass. They can be fattened at any age or size. Moreover one can secure good type serviceable animals at a very reasonable price. They really possess merit and should rightly be termed the Real Mortgage Lifters.

Hampshire Swine.

[Written for Pacific Rural Press by J. W. Henderson, Berkeley.]

That California will grow barley, corn, feterita, Milo maize and alfalfa, and that in abundance, is conclusive evidence that pork can be produced as satisfactorily as in the East.

There have been two serious drawbacks in the past which seem at present in a process of solution: First, the mongrel hog formerly bred here, and second the low prices relatively received for the same.

Of recent years the quality of hog has changed because of the introduction of the purebred, which has already demonstrated its ability to more than pay its way in its greater economy of transformation of food-stuffs into pork which is of a superior quality as well.

All breeds have their admirers and are aiding in the above transformation. Probably the most recent breed to enter the field is the Hampshire, representatives of which are appearing on the ranches of a goodly number of progressive hog men.

The History of Hampshire Swine is not definitely determined and their origin is a thing of obscurity. There are, however, a few facts which may prove of interest to breeders of

time there were less than 25 breeders of Hampshires in the world and on January 1, 1915, there were 10,380, with a registration of about 60,000 sows and about half that number of boars in the U. S. alone, while in Canada there were about 100 herds and a few had found their way to South America.

A demand for the hog soon came from the Pacific Coast and herds appeared in Washington, Oregon and California. There may have been Hampshires introduced here before 1907, but it was in that year that the Four Oaks Stock Farm, of Woodlands, took out membership in the Association. The second membership was taken out by the writer, after having brought into the state two bred gilts and a young boar. Schmidts Bros. of Salinas, Cal., early began the breeding of Hampshires in the state and were first to convince the writer of the rare ability of the Hampshire as a rustler.

There has not as yet been formed a State Hampshire Association, but as there are already a considerable number of breeders here it is likely one will be organized before long.



Good types of Hampshire breed.

Hampshires and their admirers.

Contained in the archives of the Department of Animal Industry at Washington, is an interesting volume entitled "The Breeds of Domestic Animals of the British Isles," written in 1842 by David Lowe, a Professor of Agriculture in the University of Edinburgh, where in writing of the different breeds of hogs he shows an illustration of a belted hog and states that it is known as the old English breed. He speaks of them as being in the Hampshire district of England, and refers to them as Hampshires; e. g., "The Hampshires were also a very noted breed, from their beginning, for large size and well suited for choice bacon."

Before many years there came a demand from the great corn belt region for the Hampshire. Owners and breeders began to enthrall and John Goodwin of Illinois concluded his looked good enough to get into a class, and in 1901, his Hampshires made the first appearance in a great show—The International at Chicago.

At this show there was present no less a personage than the U. S. Secretary of Agriculture Wilson, who expressed it as his opinion that the Hampshire had come to stay and later the Hampshire Record was admitted and Hampshire became a recognized breed. As a result of this the breed received a partial recognition at the Louisiana Purchase Exposition at St. Louis 1904. At this

HAMPSHIRE SWINE

From Imported Stock
of best blood lines.

Let us know what you want.

R. O. Bagley

TULARE, CALIFORNIA

Rio Monte Hampshires

BRED SOWS, BOARS, BRED AND OPEN GILTS, PIGS AND SHOATS. After two years of careful breeding and selection, we are now offering a very fine lot for foundation stock. All inquiries will receive careful and prompt attention. Special prices to boys' and girls' pig club contestants.

BROBECK & LATHROP, Route D, Box 138, Modesto, Cal.

HAMPSHIRE NOTES.

R. O. Bagley, Tulare: Two sows (imported). Boar, Nebraska Duke by Cordova King out of Cordova Lady. Twenty-six fall and spring pigs.

H. E. Richardson, Chico: Eleven sows of America, Fire King, May Belle, and Palo Verde breeding. Boars: (1) Palo Verde Bruno, by El Salvador out of Palo Rose; (2) Savannah by Berkeley King and Miss Showers. Young stock, 4 gilts and spring pigs.

Bella Vista Herd, Dr. J. W. Henderson, Berkeley: Seven sows including daughters of General Wickware, who was sensation at Omaha last year, and descendants of Pat Malloy at 1916 State Fair. Bella Vista herd won grand champion and junior champion sows. Boars: (1) Berkeley King by Glen Allen out of Carmel Queen; (2) Kenwood II by Silver Jr. out of Joseph Merry Widow; (3) Queen's Model Fair Promise by America (descendant of Pat Malloy) out of California Queen. Young stock, 90 head.

Llano Vista Herd, F. A. Langdon, Perris: One hundred and fifty sows of Mose Messenger, Cherokee Plummer, Gen. Tipton, King Pat, Quality, and other good Hampshire blood lines. Among them Sioux Queen, grand champion of the world at San Francisco 1915 and other P. P. I. E. prize winners, as follows: Lady Favorite, Velvet Lady Selvina and Western Favorite. Herd boars: (1) Gold Mine, grand champion of California; (2) The Harvester, junior champion Panama-Pacific; (3) Langdon's Choice; (4) Prince, sired by Gen. Tipton Again, the grand champion of the world and out of Sioux Queen, grand champion sow.

Prize Winners

HAMPSHIRE



The above illustration shows one of our best brood sows with litter of pigs. We have many others just as good.

We have reasons for choosing the HAMPSHIRE breed above all other breeds. We have experimented and know what they can do. The farmer who wants a hog that puts on 200 pounds of firm meat at six and a half months of age—economically, that thrives under adverse conditions, that resists disease, is prolific, and a hog the packer likes, buys the HAMPSHIRE. If you visit our ranch we will show you.

Herd won highest honors at P. P. I. E. 1915, and California State Fair 1916.

—ANIMALS OF EITHER SEX FOR SALE—ANY AGE—

LLANO VISTA RANCH

PERRIS, CALIFORNIA.

Ed. Langdon, Mgr. -:- -:- F. V. Gordon, Pres.

HAMPSHIRE



TAHOE,
Grand Champion Sire, Cal. State Fair,
1916.

The Bella Vista Herd of Hampshires represents the bluest blood in the breed.

A son of Gen. Allen—the undefeated 13 times Grand Champion Hampshire.

Daughters of Gen. Wickware—whose progeny was the sensation of the breed at the recently held Omaha Hog Show.

Descendants of Pat Malloy, services for whom was \$50.

Evans Bond, who headed the herd is son of the undefeated Messenger Boy.

Sire 15 times Champ. over Hampshires and 5 times Grand Champ. over all breeds.

Dam Nora Duchess, which twice topped the highest price paid for Hampshires at auction.

This herd secured 23 prizes out of 22 entries at the recent State Fair, including Grand and Junior Champ. sows and First on young herd bred by Exhibitor.

Write me about what you want and I shall furnish you a good Head Herder or unrelated male and female, and at reasonable figures.

GUERNSEYS

Bull calves, 4 to 7 months old, from PRODUCING dams,
\$125 to \$200 each.

Write for breeding if interested.

J. W. Henderson

522 1st Nat'l Bank Bldg.,

Berkeley, Cal.

Improved Large Yorkshires

[Written by C. L. Tubbs, Calistoga.]

The hog raiser, in choosing his breed, should look carefully into the conditions under which he is to grow his hogs, his available crops, his pasture, the climate and marketing conditions, whether he sells by live weight, dressed carcass, or finished product.

A careful analysis of the characteristics of the Large Yorkshire shows that this breed will qualify for almost any condition. The dairy farm so popular in California today, is ideal for Yorkshires. Alfalfa skim milk and pasture, together with a little grain, will turn them off in remarkably short time. In the moun-

they transmit these qualities to the progeny, and the quickness and certainty with which the Yorkshire crosses bring renovation to swine deficient in breeding qualities, have been an outstanding feature of their popularity.

In conformation, the ideal Yorkshire has a long, deep body, back slightly arched; the back must not be open between the shoulders, must carry even width from end to end, with a good spring of rib. With a well-arched back the underline is generally straight and not cut up behind the front legs, or in the flank, allowing plenty of heart girth and capacity. There should be width enough to produce a good pork loin, but no more. The hind quarters must be long, to correspond to the shoulder



By courtesy Calif. Hog Book.
Yorkshire Sow and Boar.

tains, their active and rustling natures and their hardiness enable them to stand the cold and snow. In the interior they have no difficulty in withstanding the long, hot summers.

Yorkshires can be marketed in six to seven months, the most profitable age, and on account of the excellent quality of the meat, and the long, deep sides of bacon, breeders have enjoyed a large premium for many years. When 84 per cent of the dressed carcass goes for fancy ham and bacon, and only 16 per cent for lard, sausage and waste, one can readily see the reason for this.

As a breeder, the Yorkshire is pre-eminent. It is admittedly a very prolific breed—the litters running from 9 to 16. The sows are of gentle disposition, never become clumsy, even at an advanced age, and give sufficient milk to raise, in good shape all the pigs they farrow.

The Yorkshire asserts its individual characteristics when crossed even with objectionable types, giving to the progeny its own peculiar features—namely, a lengthy, deep side, and an abundance of fine-grained lean meat. The marked degree in which

and side, deep, with a moderate and gradual drop to the tail. The ham should be large, well let down on thigh and twist. The legs must be medium in length, strong, not coarse, and standing straight and firm. The hair is abundant, long, of medium fineness, without any bristles, and the color white on all parts, though dark spots on the skin do not disqualify.

Many writers claim that the Yorkshire is the oldest breed of hogs now in existence. In Yorkshire, England, a race of large coarse-boned, leggy, white hogs were common for a great many years. The main improvement in the breed has taken place within the past 60 or 70 years, and it is said that the first important step was the crossing of the Yorkshire with the white Leicester, which was a large breed, but finer in bone and more easily fattened than the old Yorkshire. Further improvement was effected by crossing with the Small White breed of England. Careful selection, in the hands of skillful breeders, has done much to improve the breed within recent years.

At the present time there is no breed of hogs so widely distributed throughout the world as the York-

MONTELENA HERD or Large Yorkshires



A Fine Group of Yearlings.

THE IDEAL HOG FOR THE PROGRESSIVE FARMER.

Larger litters; larger percentage of pigs raised; easier feeders; easier keepers; quicker maturing; higher price for finished product.

Montelena Herd won 9 prizes with 8 entries at Sacramento, 1916, including Reserve Grand Champion Boar.

A few service boars, also fall pigs of both sexes.

Now booking orders for spring pigs sired by prize winning boars.

A. L. Tubbs Company

CALISTOGA, CALIFORNIA.

shire, and there are few countries of any importance, from a livestock standpoint, in which the breed is not represented today.

Yorkshires have been raised in California only four or five years, but are becoming more popular every day. California conditions are ideal for raising them and more of the money we now send East would stay in California if we raised more Yorkshires.

YORKSHIRES.

Lloyd & Tointon, Santa Rosa: Three sows, one boar from Riverina Farm breeding.

H. H. Clark, Denair: Two sows of Riverina Nema and Pearl breeding. Herd boar not given. Young stock, 5 head gilts and boars.

J. R. N. Boyd, St. Helena: Fifteen sows, foundation from Nema and Pearl breeding. Montelena herd boar, Lake Park King. Just imported sow, of T. H. Canfield, a sister of World Fair Champion.

Montelena Farm, A. L. Tubbs Co., Calistoga: Twelve sows, mostly Nema and Pearl breeding, foundation from Riverina Farm. Herd boar: (1) Montelena Big Dick, first prize at Sacramento State Fair 1916; (2) Montaleno Nema by Oak Lodge Vine 91, out of Riverina Nema 9th, second at California Fair. Just imported the boar, Lake Park Longfellow, of Thos. H. Canfield, Lake Port, Minn. Young stock, eight young boars, 50 fall pigs.

Riverina Farm, Alex. D. McCarty, Sixty-two sows, of Pearl and Nema, Family traces back to Summer Hill, England. Include Riverina Nema, champion sow at State Fair 1916 and daughter of Deer Creek Martha, 13 times grand champion. This sow has farrowed and raised 83 pigs in six litters. Herd boars: (1) Oak Grove Ladd 7th, son of Dalmoney 9th; (2) Riverina Laddy 5th, grand champion at California State Fair 1916, sired by Oak Grove Laddy and out of Deer Creek Nema 8th; (3) Nilka Master Lad, bred by Donald Racklin, Ohio. Young stock, 5 gilts, 12 boars, 80 spring pigs.

Riverina Farms YORKSHIRES

We won Grand Championship at Sacramento, 1916, on Board and Sow of our own breeding. Grand Champion Boar and Sow at P. P. I. E., the boar of our own breeding. Foundation stock of every herd in State traces to this herd.

Boars, Gilts, Open or Bred,
and Bred Sows for sale.

Riverina Farms
Paradise Road
Modesto, Calif.

Hogs With Dairy Bring Bigger Profits.

Get all the 30-cent butterfat out of your alfalfa and corn silage; then get all the 14-cent pork out of the rest of their nutrients which will be in the shape of skim and buttermilk; then get all the plant food out of what remains. Then you can call yourself a scientific farmer. For in doing that, you will have raised the crops which produce the greatest tonnage of feed per acre and will have avoided the cost of long hauls. If you have a long warm season, you can raise grain for concentrates also, between the silage crops. Then you will have raised the greatest tonnage of suitable digestible nutrients per acre and will have fed them most economically to produce the highest-priced, most readily marketable products, with the least labor per dollar's worth of product.

No—not quite. That will not be true unless the animals are specialists in their work, and healthy.

The two feeds which produce greatest tonnage per acre in California are supplementary in a cow's ration—alfalfa and Indian corn for silage. These feeds are too bulky for a hog ration until they are turned into milk. If fed directly to hogs, much 30-cent butterfat in the form of alfalfa and silage is made into 12-cent hog meat; but a large part of the butterfat, especially in silage, is wasted entirely, for the hogs don't eat it clean.

So, cows are necessary in order to get the most dollars out of the feeds which can be most abundantly raised. But dairying would not always be

profitable without turning the skim-milk and buttermilk into high-priced products conveniently and economically.

How Much Milk.—Butter made last year in California creameries totaled 70,030,134 pounds, according to the State Dairy Bureau. If this averages 85 per cent fat, and if the average milk is 4 per cent fat, 1,428,615,549 pounds of skim and bona fide buttermilk were produced in California.

In no other way could this tremendous amount of the most easily digestible and palatable feed be used with profit except for hogs. And this profit is sometimes all there is in dairying.

How to Feed It.—Henry's experiments in Wisconsin showed the most value was obtained from skim milk fed to pigs with corn meal in the ratio of 3 to 1 by weight. One hundred pounds of grain was replaced by 327 pounds of milk when fed this proportion. Small pigs use a higher proportion of milk than older ones economically. In general skim or buttermilk is worth one-sixth its weight of grain.

Two Dangers to Avoid.—Milk without a concentrate to supplement and balance it does not make much profit above the cost of feeding it to pigs; and well over half its value is lost if fed alone or with alfalfa pasture only. The pork it produces thus is soft and inferior. The other danger is disease.

Dairy Hogs Diseased.—In four cities of a leading dairy State where

Gombault's Caustic Balsam

The World's Greatest and Surest
Veterinary Remedy

HAS IMITATORS BUT NO COMPETITORS!

SAFE, SPEEDY AND POSITIVE.

Supersedes All Cautery or Firing. Invaluable as a CURE for

FOUNDER,
WIND PUFFS,
THRUSH,
DIPHTHERIA,
SKIN DISEASES,
RINGBONE,
PINK EYE,
SWEENEY,
BONY TUMORS,
LAMENESS FROM
SPAVIN,
QUARTER CRACKS,
SCRATCHES,
POLL EVIL,
PARASITES.

REMOVES

BUNCHES or
BLEMISHES,
SPLINTS,
CAPPED HOCK,
STRAINED TENDONS.

SAFE FOR ANYONE TO USE.

NOTHING BUT GOOD RESULTS.

Have used GOMBHAULT'S CAUSTIC BALSAM for more than 20 years. It is the best I have ever tried. I have used it in hundreds of cases with best results. It is perfectly safe for the most inexperienced person to use. It is the largest breeding and finishing of trotting horses in the world, and no one but a doctor. —W. H. HAYWOOD, Prop. Belmont Park Race Farm, Belmont Park, N.Y.

USED 10 YEARS SUCCESSFULLY.

I have used GOMBHAULT'S CAUSTIC BALSAM for ten years; have been very successful in curing curb rim, capped lock and knee, bad ankles, rheumatism, and all most every cause of lameness in horses. Have a shelling forty head, mostly track and speedway horses, and certainly can recommend it. —C. C. CRANER, Training Stable, 690 Jennings Street, New York City.

None genuine without the signature of
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Sole Proprietors & Distributors for the
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AMMAWAGE STOCK FARM

BREEDERS OF

Poland China Hogs

Holstein and Shorthorn Cattle

OUR POLAND CHINA SOWS ARE ALL FINE INDIVIDUALS AND REPRESENT THE BEST BLOOD LINES. AS AN EXAMPLE, EFFIE B IS A GRANDDAUGHTER OF CHIEF PICTURE 2ND AND CANDY KID. SHE IS WITH FIG BY THE GREAT BOAR PRESIDENT. OUR HERD BOARS ARE LACEY, A SON OF CANDY KID AND PANAMA SILVER BY PANAMA BLACK OUT OF SILVER DAISY.

AT THE HEAD OF OUR HOLSTEIN HERD IS CREAMCUP FIDESSA PONTIAC BURKE, OUT OF A 33.54 POUND DAM. GOLDEN CUMBERLAND IS OUR SHORTHORN SIRE.

SELECT BREEDING STOCK SUITABLE FOR FOUNDATION FOR SALE

Correspondence Solicited

GEO. G. LOUGHERY, Prop.

VISALIA

CALIFORNIA

hogs are fed skim milk, of all hogs slaughtered under Federal supervision in 1915, 9 per cent, 10.9 per cent, 12.1 per cent, and 25.1 per cent respectively were tubercular, though most of them showed no outward signs of it. Of the 451,478 hogs slaughtered the same year in Ft. Worth, Texas, having been raised on pasture and grain, only 2.4 per cent were tubercular according to Bulletin 781 of the U. S. Dept. Agr. Nine per cent of all hogs slaughtered in U. S. under government meat inspection during the fiscal year 1916 were tubercular.

Except from Tubercular Cows they could not have contracted the disease (with small numbers due to sputum from tubercular attendants, pigs suckling tubercular sows; and larger numbers due to eating uncooked tubercular garbage or carcasses of animals or poultry).

State Veterinarian Charles Keane advises us that between Oct. 1, 1916, and Feb. 28, 1917, 15,439 head of dairy stock had been tested under his supervision on 1,348 ranches. Of these 2,618 head, or 16.9 per cent of all cattle tested, were tubercular.

Healthy hogs fed tuberculous milk for three days and butchered 107 days later in U. S. Dept. Agr. experiments showed that 83.3 per cent had become tubercular. Healthy Hogs fed tuberculous milk 30 days and butchered 50 days later had all contracted the disease.

Condemnations of tubercular hogs in San Francisco in one week when most of the stock was from dairy districts reached 6 per cent.

Three Causes are apparent. Practically all of these hogs had either been fed milk from tubercular cows, had contracted the disease from their manure, or had been fed tubercular garbage or carcasses.

The Remedy is equally apparent. Cook all garbage and carcasses thoroughly. Exclude tubercular attendants. Do not let hogs touch manure from tubercular cows. Insist on pasteurization of all milk fed, or know that the milk is from healthy cows. If you feed creamery milk be sure it is all pasteurized thoroughly and not a drop of unpasteurized milk put into it later. A drop may contain 10,000 bacteria which would in a few hours infect any amount of milk. State laws and State supervision of pasteurization at creameries may be best.

Where milk is separated at home, Dr. Keane says, "We would go a step further and advise bringing milk up to boiling point to avoid need of a thermometer and have a safe margin."

Who Loses Condemned Hogs?—Not always the grower, though in the East many packers make the shippers pay for half of the condemnations, and this is also in force with the biggest packer of San Francisco. The time will come when this loss will be put directly onto the producer where it comes now directly in the form of lower prices.

COW'S EYES SWELLED.

To the Editor: My cow slobbers and has become very poor. At times she rubs her eyes and they swell up.—O. L. J., Fallon.

Place a few drops of a 5 per cent argyrol solution in the eyes twice a day.

THE DE LAVAL LINE

Modern, Efficient Farm Equipment of Real Value

Ideal Green Feed Silo and Acme Feed Cutter

Good Ensilage Increases the Milk Flow 25% and Reduces the cost of Butter Fat Production 15% to 20%



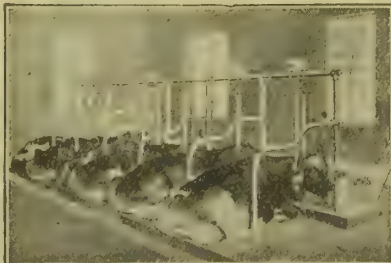
Superior in design and quality, the Ideal will return to you as good ensilage every pound of green feed you put into it.

The Light Running Acme Cutter

Not only fills the silo, but its meal-making attachment enables the production of an excellent grade of Alfalfa Meal at a cost not exceeding that for baling.



James Barn Equipment



Cow Comfort

- Steel Stalls
- Stanchions
- Litter Carriers
- Feed Trucks
- Calf Pens
- Bull Pens
- Cow Pens

The Champion Cream Saver

The New De Laval Cream Separator

- Larger Capacity
- More Cream
- Longer Life
- The World's Standard De Laval Milk Clarifiers
- De Laval Whey Separators



DAIRY SUPPLIES

Sanitary Milk and Cream Coolers, Babcock Testers, Milk Fever Outfits, Milk Pails, Refrigerating Plants, Pumping Plants, Viking Rotary Pumps, Centrifugal Pumps.

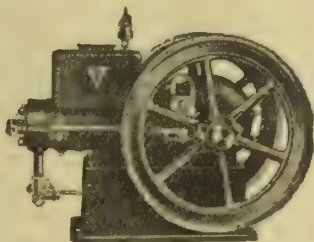
Alpha Power Sprayers

Equipped with the Alpha Automatic Pressure Governor

Uniform steady high pressure. No troublesome relief valves or diaphragm pressure regulator required.

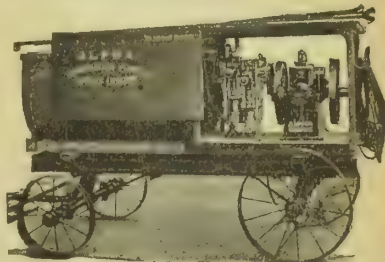
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"Everything for the Dairy."

101 DRUMM STREET,

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Says the Calf

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Not one man in a thousand now has his shoes made to order. You can get a good fit at the shoe store. It's the same with Felt Face Horse Collars—

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Influence of Two Shorthorn Bulls.

[Written for Pacific Rural Press.]

As you see them in the corrals, they are just two old "shelley" bulls with rough coats of hair and an all-round appearance of many years of service. And yet they have retained that massive, thick, blocky, compact form so desirable in the beef animal.

To the student of Shorthorn history in California these 11- and 12-year-old bulls, Knight's Perfection and King Lancaster, must always be reckoned with, both for their own and their progeny's performance in service and show ring. To the younger breeder of all kinds of livestock, their history should straighten any misconstrued idea as to the value of the good sire in the establishment and maintenance of profitable herds and flocks.

Another important point brought out by a study of these two old bulls is the lack of show ring type in one and the pronounced show-ring standards of the other, although both have been great sires of show-ring winners. It emphasizes a fact, well known by successful breeders, that show-ring type is not always necessary in the sire in order that he produce properly formed offspring.

When the Hillcrest Stock Farm, owned by T. S. Glide, purchased Knight's Perfection in 1907 as a yearling it was with the intention of breeding him to the heifers of the previous herd sire, King Edward, a bull that had won first as a calf at the St. Louis Exposition and was grand champion bull at the Alaska-Yukon Exposition.

While purchased at a goodly sum, it was early recognized that Knight's Perfection was lacking the symmetry of form of a show bull; but his sire, Red Knight, had been a wonderful producer, and he had the frame, bone and constitution which Mr. Glide believed necessary to perpetuate.

On that account he was never shown but instead retained to breed on the King Edward heifers. The results of this cross quickly showed a preponderance of type and bone in the calves; and when exhibited at the livestock shows, they invariably won a little more than their share

of the prizes. Notable among these were the bulls Greenwood Knight, Greenwood Knight 2nd (both grand champions at the California State Fair), and the cow September Morn, whose show ring sensation is an old story among Shorthorn fanciers.

To the other bull, King Lancaster, fell the work of perpetuating his own qualities through the heifers of Knight's Perfection. His own conformation may best be explained by the statement that he was a three-time grand champion at the California State Fair, a feat no other Shorthorn has ever performed. And even yet he retains the straight, broad top line, compact middle and quality of head and neck that made him so popular years ago.

Like his father, King Edward, this great bull proved a wonderful transmitter of his own good characters. His get also were persistent prize winners at the shows, being bred to the best sons of Knight's Perfection; and in spite of his show yard career he was at all times a good sure breeder.

It would be unfair to both of these grand old herd sires, which are still doing service, to limit their praise to their own and their immediate progeny's performances; for it is the persistent transmission of good qualities in their granddaughters and grandsons and their great granddaughters and great grandsons that marks them so outstandingly good.

As you go through the present Glide herd of registered cattle, you find that the outstanding prospects are descendants of one or the other of these old bulls; and a comparison of them with recent purchases from other noted herds fails to convince you of the latter's superiority.

True enough, great sires are the exception rather than the rule; but Mr. Glide's experience should prove that the sire is not only half the herd but in many instances a great deal more. It is safe to assume that no cow or cows could ever do such a lasting good to any herd or flock of livestock as these two bulls have done for the Glide herd.

Wasted Eight Years of Breeding.

[Written for Pacific Rural Press.]

Not long ago a subscriber asked if he shouldn't save a young bull he had raised that was out of a good grade cow, sired by a purebred bull, reasoning that the bull was more apt to get high-producing heifers than a purebred bull of which he knew nothing.

It was on just such reasoning as this that H. E. Wickman of Butte county wasted about eight years in his breeding work; for while he has been dairying at his present location about 10 years it was only about two years ago that he began using a registered Holstein bull.

Both of the two bulls he had used previous to that time were sired by good registered bulls and out of heavy-producing grade cows. Heifers from both of these bulls were kept in the herd after freshening, with the idea that they were as good if not better than their dams.

Not having any certain method of determining their butterfat produc-

tion it was not difficult for Mr. Wickman to be fooled as to the relative worth of such heifers. But the third bull he purchased was of purebred ancestry on both sides; and soon after that he joined the local cow-testing association. Then he found that instead of the daughters from the grade bulls holding their own with the mature cows, they were producing less. That is why he thinks he has wasted so much of his time in the past 10 years and why he is an advocate of testing associations and purebred bulls.

A. R. Magruder of the Gotshall Cattle Loan Co., Ripon, reports the sale of the Holstein-Friesian sire, Juliana Stratford King Segis, to W. L. Denison of Modesto. This young bull was sired by a son of King Segis Pontiac Emperor and Juliana De Kol.

D. P. Robinson of Solano County is reported to have sold 60 ewes with their lambs for \$1080.



"We All Used To Leave The Fields—"

"One man and the EMPIRE do the work of three men," says Mr. A. W. Clayton, Madison, Wis. That permits the other two men to go right on with their work—or perhaps saves their salaries entirely.



will make your dairy more profitable and eliminate the drudgery from dairying. With an EMPIRE the milking is an incident—not an ordeal.

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EMPIRE Milking Machines are simple and efficient—gentle and natural in their action, and above all, they milk the SAME WAY EVERY DAY,—more uniform in action than even the calf. They safeguard the condition of valuable cows.

Let us tell you ALL the benefits they offer you. Write for Catalog 45—and also ask for information regarding EMPIRE Cream Separators, Gasoline Engines and Electric Plants.

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Bloomfield, New Jersey

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ORMONDALE SHORTHORNS



Golden Goods, Jr., Herd Sire.

Our 1916-17 offering of yearling bulls is small but select. They are all heavy boned, solid red in color and of Scotch and Scotch-topped breeding. Suited for either the range grower or breeder.

DUROCS.

Our Durocs are of the big type, with big bone, well-arched backs and carrying good hams.

We have a few head of service boars, now ready for service, solid red in color and out of prize-winning animals.

Every Animal Positively Guaranteed

Whether you buy or not, visit our ranch, 7 miles from Palo Alto on Woodside Road. We welcome inspection. Prices and pedigrees on application.

Shorthorn Cattle
Duroc-Jersey Swine

ORMONDALE CO.

R. D. No. 1
Redwood City,
California.

KINGS COUNTY JACK RANCH

BREEDERS AND DEALERS

AMERICAN JACKS AND JENNETS.

LARGEST HERD IN THE COUNTRY

80 Head Jennets

40 Head Jacks

CAN SUPPLY YOUR WANTS AT ALL TIMES.

Write, or Come and See Them.

John Burrell, Proprietor

R. B., Box 73.

Hanford, Cal.

Sale Barn in Hanford near S. P. Depot.

Seventeen Years' Silo Experience.

[Written for Pacific Rural Press.]

It is thought by many that the silo is a comparatively new thing in California; and for that reason we have heard many express a desire to wait till they have been thoroughly tried out before building one.

That this theory is not true may be seen in Sonoma county where for 17 years continuously John Denman has been a silo owner and user in spite of the fact that comparatively small corn yields are the rule rather than the exception.

Mr. Denman had four silos the greater part of that time, using them on both his Bloomfield and Penn Grove dairies, and though they were cheaply constructed of studding and resaw, one of them that was protected by a barn is still in good condition. The others had to be re-lined with building paper and resaw to overcome leakage.

Two distinct kinds of land have been used by Mr. Denman for corn growing, one a heavy black adobe and the other a light sandy soil. This and the further fact that one section was colder than the other called for different kinds of seed and different cultural methods.

On the dairy near Bloomfield the soil is sandy and early frosts often visit the section. On that account King Phillip seed has been used because of its early maturing qualities. The land there is plowed twice and harrowed six or seven times. A check row corn planter is used, planting the seed in hills three and a half feet in rows of an equal distance apart. Planting is usually done about the middle of May.

After the plants are above the ground the cultivators are started, the field usually being cultivated three times before harvest time in order to conserve the moisture, as irrigation is not practicable.

At times corn binders have been tried, but usually small-handled hoes

are used in harvesting the corn, as there is less waste of the stalk and the cost is practically the same with both methods. Mr. Denman says that with hauls of half a mile from field to silo the entire cost per ton of harvesting is \$1.25.

Value of Succulence.—The yield per acre of green silage is not large, the average being about five tons in fairly good years. But even this is profitable because it leaves the land in fine condition for grain or hay crops the following year, and furnishes the dairy cows a succulent feed at times of the year when there is no other green feed. In the past there have been years when the corn crop was light, and though the silage was replaced with hay and concentrates, the milk yield was materially reduced.

Unless a hot north wind comes up about ripening time, no water is used by Mr. Denman in the silo. He likes to have the ripest of his corn "pretty hard" before starting to cut; since the riper the corn, so long as there is moisture, the better the silage. If the field is hit with a dry wind just about ripening time he turns a small hose full of water into the cutter so that the silage will pack down well, otherwise no water is used.

On the adobe soil, cultural methods are somewhat different. There Yellow Dent seed is used, as it has a longer time to ripen. There the soil is plowed and top-worked a good deal in order to get the seed bed into good condition.

In feeding his silage to highly-bred Jerseys with an average weight of about 950 pounds having an average yearly production of 320 pounds fat, Mr. Denman uses 18 to 20 pounds silage, what wild oat hay they will eat, and seven or eight pounds of bran and oil cake meal, equal parts.

Alfalfa-Barley Silage Satisfactory.

[Written for Pacific Rural Press.]

"Barley and alfalfa mixed made the best silage I ever used," says J. D. Huston of Imperial, who has tried several kinds for his big Jersey herd in the past two years. This was siloed early in spring. It lasted until June in first-class condition; and the cows produced most while eating it.

The trouble with grain for silage often arises from the great proportion of air in the straws, due to waiting until it is too ripe. Air must be excluded from silage as perfectly as possible.

Mr. Huston's barley was in the milk when cut. The stems also were full of milk, which excluded air; and no water was added except to wet the top layer where it had been exposed overnight. The alfalfa was half in blossom. It and the barley were bound into sheaves like grain in the East. The sheaves were run through the silage cutter as soon as possible, the binder not being allowed over ½ day's start. The same thing will be done this spring.

A neighbor siloed barley in the dough; but the beards were tough

and the cows did not like it, though there was no noticeable spoilage.

SOFT BUTTER

To the Editor: A recently purchased cow gives milk rich in butterfat; but the butter made from her cream melts almost to oil in temperature that does not affect butter from other cows on the same feed.—Subscriber, Bethany.

[Answered by S. L. Denning, University Farm, Davis.]

It is difficult to locate the trouble with your subscriber's butter from the limited information furnished. He has a very weak-bodied butter. This is common at this time of the year when the cows are largely on pasture or green feed. The butterfat is very soft and gives this weak body, especially if the churning temperature is too high and the butter is worked too soft. I would suggest that he lower his churning temperature a few degrees and then use wash water that is a few degrees colder than the buttermilk so as to have the butter fairly firm during the salting and working.

IF YOU FEED STOCK YOU NEED A SILO

While you have been feeding high-priced hay, grain and mill feeds, during the past months, haven't you often wished you had a well-filled silo to help out? It would almost have paid for itself this season, wouldn't it?

BE SURE TO HAVE A SILO FOR THE COMING SEASON, AND BE SURE IT'S A

Remco Redwood Silo

Remco Silos are best for California Conditions. They are made of air-dried redwood which is next to everlasting and is not affected by the chemical action of the silage. They are made by a Company that has had 28 years of experience in building wood tanks, pipe and silos, and are designed and built to suit your requirements.

—WRITE US FOR FURTHER PARTICULARS—

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1608 Hobart Bldg., San Francisco.

Edgemoor Farm Guernseys



Imp. Itchen May King, 25174.

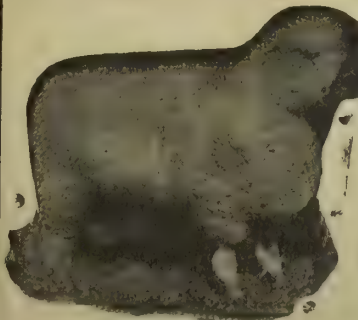
**Pretty
Productive
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Few Animals of Either Sex For Sale

SANTEE, CALIF.

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Champion Ram P. P. I. E.

San Ramon Shropshires
WINNINGS P. P. I. E., 1915.

Aged Ram, First and Second, Yearling Ram, First Ram Lamb, First, Second, and Third, Champion Ram, Yearling Ewe, Second, Ewe Lamb, Second and Third, Get of Sire, First, Pen of three Lambs, bred by Exhibitor, First and Fourth, Pen of Four Rams, bred by Exhibitor, First and Fourth, Flock, any age, Second, Flock, any age, bred by Exhibitor, Second, Flock, one year old, First, Flock, one year old, bred by Exhibitor, First, Flock under one year, First, Flock under one year, bred by Exhibitor, First, Produce of Ewe, First, Second and Third, Premier Championship for Breeder, Premier Championship for Exhibitor, A total, including American Shropshire Specials, of 15 Firsts, 9 Seconds, and 6 Championships.

Purebred Registered Rams and Ewes.
Individuals or Carload Lots.
BISHOP BROS., Agents. SAN RAMON.
Contra Costa County, California.

Live Stock and Dairy Notes.

[Livestock breeders all over the State are invited to send on postal cards, notes regarding their sales, State and County Fair intentions, new stock, etc.]

DAIRYING AND HOGS.

The Reynolds Land & Cattle Co. of San Ardo recently shipped a carload of hogs to San Francisco which netted them \$2483 f. o. b. San Ardo.

A. E. Slater of Pacheco, Contra Costa county, secured a Holstein bull from New York to replace the son of Prince Gelsche Walker which he sold last fall.

Official records still being made by H. E. Cornwell will be announced at the sale April 19 under management of the Cal. Breeders' Sales and Pedigree Co.

The Los Angeles county supervisors amended their garbage-hog ordinance so that breeders who do not feed garbage will pay 50 cents instead of \$3 per quarter per 100 head.

W. J. Higdon of Tulare sold his entire herd of 25 purebred Guernseys to A. J. Welch of Redwood City and will breed Holsteins only. He has 50 Holsteins and is in Washington to buy more.

Tulare County Registered Duroc Ass'n directors recently appointed are Allen Thompson, Tulare; J. L. Dickerson, Visalia; Le Grand Dailey, Tagus; R. E. Clifford, Strathmore, and W. J. Fulgham, Visalia.

Eight cows of the Gridley Cow Testing Ass'n produced over 50 pounds butterfat in March, according to figures furnished by Tester Geo. Clark. H. E. Wickman's grade Holstein stood highest with 67.9 pounds.

Dr. J. A. Crawshaw of Hanford reports sale of two gilts to W. E. Levee, Lowell Hill, Nevada county; one boar to E. R. Putz of Laton; and one boar to Dr. Frank Griffith of Hanford. His sows have had large healthy litters this spring.

The 400 purebred Holsteins of the Vina Ranch of Stanford University are to be dispersed at the ranch June 5, 6, and 7 under direction of M. H. Tichenor, sales manager. This herd was founded in the early 80's by Gov. Stanford, but it was only about two years ago that the last grade cow was sold.

McAlister & Sons of Chino write: "In the junior two-year-old division we have thrice exceeded the State records in the past two months with heifers freshened in our herd. K. P. Walker has the best record: 23.17 lbs. butter in 7 days, having freshened at 23 months."

Mark Requa, who has about 100 purebred Berkshires on the Anchorage Farms at Orland has recently bought for \$1500 the boar Star Leader bought for University Farm by Prof. J. I. Thompson for \$100 just before he was awarded junior championship at P. P. I. E.

Co-operative market-hog auction sales will be held at Tehachapi April 12, Bakersfield April 13, and Wasco April 14 similar to those recently

held at Wasco with great success. G. H. Peters was sent to Los Angeles to find out market conditions and to bid in the hogs if packers do not come up to market prices.

W. A. Young of Lodi recently received two young sows from Iowa. He has made the following sales: Boars to M. L. McDonald, Coopers-town; V. D. Goodrich, San Jose; Danner Bros., Santa Rosa; Stockton Seed Co.; Tony Tamagini, Youngstown; H. L. Martin, Oak Run; Paul Hopkins, Willows; and females to C. L. Bover, Youngstown; J. W. Kingry, Highland Spring; H. W. Robinson, Grass Valley; H. C. Carr, Porterville; M. C. Freeman, Marysville; J. G. Wise, Youngstown; C. S. Harker, Bakersfield; and O. H. Carr, Colusa.

Elmer Lamb of Ceres writes, "Ira Jackson, of Ohio, recently sold 45 Duroc Jersey sows bred to Orion Cherry King and Orion Cherry King Jr. for an average price of \$305.00 per head, the highest average ever received for any breed. The highest sow sold for \$570.00 and the lowest for \$165.00. Orion Cherry King was champion of all breeds Ohio State Fair 1913 and Premier Champion Omaha 1916. His son, Orion Cherry King Jr., was Grand Champion of Ohio and Grand Champion at the International Swine Show, Omaha, 1916, the biggest hog show ever held."

BEEF CATTLE AND SHEEP.

Sheep shearing in Humboldt county, Nevada, which ordinarily begins late in April, is delayed this year by bad weather.

Cattle and sheep men in the mountain sections of Alameda county report feed conditions much improved during the past three weeks.

C. W. Bowers of Davis has recently sold several registered red Durham bulls to Northern California points at \$300 to \$500 each.

Easton and Ward, horse breeders of Burlingame, propose to establish purebred cattle on their newly-acquired ranch in Contra Costa county.

J. C. Dobbel of Contra Costa county sold 500 of his ewes for \$12 per head. One of his neighbors sold the pick of his lambs to the butcher at \$10.

W. M. Carruthers feels that his sale of purebred Shorthorns at Mayfield May 2 will enrich the herds of many breeders in what he calls California, "The Shorthorn State."

Feed conditions in Santa Barbara county are said to be exceptionally good at this time, the season being much further along than in other sections of the State. Some hay is already in the shock.

E. H. Murphy of Perkins writes that he will soon ship a purebred Shorthorn foundation herd to Little Shasta Valley, Siskiyou county, and

Hillcrest Stock Farm.

Shorthorn Cattle, Shropshire and Merino Sheep



King Lancaster, sired by King Edward, grand champion bull State Fairs, 1909-10-11.

Shorthorn Bulls for Sale, sired by such noted bulls as King Lancaster, Knights Perfection, Greenwood Knight and Greenwood King. Nearly all offsprings of the famous King Edward.

These Bulls are conceded to be the best offering ever made from the Hillcrest Stock Farm.

For Particulars Apply—

T. S. GLIDE
Proprietor.
Davis, California

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San Francisco,

Offers for sale a select lot of weanling registered bulls, sired by such bulls as Fond Lavender, College Count 3rd, Besie's Council and Whitehall of Orange. For prices and particulars apply to

DAVID J. STOLLERY

320 Sharon Bldg.,

California.

Do You Want Long Distance Breeding?

We have a son of the California State Champion three-year-old for sale. Born October, 1915; Sired by PRINCE ALCARTRA KORNDYKE, whose dam is TILLY ALCARTRA.

The Dam of this young bull is not a fifty-lb. cow, but she has to her credit 21,208 lbs. milk and 860 lbs. butter in one year, which is the largest record ever made in California by a Junior three-year-old.

If you are in the market for a bull, it will pay you to visit our ranch and see what we have to offer—at prices that will surprise you.

J. S. GIBSON CO., Box 97, Williams, Cal.

"THE NAME GIBSON INSURES QUALITY."

DAIRY COWS

Registered Beef Bulls Purebred Hogs

Large or small lots. Any order executed.

Geo. P. Robinson Co.

426 J St., Travelers Hotel Building, Sacramento
LIVESTOCK BROKERS.

BULLS - Shorthorns - HEIFERS

REGISTERED AND TUBERCULIN TESTED.

Animals of either sex ready to deliver in car lots or singly.

H. L. & E. H. MURPHY, Perkins, Cal.

CATTLE FEED FOR SALE

I have both wild feed and hay to be sold together, and fed out by owner. Write me at once for prices, etc.

JAS. McCORD,

Hanford, Cal.

SAVE YOUR CALVES



Raise Them Without Milk

Why throw away money by knocking them in the head or selling them for a dollar or two at birth when they can be raised or vealed WITHOUT MILK at a fraction of the cost of feeding milk. You profit both ways: the milk and still have the calves.

The Best Milk Substitute to Use Is

Ryde's Cream Calf Meal

the most successful milk substitute on the market—the standard of perfection. Thousands of farmers are using it and cannot say enough for it. It is NOT a stock food—it's a complete food that long experience has proved to be right for rearing calves. It contains all the nutrition of milk prepared in the most digestible form and is sold on a money back guarantee to give results.

100 lbs. equal to 100 gallons milk—Try it on your calves.

Great Western Mills, So. Calif. Distributors,
Dept. B, Deak B, Los Angeles, Cal.

that last week he shipped two bulls to Glenn county, one to Humboldt, and one to Tulare county.

Bishop Bros. of San Ramon report a 130 per cent lamb crop with their purebred Shropshires to date. Their lambing this season has been done at Midway, where conditions have been favorable. They expect to have about 600 rams for sale the 1917 season.

A Hereford organization is proposed for a meeting called by Charles Rule, H. H. Gable, and D. O. Lively at San Francisco May 2. Everybody in the Coast and neighboring States interested in Herefords is invited to attend, and go next morning to Mayfield where will be held the first public sale of registered Herefords ever undertaken in California.

J. M. Dunlap has returned from the East and brought with him four Hereford bulls for the Simon Newman Co. Three were Bonnie Braes from Wm. Andrews & Son of Iowa, who bred the bull Bonnie Brae, which sold twice for over \$10,000. Mr. Dunlap also brought one Short-horn bull for Benj. Rush, secured from John Cresswell, of Iowa, an exceptionally fine animal of Scotch topped Bates breeding. Mr. Dunlap also brought four yearling Scotch heifers of Duchess of Gloucester breeding, which he now has at the Roselawn Ranch near Woodland.

F. W. Harding, Sec'y of American Shorthorn Breeders' Ass'n, spent several days in California last week visiting the herds of W. M. Caruthers, Ormondale Farm, Palmdale Ranch, Chas. F. Hawkins, A. W. Foster, London Ranch, T. S. Glide, Roselawn Farms and others. He then left for the Northwest, on his way home. While here Mr. Harding announced that the California State Fair will have a \$3000 purse hung up for Shorthorn prizes, Los Angeles will have \$3000, Portland \$5000, also Fresno will have a liberal donation. The American Shorthorn Association is giving every encouragement to the purebred men on the Coast this year.

HORSES, JACKS, AND MULES.

A fire at Vladivostok, Siberia, destroyed 50,000 bales of cotton last week valued at \$10,000,000.

C. W. Bowers of Davis has shipped a carload of draft horses to Klamath Falls, Oregon.

A shipment of 10 registered Black Mammoth jacks has recently reached Tulare for disposal among farmer breeders.

California contractors are trying to get Colusa county mules at \$250 per head according to the Colusa Sun.

Many stockmen of Contra Costa county have turned their stock onto volunteer grain on account of short pastures.

Two carloads of mules from San Joaquin county and one from Solano have been shipped to Los Angeles for use of the U. S. army. They cost up to \$200 and were scarce at that.

The best equipped horse barn ever erected in California is being built by Easton and Ward on their newly acquired ranch near Danville, Contra Costa county, to house their purebred Shires. Twenty-two box-stalls all face a court, with feed overhead. They expect to move their horses from Burlingame about the last of May.

CALIFORNIA POLAND-CHINA BREEDERS' ASSOCIATION.

The officers of the newly-formed California Poland-China Breeders' Association are not going to be satisfied to follow in the footsteps of other breed organizations. They will strike out along new and original lines, and do things differently.

Among other things, they propose to encourage the Banker-Farmer and the Pig Club movements; to give the Poland-China hog publicity in our magazines and newspapers; to furnish speakers at conventions and gatherings; to hold consignment sales in different parts of the State; to encourage livestock exhibitions and interest breeders in showing; and last, but not least, to make every membership worth many times its cost by taking a deep, personal interest in the member, and giving him such hearty co-operation and support as to enable him to have, not merely ordinary success, but a bulging measure of prosperity.

Everyone in California who raises Poland-Chinas is urged to join the Association at once. The dues are but \$1 a year, and remittances should be made to R. H. Whitten, Secretary-Treasurer, 610 Security Bldg., Los Angeles.

Commencing April 1, Mr. Whitten plans to issue a monthly bulletin, giving the news in Poland-Chinadom, also practical suggestions and helpful information. This will be mailed free to all members.

The next meeting of the Association will be held at the University Farm, Davis, during Farmers' Week in May, the exact date to be announced later.

A consignment sale will be held at the State Fair in September, to which the breeders will consign some of their best animals and show

the people what real Poland-Chinas are. It will be the greatest sale of its kind ever held on the Coast.

HIGH RECORD HEALTHY HOLSTEINS

Of the right sort to strengthen your established herd or upon which to build a new herd, will be sold to the highest bidder on

THURSDAY, APRIL 19, 1917,

at H. E. Cornwell Ranch, two miles north of MODESTO, CALIF.,

when we will sell the entire herd, except a few heifer calves, owned by H. E. Cornwell.

38 Registered HOLSTEIN FEMALES & BULLS 6 Grade

JERSEY COWS AND HEIFERS

The registered Holsteins include: Cows with official records up to 26.50 pounds butter in 7 days.

Cows with semi-official records up to 707.31 pounds butter in one year.

Splendid heifers and cows with high official and semi-official records, bred to PRINCE HISKE WALKER, son of the famous Prince Gelsche Walker and out of Hiske of Riverside, 26.63 pounds butter in 7 days, 711.57 pounds butter in one year.

PRINCE HISKE WALKER HIMSELF WILL BE SOLD

and if you want a bull of real herd heading quality and breeding, figure on being the last bidder for him.

There will be also a choice offering of young sons of Prince Hiske Walker out of good dams. Everything tuberculin tested.

Catalog now ready. Write for one.

Sale under management of California Breeders' Sales and Pedigree Co.

C. L. Hughes, Sales Manager, Sacramento, California. Auctioneer, Col. Ben A. Rhoades, Los Angeles.

HOLSTEIN FOLKS: Plan to attend the meeting of California Holstein - Friesian Association, Hotel Hughson, Modesto, 8 p. m., Wednesday, April 18.

Hogs Grind Grain

SAVES GRAIN ALWAYS SANITARY

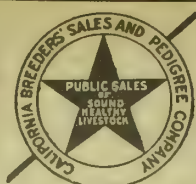


Received Highest Award Panama Pacific Exposition

The hogs grind their own grain, thus saving feed and labor. Mill will care for 30 hogs at full feed and is easily and quickly operated by hogs weighing 40 lbs. Grinds all kinds of grain, keeping clean, fresh and sanitary always. 60 Days' Trial Without Risk

We positively guarantee to refund all money and pay freight both ways if you are not absolutely satisfied at the end of 60 days' trial. Write today for free booklet and our 60-day Trial Without Risk Offer.

HOG MOTOR COMPANY 733 Andrus Bldg., Minneapolis, Minn.



Rosamond Farm Sale
Stalder Bros.,
Riverside, Cal.

On Tuesday, May 22, 1917,

We will sell a high class draft of registered

HOLSTEIN-FRIESIAN CATTLE, PERCHERON HORSES,

and about 20 head of high grade Holstein and Jersey heifers from the herds of Stalder Bros., ROSAMOND FARM, near Riverside, California.

Buyers of registered Holsteins have never before been offered such high record blood from one herd in California. Here are some of the 60 head to be sold:

A. R. O. COWS WITH RECORDS UP TO 28.07 POUNDS BUTTER IN 7 DAYS.

15 granddaughters of Prince Gelsche Walker and Aralia De Kol, former world's record cow.

20 cows and heifers in calf to a 34-pound grandson of King of the Pontiacs.

10 cows and heifers in calf to a 29-pound son of Prince Gelsche Walker.

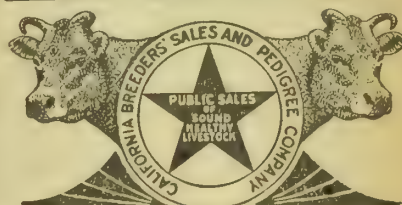
A son of a 28.91-pound cow sired by a 29-pound son of Prince Gelsche Walker.

5 sons of a 34-pound sire and out of good dams.

Catalog now in preparation. Write for a copy.

Sale under management of CALIFORNIA BREEDERS' SALES AND PEDIGREE CO.

Auctioneer, Col. Ben A. Rhoades, Los Angeles. C. L. Hughes, Sales Mgr., Sacramento, Cal.



The West's Best JERSEYS

At Your Own Price

We are instructed by Mr. C. G. McFarland, owner of Willowwood Herd of registered Jerseys, Tulare, Cal., to sell the entire herd, numbering about 60 head, at public auction, absolutely without reserve or limit, on Thursday, May 17, 1917.

This herd contains some of the very greatest Register of Merit cows on the Pacific Coast, and all of them, together with their daughters, will be sold to the highest bidder.

There will be a splendid selection of young bulls, many out of dams with high Register of Merit records and by richly bred sires.

This is absolutely the best herd of registered Jerseys ever offered for sale in the State of California.

Catalog now in preparation. Write for one.

Sale under management of California Breeders' Sales and Pedigree Company

Auctioneer, Col. Ben A. Rhoades, Los Angeles. C. L. Hughes, Sales Mgr., Sacramento, Cal.

Packwood Holsteins and POLAND CHINA HOGS

All cows have A. R. O. records. Sire, Pontiac Wayne DeKol, 15979, Son of Riverside Sadie De Kol Burke. Write or call and see our stock.

WALTER F. MITCHELL, Visalia, California



FIDESSA HELENA 152737 Milk 606.9 Butter 31.68. Test 4.0.

D. O. LIVELY STOCK FARM'S FIRST ANNUAL SALE of Registered Hereford Cattle

Will be held under the auspices of the AMERICAN HEREFORD CATTLE BREEDERS ASSOCIATION at Mayfield, California.

Thursday MAY 31, 1917

The offering will be made up of sixty-five head—twenty bulls and forty-five females. A splendid opportunity to start a pure bred herd.

WRITE FOR CATALOG D. O. LIVELY STOCK FARM, 215 Hobart Bldg., San Francisco

CARRUTHERS' FARMS FIRST ANNUAL

Shorthorn Sale

May 2nd, 1917

MAYFIELD, CAL.

Watch this Space for Later Announcements.

Prunes and Apricots Five Years Hence.

[Written for Pacific Rural Press.]

"Five years from now, I expect to see a prune crop of 300,000,000 to 400,000,000 pounds, owing to increased acreage in California," says General Manager H. G. Coykendall of the Cal. Prune and Apricot Growers, Inc. "The largest crop we've had was 210,000,000 pounds in 1912. Since then we've had short crops and high prices which have induced heavy planting. In Napa county the acreage has doubled. I expect Napa and Sonoma counties to produce greater tonnage five years from now than the Santa Clara Valley will have then, because they have so much more acreage available. The apricot tonnage of Santa Clara and counties farther south will be greatly increased.

"There will be better distribution throughout American cities due to advertising the merits of prunes and apricots and inducing more retailers to handle them on a smaller margin than they can now, because their trade will be so greatly increased.

Foreign markets will be exploited to the limit.

These fruits will be put out in new packages. Imperials will be sold as confectionery, to be eaten without cooking; but they will be handled more carefully than now. There will perhaps be a 2-cent differential for extra fancy apricots. All fruits will be paid for on the basis of quality.

Prune and apricot by-products, and new products, will be developed by careful experiments, and advertised to create a demand for them.

Crop reports that are reliable for all sections of the State will be

available for the growers. Their crops will not be sold until they show reasonable certainty of maturing.

Prices to growers will not be beaten down by speculation, for the gambling element will have been taken out. Prices to consumers will be based on the crop and the demand. Crops will be sold early in the season, perhaps in May, at prices not to be named until perhaps in September and probably guaranteed against decline until March in order to give confidence to Eastern buyers.

The goal of the Association is to eliminate the immense profits between producer and consumer. For the present there is no intention of trying to revolutionize the industry.

The Board of Directors, says Mr. Coykendall, are such men as would prevent the failure of any manager. The management is not a one-man proposition, but rests on a representative Board selected by the Growers' Trustees. Their policy is not fully shaped as yet, but it seems certain that affiliated packers will use their own brands and sell to their own customers; but all orders and payments will be made through the Association. There will be Association inspectors at all packing houses when the fruit comes in and when it goes out. The Ass'n will have full charge of all fruit which affiliated packers handle and will even attend to billing it out, etc. There will be immense prosperity.

If the organization fails May 1 for lack of support, these things will not come to pass.

Straw Mulch Improves Citrus Soil.

[Written for Pacific Rural Press.]

Adolph Butze improves the quality and size of his navel oranges and avoids the damage and cost of cultivation by mulching his orchard with grain straw bought cheap from neighboring farmers in Tulare county. The soil had become dead, hard, cloddy, cemented. Since the straw was put on, it has become mellow, soft, full of angleworms, and takes water well all summer.

"If I can't get all the straw I want within hauling distance, I will ship it in at a freight cost not to exceed \$15 per car," says Mr. Butze. "That's how much I think of it."

He hauled last year 90 loads of straw weighing over 2500 pounds per load, to 17 acres of eight-year trees. Twenty-five loads cost \$2 per load in the field as left by the combined harvester, and were

hauled 2½ miles. The rest was hauled seven miles, costing \$1 per load where threshed in settings. Labor and all cost \$375 last year.

Last summer, the straw was five or six inches deep in the orchard in July. This spring when the ground was plowed, the straw did not turn under very clean so only half as much will be used next grain harvest season.

Use of the mulch allows tree roots to come nearer the surface where most of the available plant food, air, and moisture are located. This makes the root pruning more severe when the orchard is plowed in spring; so it is not plowed deep, and the time may come, as it has in other mulched orchards, when no plowing will be done at all. Lime may be added to prevent souring.

Fighting the Cantaloupe Aphis.

[By Prof. C. W. Woodworth, University of California.]

When cantaloupe vines are first infested in spring the insect is limited to a very small number of vines upon which they become exceedingly abundant before developing wings and spreading generally over the field. When this is the case the practice of many growers is to sprinkle gasoline on each of these early infested vines and set fire to it, thus killing all the aphids as

well as the plant. This practice does not prevent the final general infestation of the field, but delays the time of infestation very appreciably. Where this aphid gives trouble, it would be well to adopt this method of controlling the insect, provided the winged spring migrants are as few as is the rule in the Imperial Valley. If the early infestation is general this is no good.

Wallace Nurseries

For over forty years we have been growing and selling dependable Valencia, Navel Oranges, Eureka Lemon and Grapefruit Trees. Our guarantee stands back of every Tree we sell you. Real Estate exchanges considered. Write us.

Sales Office:

505 I. W. Hellman Bldg.

Los Angeles, Cal.



Perforated Tree Protector

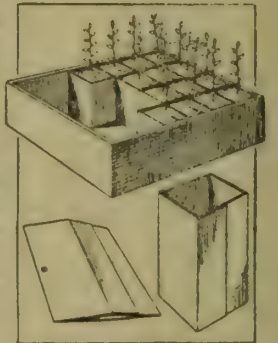
that will keep Squirrels, Rabbits and Gophers from barking your trees and give perfect protection from hot sun, sandstorms, barking in cultivation, etc. Tell us your pest and we will tell you what kind of a wrap to use. We make a number of kinds and can save every tree for you from pests.

Collapsible Planting Pots

These pots are bottomless. This allows you to plant pot and plant, never disturbing your plant nor stopping its growth in transplanting a single hour.

For starting early vegetables, such as Tomatoes, Cabbage, Eggplant, Cauliflower, Cucumbers, Cantaloupes and Squash; also for propagating Rose Cuttings, Geraniums, Eucalyptus and Conifers. It's the only practical pot on the market today for propagating work. Write us for samples of either Pots or Protectors. Tell us which you are interested in.

THE EXPAN PROTECTOR CO.,
935 E. Central Ave., Redlands, Cal.



CITRUS TREES

Planted from the famous San Dimas Nurseries, have produced the most famous groves.

We have the largest Citrus Nurseries in the world, and plant for the most exacting growers from Tehama to San Diego and Imperial counties. We assume entire charge of developing and planting for non-residents. Irrigation systems installed.

Satisfaction Guaranteed.

Lone Hill Citrus Association

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GUATEMALA AVOCADO NURSERY

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Bulletin No. 77, U. S. Dept. Agriculture.

"The Avocado of Guatemala form a distinct group * * and from a commercial standpoint, the most promising for introduction into our tropical possessions. The thick-skinned round and thick-skinned oval are probably the most promising, owing to the thick skin, good keeping qualities and fine flavor."

WRITE FOR BOOKLET OR CALL.

BUD SELECTION THRIFTY TREES

"Safety First"

Our buds for our Citrus Stock were selected from Pollard's Twenty-Five Year Orchard, which are as prolific and true to type a grove as found in California. We guarantee all trees to be true to name and absolutely untouched by frost.

POLLARD & MARTIN

NORTH WHITTIER HEIGHTS CITRUS NURSERIES, CALIFORNIA.

Two Fine Watermelons

Golden Nugget (yellow heart), Long Fellow (long, red, luscious), 15c per ounce, postpaid. All kinds of SEEDS.

WESTERN SEED CO.

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LIME FOR LAND

HYDRATED LIME OR GROUND LIME ROCK

Free Booklet and Prices on Application.

PACIFIC LIME and PLASTER CO.

907 MONADNOCK BLDG.,

Manufacturers,

SAN FRANCISCO

Olive Varieties to Plant this Season.

[Written for Pacific Rural Press.]

"Manzanillo olives were practically all picked in the San Joaquin Valley last season before the frosts came," says Pres't J. C. Martin Jr. of the California Associated Olive Growers, Inc. "The bulk of the Manzanillo crop of San Joaquin Valley was harvested a month before the bulk of the Missions," added Secretary R. L. Underhill of the Association. They were full ripe on R. Roberts' orchard at Madera Oct. 14. But in Butte county the difference seemed only two weeks according to these gentlemen, because the Missions here seem earlier than in the San Joaquin. It is fair to add that the frosts were earlier last year than in the previous five years—also the Missions seem to recover from ordinary frost where Manzanillos do not, as was seen in Sacramento county last season in many instances.

The earliness of Manzanillos is, however, leading many growers to plant at least 50 per cent of this variety, not only as a frost insurance but also to keep a smaller force of pickers busy through a longer season by picking Missions after Manzanillos.

Manzanillos must be picked a little less ripe than Missions, and must be handled with more care because the oil cells break down more easily and they are more subject to bruising. They have a little less oil, but are considered fully as good eating if properly processed.

Prof. F. T. Bioletti of the University of California notes that Manzanillos average slightly larger and more uniform and finds them as easy to process as Missions if not over-ripe. They hold their black color

better also, but he does not like their flavor quite so well. They should be picked just when they are turning black.

Ascolanos are the most promising variety, according to the Professor. They are larger and better flavored than Manzanillos and process ripe about as easily. They also should be picked just as they turn black. Their white flesh is a great advantage if it can be kept white, since it is much more appetizing. It has less oil, but not all the flavor is due to the oil, says Prof. Bioletti. C. C. Graber of San Bernardino county has also had great success processing ripe Ascolanos. This variety bears regularly and ripens about the same time as Manzanillos. "Where Manzanillos do bear well, they bear regularly; but the Ascolano seems safest of all, especially where lots of wind prevents Manzanillos from setting fruit."

The value of Ascolanos and Sevillanos according to Messrs. Martin and Underhill is chiefly in their size. They are purely for pickles, green or ripe, as they are not considered a satisfactory oil olive. There are only a few processors in the State who have made a success processing these varieties ripe; but that shows it can be done.

There is very little difference between these varieties, Sevillanos being a little longer and about the same diameter as Ascolanos.

In selecting Mission olive trees, it is well to learn definitely the size of fruit, etc., that grew on the stock from which they came, since there are several rather distinct types, not all of which are desirable.

Trebled Thompson Grape Crop.

[Written for Pacific Rural Press.]

"Last year I was so hopeless about this vineyard that I was ready to quit. The last crop was less than half a ton per acre of strings," said C. K. Hays of Kerman in Sept., 1916, concerning his 5 acres of Thompsons.

This year he picked 3000 trays, the berries "nearly as big as Malagas and the bunches like ears of corn." One vine had four trays easily. Where they had been picked when we saw them, the alternate rows were packed tight as possible with some on the sides, signifying over two tons of raisins per acre there.

"But the fruit wood I have for next year is what tickles me," said he. The canes were fat, hard, and mature already in September with none wasted away at the tips as is customary in many vineyards where the vines have not strength to finish their wood growth. I expect three tons of raisins per acre next year. It's the first time in the eight years I've been here that I've gotten enthused," said Mr. Hays.

The crop in 1916 was due to pruning and training the vines and pinching end buds. These irrigations were given in mid-April, late June, and late July.

The Fine Wood for next season was partly due to the methods which produced the crop as well as to a pinching of the canes in July to keep those that are to be used next year

from growing much over seven feet long, making them develop and mature fruit buds at laterals all along the cane.

"If I don't force the laterals out this year," said he, "they will come next year and sap the fruit buds at their bases just when the buds should be nourished by them. Because I forced laterals all along the canes this year, the fruit buds at their bases are all ready for business next spring. We get our big bunches from the plump buds beside good laterals."

Wires Fell Down.—Mr. Hays' wire trellis, stapled on the sides of the stakes, were not sufficient to hold this year's surprising crop. He had been advised last spring that the top wire should be laid on top of the stakes; and so it proved. Half of the wires were down in September, though the staples were ¾ inch long.

A WORD TO THE WISE

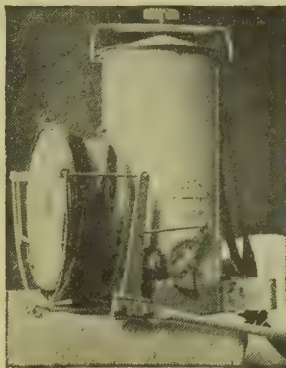
GRAPEGROWER, GARDENER and ORCHARDIST

If insects, rust, mildew, and blight eat up your crop profits, you need

THE AMERICAN BEAUTY DUST SPRAYER

"A puff in time saves the vine."

Awarded the BLUE RIBBON and DIPLOMA at the 10th Annual District Fair, Fresno, Cal., 1916.



The latest and best machine for the use of sulphur, Paris green, lead-arsenate, hellebore, tobacco-dust, lime, lime and sulphur mixture, or any other dust spray.

It is sure death to grape-mildew, or red-spider and mite on vines and trees—grape, prune, almond, etc.

It is a boon to vegetable growers—kills bean and asparagus rust and mildew, also worms, beetles, red spider, etc., on truck crops.

It is invaluable to cotton, tobacco, and cranberry growers, and for nursery and greenhouse stock.

IT'S FAST—IT'S THOROUGH

Has steady feed, continuous action, extra fine screen. Will cover almost double the acreage of any other machine in same time, and with same amount of material, because dust it throws is more finely divided. Positively will

not choke or clog. It is light and strong, easy to carry and easy to work.

Don't lose valuable time tinkering with a poor machine. A few hours lost at a critical time may cost you your crop.

For sale by all progressive dealers. If your dealer does not carry it, send us \$11.00 for the vineyard size, or \$13.50 for the orchard size machine, and we will send you an AMERICAN BEAUTY DUST SPRAYER, all charges paid. Try it a week. If it is not entirely satisfactory, return it at our expense, and we will cheerfully refund your money.

WE FULLY GUARANTEE EVERY MACHINE

The California Sprayer Co.

6029 PASADENA AVE., LOS ANGELES, CAL. REEDLEY, FRESNO CO. SEATTLE, WASH.

Hart & Barber Avocado Co.

Growers of the highest grade budded trees in commercial quantities. Thirty varieties. All field-grown stock. Our years of experience will be of great value to those considering a spring planting. Come to our nurseries and see the wonderful growth of our trees.

NORTH WHITTIER HEIGHTS, on BOULEVARD bet. PUENTE and WHITTIER.

T. U. BARBER, MANAGER.

LOS ANGELES OFFICE, 518 VAN NUYS BLDG.

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"THE BOSS" TREE PROTECTOR



Made of Yucca Palm.

Is cheap, durable and quickly put on the tree. It prevents rabbits from destroying your trees. A sure protection against frosts, sunburn, grasshoppers, or dry winds. Can be easily removed, will last for years. Send for samples.

Prices

	Per 1000
10 in. long, 7 in. wide	\$10.00
12 in. long, 7 in. wide	11.00
14 in. long, 7 in. wide	12.00
16 in. long, 7 in. wide	13.50
18 in. long, 7 in. wide	15.00
24 in. long, 7 in. wide	18.00
30 in. long, 7 in. wide	21.00

YUCCA MANUFACTURING CO., 1880 Willow St., Los Angeles, Cal.

RHUBARB

PLANT WAGNER'S IMPROVED NOW

Yields \$1,000 per acre annually. Splendid results in six months. Special price for immediate planting (also Cactus, Berries, Small Fruit, etc.). Write

J.B. WAGNER
Rhubarb-Berry & Cactus Specialist
PASADENA, CALIFORNIA

Tree Protectors

That Really Protect



Quickly and easily put on. Will stay.

Fitted with galvanized wire ties.

If you want better protectors for less money write us for sample and prices.

Angelo & Son

Bay and Mason Sts., SAN FRANCISCO.

FIGS MAMME and PROFICHI
FOR SALE.
THOS. H. LYNCH
Box 302, R. R. B., FRESNO, CAL.

PLANT CITRUS TREES NOW

but be sure of the trees you plant. Buy citrus trees with ancestors. It is not enough that trees have vigor, be true-to-name and have a vigorous root system. These they must have—but they must be true to a type, budded from a heavy bearing strain and must have produced in a way that insures growth when transplanted, and in the end produce fruit that will bring profit to you. There is 20 years' experience in knowing how to produce citrus trees back of every tree we sell.

50,000 Valencia, Navel Oranges

Eureka Lemon Trees

First National Bank Bldg.

WALKER & HUBBARD NURSERY CO.

San Fernando, Cal.

BEES IN ORCHARD SET PRUNES.

[Written for Pacific Rural Press.]

Bees surely helped Frank Abernathy of Santa Clara County to get a heavy crop of French prunes last year; and he keeps eight or nine swarms at the house in his orchard all the time. It was last spring, under direction of A. H. Hendrickson of the University of California, that he put a tight mosquito net over two trees, one a French, the other an Imperial, just before blooming. These kept all bees and insects as large as flies away from the blossoms. Over two similar trees he put a net and inserted a swarm of bees. The nets were on several days until bloom was nearly over, when a wind blew them up one afternoon and it frosted that night.

The French tree, with the bees, bore a very heavy crop; but the Imperial did not have much, though an Imperial outside nearby had a heavy crop. The trees from which insects were excluded had practically no crop.

Possible explanations for the poor crop of the Imperial with the bees inside, are that perhaps the pollen of this variety is not good on the same tree, or that perhaps a freakish frost caught this without injuring the Imperial nearby, or perhaps water conditions were different at the time of setting. It would be interesting to have experiences of other orchardists who have observed definite results on any fruits.

BLASTING FOR RE-PLANTING.

To the Editor: My experience in tree-planting may be of interest to others wishing to replant old orchards. For six or seven years I had tried to get trees to grow where the original trees had died. In every instance the newly planted trees died, though carefully watered and tended.

So, in January, 1916, before planting, I had first blasted the ground with half a stick of 25 per cent dynamite, put down 3 feet at the spot where the tree was to be set out.

I put down the tree a little lower than it had been when dug in nursery, first being careful to fill the pot hole caused by blast, and using top soil around tree roots.

Now, though last year was pretty dry I used no water, either at time of planting, or after I set out 50 almonds trees, and not one died, and, except where they were in a few instances surrounded by old trees, all have thrived in sandy soil. Of course, before planting, all stumps and roots must be taken out, and it is folly to replant in places where only a single tree is missing. In such cases the young tree is simply starved out. The trees must be well-cultivated all summer.

Oakley.

E. W. Robbins.

BLACK KNOTS ON FIG ROOTS.

To the Editor: I have some two-year fig trees which do not grow well. I find small black knots on the roots.—M. A., Clovis.

The knots are caused by almost microscopic worms called nematodes. More rarely they are due to the crown gall bacteria. Nematode treatment is unsatisfactory, but the best

thing we have heard of is to build a levee that will include all the roots of the trees and a little more, put in a little fertilizer, and keep the basin full of water for six days. This drowns the worms that are not already in the roots and permits the tree to make a new tree growth without its being attacked. Shallow-rooted varieties like the Adriatic are particularly susceptible, so encouragement to deep rooting seems advisable. Deep subsoiling, even at the expense of some roots, and plenty of moisture deep in the ground without waterlogging it, will help. Keep the tree in the most vigorous condition possible so it may outdistance its enemies.

CALLUSING FIG CUTTINGS.

To the Editor: Last year I put in several thousand fig cuttings and didn't get good results. The other day I noticed an item stating that they should be cut, tied in bundles, set upside down in a trench, and covered with fine soil a few weeks to callus. Please advise how to tell when they are ready to come out, whether the trench should be under-drained, how much soil to put on cuttings, whether to keep wet or just moist, and whether sand is preferable to well-pulverized earth.—S. B. G., Princeton.

There are those who prefer covering cuttings upside down in bundles until they are callused; but G. P. Rixford, than whom few people know more about the fig industry, says it is not necessary. If you wish to do it, use sand or pulverized earth, whichever is most convenient, keep it moist but not wet, provide under drainage to be sure they do not get too wet, cover an inch deep, and take out when well callused, or when rooted. They are put upside down to prevent bud growth before callusing.

BARTLETT PEARS PROMISING

[Written for Pacific Rural Press.]

About six hundred acres of Bartlett's are to be found in the Tehachapi and adjoining valleys, of which two hundred and seventy-five are in bearing, according to former Horticultural Inspector D. W. Pitts.

One grower, B. M. Dennison, has forty acres which bore some last year; however, the crop was very light on account of frost coming when blooms were half open, which is very seldom the case. Mr. Dennison shipped one car of five hundred boxes weighing fifty pounds each, and received \$3.00 per box f. o. b. Boston.

Very little blight was found two years ago, but absolutely none could be found last year. The elevation is something like four thousand feet and picking does not start until September 5, which is the latest of any place in the State according to Mr. Killingsworth of the Pioneer Fruit Company.

FRUIT SUGGESTIONS.

Is root pruning of orchard trees about the time of top-pruning good or bad for them? What have our subscribers observed?

Apple spraying for codling moth is due now. Don't fail to use a little spray and save your crop. Add atomic sulphur if there is danger of scab.

Grape cuttings for rooting should



4 Cyls. 4 Speeds. Does work of 4 horses.
A 1916 buyer says: "I like it better every day."

Avery 5-10 h.p. Tractor \$500 Coast
Terminals
G. EDGAR BUSCH, Santa Rosa, Calif.

SURPLUS STOCK

Sour Orange Seedlings

WRITE OR WIRE FOR PRICES

FANCHER CREEK NURSERIES

FRESNO, CALIFORNIA.

be cut off at the node, according to H. L. Wood of Stanislaus county; but for grafting, they should be cut between nodes.

Pear blight will be showing up on the blossom twigs pretty soon. Don't let it run down to the bigger branches. Remember that imperfect disinfection of tools and wounds will spread blight even while you are cutting it out.

Tulare county prune and apricot growers held an enthusiastic meeting last Saturday at which a number of members of the Association, additional to the already high percentage, signed up.

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24, 1912.
Of Pacific Rural Press, published weekly at San Francisco for April 1, 1917, in the State of California, County of San Francisco, ss.

Before me, a notary public in and for the State and county aforesaid, personally appeared Frank Honeywell, who, having been duly sworn according to law, deposes and says that he is the Publisher of the Pacific Rural Press, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 443, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are: Publisher, Frank Honeywell, San Francisco; Editor, E. J. Wickson, Berkeley; Managing Editor, E. J. Wickson, Berkeley; Business Managers, none.

2. That the owners are (Give names and addresses of individual owners, or, if a corporation, give its name and the names and addresses of stockholders owning or holding 1 per cent or more of the total amount of stock): Frank Honeywell, owner, San Francisco.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: (If there are none, so state.) None.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company, but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stock-

holders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

FRANK HONEYWELL,
(Signature of Publisher.)
Sworn to and subscribed before me this 29th day of March, 1917.

(Seal.) C. B. SESSIONS,
Notary Public, in and for the City and County of San Francisco, State of California.
(My commission expires May 26, 1917.)



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Orange Scaly Bark "Apparently Cured."

[Written for Pacific Rural Press by J. C. Perry, East Highlands.]

"Meticulous care" is the prime factor in the successful treatment of scaly bark gum disease of orange trees. This statement has reference to Bordeaux paste treatment under Prof. Fawcett's directions. Some growers seem to have the idea that the application of Bordeaux paste after a general scraping, or even without the scraping, has power to cure the disease. My experience with many trees, running back three years, indicates that success may be obtained by the surgical method provided enough care is exercised. The Bordeaux paste, being a fungicide, may prevent reinfection and, having considerable body and remaining for some time on the tree, may be the best possible protection to the inner bark where the outer bark has been removed. The application of Bordeaux paste alone does not effect a cure or even a sensible diminution of the disease. Assuming this to be a fungus disease (which has not been demonstrated) it would seem likely that any fungicide capable of penetrating the bark to kill the disease would be fatal to the bark. But success may be achieved through the surgical Bordeaux treatment, in cases not too far advanced, provided the factor of "meticulous care" is not wanting.

A number of trees were treated in the summer of 1914 with barely enough good results to encourage a repetition with greater care in 1915. Of the trees treated in 1915, one hundred and sixty received the mark "a/c" in the field book a year later, the meaning of the entry being "apparently cured." I do not refer to them as "cured" because, with the cause of the disease unknown, there is possibility of its reappearance. We do not know yet.

The tools used are lighter than those best adapted to gummosis of lemon trees, which latter have been described frequently. In "apparently curable" cases of gum disease of orange trees, it is necessary to remove little or none of the inner bark; but it is necessary to remove every bit of active disease. Where it does go to the wood it must be cut out. The first motion is a light scraping into the outermost green of the outer

bark with a light scraper made from a straight-edged bread knife, bought at a fifteen-cent store, handle riveted to blade, blade bent (to the left) into a U shape with abrupt corners, and sharpened by beveling to 45 degrees, beveled side outward. This scraping is more by way of exploration than for the removal of diseased bark and should go at least two inches beyond any sign or suspicion of the disease. Such scraping frequently reveals discolored, brownish spots at some distance from the manifest area of the disease. The discolored bark in these spots as well as in the central area of the disease must be removed. Different operators may prefer different tools. A three quarter inch carpenter's gouge, sharpened on the outside, held by the handle with one hand and guided by the other hand, which also rests on the bark, can be used with precision.

The work has been done for the most part in the summer season, not because this was the season preferred, but because it was the only time available. This has been a handicap in the case of bad trees that had to be severely topped, the best time for such work being before the spring growth. Where large limbs are badly affected it may be good practice to mark them for removal after the fruit is picked—and pick early.

For locating and recording diseased trees, tree numbers (preferably painted on the trunks with white lead) make a score for usefulness. Incidentally it may be said that a tree-numbering system is useful in various ways. The many thousands of trees of the East Highlands Orange Company are numbered and various items of information are recorded of the individual trees. When a gum-diseased tree is observed, either on a tour of inspection or by casual notice, its number is taken and copied into a special gum-disease record which shows the date of first observation and the condition of the tree at each treatment. If a limb is to be removed later, a memorandum to that effect in the field book is easier to find and the tree easier to locate than if the guide were a flag on the tree, especially if many separated trees must be remembered.

Mulched Basins for Lemon Trees.

[Written for Pacific Rural Press.]

Two years of mulched basining on 700 lemon trees of the Leffingwell ranch in Los Angeles county have greatly improved the fine heavy clay soil over the same kind of sub-soil. One year was not enough; for when the basins were worked up in the spring of 1916 with short heavy mattocks, the soil was very compact. Last February when it was inspected, the soil was quite loamy and loose. It had not been cultivated, except the one time.

Basins were made around the trees and as large as the spread of their branches. They were manured thoroughly, and a straw mulch put on top of that, but the manure and straw were kept away from the trunks, partly on account of rodents. Mounds of dirt were built up against the trees to keep water from the

trunks; but the mounds soaked up and stayed muddy so long that they were later leveled down. They are watching the trees close for gummosis, but none has been found, according to Lester Cole, who has most direct charge of the work. Irrigation was applied to the centers as well as to the basins for the sake of keeping the soil in condition.

A Manna gum eucalyptus tree owned by J. C. McCubbin of Fresno county is claimed to be the largest tree of its age in the world. It was planted in 1889 and measurements made by U. S. Dept. Agr. Sept. 12, 1916, showed it to be 17 feet 8 inches in circumference three feet above ground. On Sept. 10, 1915, it was 120 feet high and had a spread of bough 88 feet six inches.



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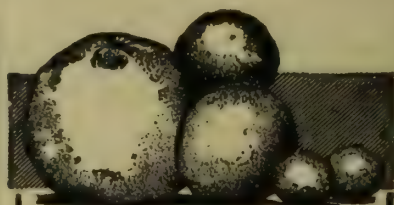
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Made Fruit Buds on Barren Peaches.

[Written for Pacific Rural Press by R. B. Cate, Clovis.]

My five-acre orchard of Elbertas, Muirs, and Lovells seven years old have always produced a rank growth, but have failed to set a normal crop of fruit buds; and those that formed were in top growth, which was taken off at the time of winter pruning. The trees are on a red variable soil with the hardpan coming close to the surface at places (1½ ft.)

By a radical change of pruning and caring for the orchard I have set an immense crop of fruit buds, which gives promise of the largest crop of fruit in the history of the orchard. In the winter of 1915-16 instead of pruning the usual severe way of leaving the main new growth four or five inches long in order to hold the tree down I pruned to a length of eighteen or twenty inches and thinned the inside of trees well to let in sunshine and air. The orchard was cared for in about the usual way in reference to plowing, cultivating, etc., until June 15. Then it was again pruned. This time the growth that was left eighteen to twenty inches in January (which by this time had sent out numbers of new shoots a foot to two feet long) was pruned back to six to ten inches. In a few cases the new growth which had grown from January to June was topped.

By cutting the limbs which had been left 18 to 20 inches in January, back to 6 or 8 inches in June, the tree was held back the same as severe winter pruning and had these added advantages: the excessive spring growth was removed, leaving sunlight and air into the center of the tree and the sap and strength which would have gone into the top was forced into the center or lower part of the trees where it is always needed.

After the pruning in June, the orchard was watered and cared for, developing what peaches there were on it.

After removing the crop, the or-

BLACK KNOT ON GRAPES.

To the Editor: What is the cause and cure of black knot on our grapevines?—D. L. S., Selma.

It is caused by the crown gall *Bacterium tumefaciens* and must be cut out to the outer edges of all infection on the trunk or arm of the vine. To help prevent reinfection varnish, whitewash or Bordeaux paste the cut surface. The bacteria work beyond where you can see any signs of them. The disease on grapes above ground is not generally serious.

KILLING EUCALYPTUS STUMPS.

To the Editor: What can I put on eucalyptus stumps to stop them from growing?—A. P., Ceres.

[Answered by Supt. John McLaren, Golden Gate Park.]

The best method is to strip the bark to one foot below ground level and cover the stump two feet deep with soil.

The United States Circuit Court of Appeals on Mar. 7 affirmed judgment for damages to Kellar-Thomason Co. for infringement on a patented means of attaching a valve or gate to the end of a pipe.

chard was thoroughly watered, which finished developing the crop of buds for this year and kept the tree growing until frost. I did not prune in the winter of 1916-17, but expect to prune about the middle to last of April or after peaches are set and danger of frost is past.

Though the orchard received no pruning in winter of 1916-17, to the casual observer it would in this March appear to be pruned, owing to lack of top growth. The trees are one mass of blossoms from the trunk to the top, which has not been true in the history of the orchard.

One Wound for Two Prunings.

Prunings 18 to 20 inches in 1915-16 and reducing this to 6 to 8 inches in June and not pruning in winter of 1916-17, the tree only received one severe wound in two years instead of two or more severe wounds.

This improvement was due entirely to Frank Henry's instructions and proper credit I am sure is due him.

Black Walnut Roots for River Bottoms.

[Written for Pacific Rural Press by Leonard Coates, Morgan Hill.]

The native black walnut stock is proving to be of great value under many varied conditions. It seems to be the only root that is resistant, if not immune, to infection from oak-root fungus, and should be used as a replant wherever any trees are affected by this disease. If old or mature trees are removed, it is often better to replant with strong two- or three-year-old black walnut seedlings, let them grow a few years, and then top-graft or bud to the desired variety.

If the orchard is young, or if the space to be replanted is large, there is no objection to planting grafted nursery trees. But another and perhaps even more important use for our native black walnut as a stock is to plant it along creek banks or in the islands or beds of loam found in many creek bottoms, or in soil largely composed of coarse gravel at the surface. In both cases it should be insisted that the roots be over two feet long, and it would

be much better if the length is three feet or more. The black walnut root grows very rapidly under such conditions, and readily follows down after moisture, which is soon apparent by the growth the trees will make. We are utilizing some creek bottom land of our own in this way.

Geo. Hyde of Cupertino planted walnut trees of the Concord variety on the native black walnut root seven years ago, picking as much as one hundred pounds of nuts per tree in some instances last year, and these trees were all planted in very gravelly land near the creek, but with roots 3 ft. long. The trees are of enormous size, and stand as an object lesson of what may be done over a wide area in similar conditions.

Planted along creek bottoms or banks where they would be subject to high water at times, the black walnut seedlings, set deeply, suffer no injury.



*Those things that
need your attention
on the farm:*

You, Mr. Farm Owner, who are about to make your first trip of the season to the farm, will find a score of things that need attention. Whether it is rented or "worked on shares," or whether you employ a superintendent, you, the owner, have certain things that you want done, will order done. And you want a record of how things look now:

Certain old fences.

The south porch.

The land that needs tiling.

The condition of the horses and cattle and hogs.

The foundation to the corn crib.

The broken hoops on the silo.

The condition of the orchard.

And one obvious thing to do is to make an auto-photo-graphic record. Make pictures of the things that don't please you, as well as pictures of the things that do please you. And alongside of each picture make a brief memo,—at least a date and title, an authentic, indisputable record written on the film at the time. It's a simple and almost instantaneous process with an

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SAN FRANCISCO.

San Francisco, Apr. 4, 1917.

WHEAT.

offerings of wheat in the local market are practically limited to the California Club and Northern Red varieties and such few large lots as remain are being firmly held. The would-be buyer has not named a figure, but is forced to make offers. It is this practice that has made the quotations named below. California buyers are reported to be very active in the Pacific Northwest, although no large deals have been reported as yet.

Stocks of barley are so low that further quoting of the shipping grade is unwarranted. Every day last week saw advances made and similar occurrences are to be expected this week. On Wednesday choice feed stock was being held at \$2.60 on bids 10 cents off, with every indication that the asked price would have to be met.

BARLEY.

The demand for oats was very good last week and local holdings of Red Texas stock have been reduced too small to warrant further quoting. Shippers are still trying to secure stock, but the international situation has firming the market too much.

OATS.

Continued high prices on corn throughout the East have been reflected by good-sized advances in this market, with an especially noticeable upward movement on Milo. The country demand continues.

CORN.

First-hand prices on strictly first-class grain, San Francisco.

Eastern Yellow, cbl., bulk.....\$2.45@2.50
California, sacked.....2.50@2.60
Milo Maize.....2.60@2.65
Egyptian.....2.60@2.65

BEANS.

The past week saw several lines of beans advanced, with most of the gains coming on Wednesday after the President's speech to Congress had been given out. On Monday and Tuesday of this week, there was practically nothing offered in this market. Large and small whites and re-cleaned southern Limas are sharply higher, and actual hostilities will mean an even greater gain on these varieties. Freight conditions are, if anything, worse than last week. Pinks and Bayos are also registered small gains. Teparies are again in demand, seeming scarce.

Bayos, per cbl.....\$ 8.25@ 8.50
Blackeyes.....7.00@ 7.20
Cranberry beans.....9.75@10.00
Horse beans.....5.50@ 6.00
Small Whites (south).....12.00@12.50
Large Whites.....12.00@12.50
Pinks.....9.20@ 9.30
Limas (south, re-cleaned).....13.00@13.50
Red Kidney.....11.75@12.00
Mexican Reds.....8.00@ 8.25
Tepary beans.....8.50@ 8.75
Garbanzos.....4.25@ 4.50

HAY.

Receipts for the past week were 2063 tons, as compared with 1883 tons the preceding week and 1480 tons the week before that. However, the feed situation is becoming so critical in the Pacific Coast and western states that prices continue upward and San Francisco dealers are daily forced to turn down possible business. Reports from Oregon, Idaho and Montana say that many of the roads there are impassable and hay has jumped to \$28 per ton, with large numbers of cattle dying. Utah is paying \$25 per ton for stock hay and Arizona reports that she has barely enough stock on hand for her immediate needs. In Washington hay prices have been pyramided in three weeks from \$12 per ton to \$25.50 per ton with instant buyers. There has been an almost daily advance in the San Francisco market and hardly a day passes that some up-state section does not either wire or send a delegation here to see if hay can be secured to save their cattle. Local prices are now at the highest level known since the winter of 1914. When transportation facilities are considered, it will be seen that present prices are really far higher than in 1914. Green feed is still very unsatisfactory, and this seems the only thing that can avert still higher prices here.

(Price per ton, car lots, San Francisco.)
Wheat, No. 1.....\$27.50@28.00
No. 2.....25.50@26.00
Tender oats.....25.00@26.50
Wild oats.....22.50@24.00
Barley.....24.50@27.00
Alfalfa.....22.00@25.00
Stock hay.....16.00@18.00
Straw, per bale.....1.00@ 1.15

FEEDSTUFFS.

Except middlings and tankage, every item in feedstuffs advanced here last week, and there is every indication that this movement will continue this week.

(Per ton, San Francisco.)
Beet Pulp, per ton.....\$30.00@34.00
Alfalfa meal, per ton.....25.00@27.50
Bran, per ton.....35.00@38.00
Oil Cake.....50.00@52.50
Cocoanut cake or meal.....33.00@34.00
Cracked corn.....50.00@54.00
Middlings.....47.50@50.00
Rolled Barley.....47.00@48.00
Tankage.....47.00@48.00
Rolled oats.....46.00@48.00
Rice middlings.....37.00@38.00

POTATOES, ONIONS, ETC.

Asparagus receipts increased, but the canners have entered the market and prices ruled rather steady at 60¢ per pound for the last two days. Poor quality brought easier prices on delta celery, while lettuce advanced on short receipts, due to bad southern weather. Peas eased under noticeably increased of-

THE MARKET REPORTS

Figures Given Are Independent and Reliable.
Prices Quoted as Paid to Producers.

ferings. The potato market proved generally featureless, although some off-grade deltas were offered on the street at \$2.50 per cwt. A shipping call and a better retail demand figured in putting onion quotations up.

Asparagus, per lb.....50¢@55¢
Peas, per lb.....40¢@45¢
Hubbard squash, per lb.....25¢@30¢
Lettuce, crate.....\$1.25@1.50
Celery, Delta, crate.....1.50@2.50
do, Southern, crate.....None offered
Tomatoes, crate.....Not enough to quote
Rhubarb, box.....\$0.90@1.30
Potatoes, cbl., Delta.....2.50@3.50
Sallins.....Cleaned up
Oregon.....\$5.50@5.75
Sweets, per lb.....\$9.00@10.00
Onions.....3.00@3.50
Garlic, lb.....1¢@3¢

POULTRY.

With but one car of Eastern stock to compete, it proved very easy to maintain prices on California poultry. As the result of the light receipts of poultry, both geese and Belgian hare advanced. Squabs came in too large quantities for the trade to handle and sold at easier rates. Light broilers have started to come and the price is easier; while there was a sharp advance on broilers 1½ to 2 pounds.

Turkeys, live, lb.....22¢@24¢
do, dressed, large, lb.....Nominal
Broilers, 18 lbs. to doz. and less.....35¢@37¢
do, over 18 lbs. to doz.....37¢@40¢
Fryers.....32¢@35¢
Hens, extra, per lb., colored.....25¢@26¢
Small leghorn.....24¢
Smooth Young Roosters, per lb. (3 lbs. and over).....29¢@30¢
Old Roosters, per lb.....15¢@17¢
Geese, per lb.....20¢@22¢
Squabs, per lb.....35¢@40¢
Ducks.....24¢
Old.....21¢@22¢
Belgian Hares (live).....14¢@15¢

BUTTER.

Prices on butter in every important dairying center in the United States advanced last week. In San Francisco the close was several cents above the opening figures. The shipping call continues as the dominant factor in this market, al-

though somewhat lighter offerings have helped maintain prices. March receipts were 2,378,400 pounds, as compared with 2,468,600 for the same month last year. The average price on the extras grade last month was 35.12 cents per pound. There is every indication that a firm market can be expected here.

Extras.....Thu. Fri. Sat. Mon. Tu. Wed.
Prime firsts.....37½ 37½ 38 40 38½ 39½
37½ 37½ 38 40 38½ 39½

EGGS.

Entries into storage and a good sized shipping trade have more than cared for increased receipts of eggs and local quotations closed steady at advances one to 1½ cents per dozen over the opening figure. Seattle and New York buyers have been very active here, and Southern California has been drawing its usual quota from this market. March arrivals were 2,318,830 dozen eggs and average prices during that month were 26.18 cents per dozen on extras and 24.75 cents per dozen on extra pullets. Entries into San Francisco ice houses last week were more than 15,000 cases.

Extras.....Thu. Fri. Sat. Mon. Tu. Wed.
Extra 1sts.....28 29 29 29 29 29
Extra 1sts.....26½ 26½ 27½ 27½ 27½ 28
Extra pullets.....26 26 26 26 26 27
Ex. 1sts pul.....25½ 25½ 26 26 26 26½

CHEESE.

There has been considerable fluctuation in the quotations on California Flats cheese this past week, as the market was flooded with extra heavy receipts on two different days. March arrivals were 904,800 pounds of cheese with average prices during that time of 22.51 cents per pound on Flats fancy and 23.16 cents on Young Americas fancy. Jack cheese is in good shipping demand and advanced last week.

Y. A.'s.....24¢
Fancy Calif. Flats, per lb.....20½¢
Monteirey Cheese.....17¢@21¢

DECIDUOUS FRUITS.

There were no changes in the quotations on apples last week. Some shipping business was reported and ice house holdings are getting very low.

Apples:
Bellflower, box.....Not enough to quote

Special Livestock Market Report.

San Francisco, Apr. 4, 1917.

CATTLE: The prices quoted are for fed cattle; but grass cattle are beginning to come this week. Due to hard pasturage, these are likely not to be in very good condition and the price may have to be lowered. Grass cattle in general are likely to be in better condition in April and May than later. Not many fed cattle are offered and all are still held high. Feed in Southern California is in bad shape and considerable alfalfa acreage has been plowed up.

HOG: Offerings are slowing up a little and prices are unchanged at the highest mark in recent history. These prices can scarcely be maintained, but the breeder who has hogs to sell through the next year should make big money, notwithstanding the high prices of feed.

SHEEP: continue scarce, but spring lambs are already coming freely from the Huron-Columbia country. Due to scarce feed, these are not in good shape and the price of lambs is marked down a half cent.

WOOL: prices unchanged. San Joaquin Valley, except one large lot now being shorn, was practically cleaned up three weeks ago, with a lot of 800 fleeces from Bakersfield. Boston wool trade is dead, pending the possible Government comminatory of all supplies. There is likely to be something doing before next week.

HIDES: Nothing doing.

Steers, No. 1.....9½¢@9½¢
No. 2.....9¢@9¢
Cows and Heifers.....7½¢@8¢
No. 2.....7¢@7¢
Bulls and Stags.....6¢@7¢
Calves, light.....9¢@9½¢
Medium.....8½¢@9¢
Heavy.....7¢@8¢
(Prices f. o. b. South San Francisco and shipper stands half the condemnations for tuberculosis. Rough docked 20 pounds, piggy sows, 40 pounds, stags 50 pounds.)
100 to 150 lbs.....12¢
150 to 300 lbs.....13½¢@14¢
300 to 375 lbs.....13½¢@13½¢
Prime Wethers.....11½¢@12¢
Ewes.....10¢@10½¢
Lambs.....13¢@13½¢
Sacramento Valley, spring clip.....40¢@42¢
Mendocino.....40¢@42¢
Overdale.....40¢@42¢
San Joaquin, 8 mos.....26¢
San Joaquin, year's.....26¢@28¢
Southern, spring clip.....22¢@23¢
Imperial Valley, 7 mos.....30¢@35¢
Nevada, year's.....35¢@40¢

HIDES are still stationary per quotations of past few weeks.

Los Angeles, Apr. 3, 1917.

CATTLE: Market more quiet the past week. While prices are unchanged, feeders were more disposed to sell. The eastern markets being hardly so firm and the demand for beef falling off, killers were less anxious for supplies, but for all good to choice smooth steers they paid old prices. Fat cows and heifers were also steady but less active.

Per cwt. f. o. b. Los Angeles:
Beef steers, 1000 to 1100 lbs.....\$9.50@10.00
Prime cows and heifers.....7.50@ 8.00
Good cows and heifers.....7.00@ 7.50

HOGS: With market continuing high east and higher all around us than here, there were fewer hogs in the past week and fewer wanted. With many tourists having returned home, and a falling off in the demand for fresh pork, killers were less anxious for supplies and refused to bid prices up, though they paid last week's quotations for what they wanted. California furnished most of the supply and what was coming in was mostly light weights. But few heavy hogs arriving.

Per cwt. f. o. b. Los Angeles:
Heavy, averaging 250@300 lbs.....\$11.50@12.00
Mixed, 200@250 lbs.....12.00@13.00
Light, 175@200 lbs.....12.00@13.00
Though docked 20 pounds piggy sows 40 pounds and stags 40 per cent.

SHEEP: More coming in. Now that the fleece has been taken off, flockmasters are more disposed to let go their fat sheep. Offerings the past week, however, were only fair and prices steady and firm. Spring lambs coming in more freely and of better quality. They are selling fairly well at \$6.50@7.00 per head.

Per cwt. f. o. b. Los Angeles:
Prime wethers.....\$ 9.00@10.00
Prime ewes.....9.50@10.00
Yearlings.....10.50@11.00
Lambs.....13.00@14.00

CALVES: A good many coming in and the market the past week was slow and weak. Selling at \$8.50@9.50 per cwt.

No. Portland, Ore., Apr. 2, 1917.

CATTLE: Today's supply of cattle was larger than either of the last two weeks' opening days run, totaling over 1100 head. There was a fairly good supply of well-finished cattle in the run, while the bulk of the offerings were medium to good short-fed kinds. Prices as a rule were steady on the best grades. The beef trade was active with a good supply. Several loads of prime hay-fed cattle from Terbonne brought \$9.00 and \$9.65. There was a good spread of steers from \$9.00 up that sold at steady prices. Steers bringing from \$8.25 to \$8.75 sold at strong prices. Demand for these grades was excellent, buyers wanting this class of cattle to take the place of cows, which are very scarce. Thin light steers sold from \$6.50 to \$5.00. There was a light supply of cows; prices were all on a steady to strong basis, several good loads sold from \$7.50 to \$8.00, with a few going at \$8.25; medium grades going at \$7.00 to \$7.25 with ordinary stuff \$6.50 to \$7.00. Thin dairy cows sold from \$3.00 to \$6.50. Another record was established with the sale of one prime bull at \$8.25. Most of the good heavy bulls sold from \$6.75 to \$7.25; with thin ones from \$6.00 to \$6.50. Light dairy bulls brought \$5.00 to \$5.50.

HOGS: Some 1400 head of swine were on the market today. The market was slow in the morning. Two loads of prime heavy hogs brought \$14.50 and \$14.55; while the bulk of the sales were made at \$14.35 to \$14.40. Prices were generally 5¢ higher; pigs sold from \$12.75 to \$13.25 with a very light supply. Quality of the run was excellent and demand good.

SHEEP: Sheep receipts were rather light. Sheep and lamb prices continue to advance, although killers are having a slow outlet; shorn lambs are being quoted at \$11.25; market steady.

Newtown.....\$1.20@1.30

CITRUS FRUITS.

Slow trading left the quotations on citrus lines unchanged.

Oranges:
Navels, fancy, per box.....\$2.50@2.90
do, Choice.....1.85@2.25
Tangerines.....1.50@2.00
Lemons:
Fancy, per box.....2.50@3.50
Choice.....2.50@2.75
Lemonettes.....1.50@2.00
Grapefruit, fancy.....2.25@3.00

DRIED FRUITS.

The dried fruit interests marked time this past week, with the possible turn to the president's speech as the main subject of conversation.

(Net to growers, bulk basis, f. o. b. shipping point.)

Apples, new crop.....5½¢@ 6¢
Apricots, per lb.....13¢@14½¢
Figs, black, 1916.....5¢@ 6½¢
do, 1917.....5½¢@ 6½¢
do, white, 1917.....5¢@ 6½¢
Calamansi, 1917.....9¢@10¢
Prunes, 4-size basis, 1917.....5¢@ 6¢
Prunes, 1916.....5½¢@ 7½¢
Pears.....5¢@ 7½¢
Peaches, 1917.....6¢

BERRIES.

Strawberries have been a feature of the market this past week, with good lines commanding as high as \$3.75 per crate and off-grade goods selling at \$1.50@2.25.

Strawberries, per crate:
Choice.....\$3.00@3.50
Off-grades.....2.00@2.50

HOPS.

Sacramento.....9¢@9¢
Sonoma.....7½¢@8¢
Mendocino.....8¢@8¢

OILS.

Pearl Oil, per gal.....8¢
do, cases two 5s.....17¢
Headlight, bulk.....10¢
do, cases two 5s.....18¢
Ecene, bulk.....11¢
do, cases two 5s.....19¢
Gasoline, bulk.....20¢
do, cases two 5s.....25¢

LOS ANGELES.

Los Angeles, April 3, 1917.

BUTTER.

Receipts of week ending April 3.....332,500
Receipts of past week.....304,650

The market the past week assumed a decidedly stronger tone. Production increasing and more coming in. Yet under the influence of higher and active markets both north and east, extras here were advanced 2¢ up to Friday. The consumptive demand was hardly so strong, but there was a very good shipping movement. Tuesday brought no change either here or east. San Francisco was off 1½¢, but this had no influence upon the market here. On call 5¢ was bid for extra, but no sellers. Receipts very light and receivers not disposed to let go at any price, holding their arrivals for their own trade.

We quote extra California creamery.....37¢
Prime first.....36¢
First.....35¢

Daily quotations past week:

1917.....Wed. Thu. Fri. Sat. Mon. Tu.
Extra.....35 35 37 37 37 37
1916.....28 29 29 29 29 29

EGGS.

Receipts (railroads) for week ending March 27, 1917, 3,235 cases.

Receipts (railroads) for week ending March 7, 1916, 4,923 cases.

Market firm and fairly active the past week. Receipts much the same as a week ago, though lighter than the same time last year. Consumptive demand very good and prices held up very well, as eggs are cheaper than meat. Less buying by the cold storage people at the present high prices. San Francisco is 1½¢ higher than a week ago, Chicago ½¢ higher, and New York ½¢ higher. Here the market advanced ½¢ on extras and case count up to Monday and 1¢ on pullets. The market is 7¢ higher than this time last year. Tuesday the market on call was firm and there was a fair demand at Monday's prices. San Francisco was unchanged; Chicago and New York firm at the prices of the day before. The result was dealers on call were inclined to go slow.

Daily quotations the past week:

1917.....Wed. Th. Fri. Sat. Mon. Tu.
Extra.....28½ 29½ 29½ 29½ 29½ 29½
Case count.....27½ 28 28 28 28 28
Pullets.....26 27 27 27 27 27
1916.....26 27 27 27 27 27

Case count.....21 21 21 21 21 21

POULTRY.

Market more quiet and weaker for most poultry. Many tourists have gone home and the consumptive demand shows quite a falling off. Receipts were altogether local and mostly made up of young broilers and light hens, both of which were slow and lower. Heavy hens were scarce, in good demand, and higher. Roasters, turkeys, and ducks continue to come in slowly and sell fairly at steady prices.

We quote from growers:

Broilers, 1½ to 2 lbs.....30¢@31¢
Fryers, 2½ to 3 lbs.....28¢
Hens over 4 lbs.....23¢@24¢
Hens, under 4 lbs.....20¢@21¢
Ducks.....22¢@23¢
Geese.....18¢@19¢
Roosters, 3 lbs. up (soft bones).....26¢
Turkeys, heavy, 12 lbs. and up.....29¢@30¢
Turkeys, light.....24¢@25¢
Squabs, live, per doz.....\$1.00@3.00
Dressed.....3.75@4.85

ASPARAGUS.

With more coming in the past week the market was again lower. Local, Imperial Valley and Grand Island were all on sale. The Imperial Valley is bringing now 10¢@12¢ per pound, Grand Island 12¢@15¢ per pound, and local 8¢@12¢ per pound. While there was a fair demand, values are too high for much activity.

BEANS.

A firm but rather quiet market continues for seed purposes at old prices, but the trade bought sparingly at present high-

HAY CLEANED UP AND LESS BEING PLANTED.

Hay for sale in the country almost everywhere. Surrounding States are about as short. Even Utah is wanting to buy in San Francisco. Wheat hay is selling wholesale at \$60, the highest since 1864. Livermore Valley growers have sold at \$25 and in some cases even more. Pasture shortage has led to movement of hay from the city to the country. Yet there is still estimated to be more live stock in California than last year, having been held for higher prices in spite of pasture shortage. Alfalfa acreage has been plowed up and less is being sown than last year. Hay land is being planted to products equally high priced and of greater acre value.

prices. Whites and limas are steady, while pinks and teparies are higher again. We quote from growers:

Limas	.....\$13.00@13.50
Large white	.....12.00@12.50
Small white	.....12.00@12.50
Pinks	.....9.50@10.00
Blackeyes	.....7.50@8.00
Tepary	.....9.00@10.00

CABBAGE.

Not much choice arriving the past week. What came with good demand from shippers who paid \$4.00@4.25 per cwt. for such lots as would stand shipping. Poorer lots and less firm heads sold at \$3.50@3.75 per cwt. Cauliflower out of season. No more coming.

BERRIES.

While there were steady daily receipts the past week of strawberries, the arrivals were not large and prices were too high for an active movement. Still there was a

fair demand. Prices are, however, a little lower, especially on low to choice lots. Fancy sold much the same as last week. Strawberries.....\$3.00@3.50 Poor to choice, per case of 30 baskets.....4.00@4.75 Fancy, per case of 30 baskets.....4.00@4.75

HAY.

The market the past week was much the same as the week before. Not much coming in. A very good demand was had for horse hay, both from the home trade and the out-of-town buyers, and last week's advance was maintained. Dairy people continue to use mostly green alfalfa. Receipts, 48 cars.

We quote f. o. b. Los Angeles:

Barley hay, ton	.....\$21.00@23.00
Oat hay, ton	.....22.00@24.00
Alfalfa, northern, ton	.....20.00@22.00
Alfalfa, local, ton	.....22.00@23.00
Straw, ton	.....11.00@12.00

Special Citrus Market Report.

Los Angeles, April 3, 1917.

Shipments of citrus fruits from Southern California from November 1 to April 1: Oranges 13,631 cars, and lemons 2,754 cars. Same time last year: Oranges 13,038 cars, and lemons 2,317 cars.

Shipments from Central California from November 1 to March 30: Oranges 4,052 cars, and lemons 104 cars. Same time last year: Oranges 4,210 cars, and lemons 146 cars.

With more settled and milder weather the markets the past week showed more life and the best oranges brought more money both east and west. The poorer lots, however, showed no improvement, though met fair sale. Shipments were the heaviest of the season, yet the eastern markets held up very well under the increased supply. Lemons, however, were slow sale and weak and at times lower. Locally, good highly colored oranges met very good demand the past week. Not so many culls on sale; and the improved markets east encouraged local packers, who paid 1 1/2@1 3/4 c per pound for oranges in the grove picked. Grapefruit while steady showed less life the past week. Prices, however, were maintained unchanged, packers still paying 2@2 1/4 c per

pound in the grove picked. Tangerines very quiet the past week. But few in and they were not very good. Packers paying 1@1 1/4 c per pound in the grove picked. Lemons continue as dull as ever. Only the best show any life and they are not active. Packers paying 1@1 1/4 c per pound in the grove picked. Low grades hard to move and no special price can be named for them.

AUCTION SALES.

New York, April 2.—Fifty-five cars navel, six cars mixed and five cars lemons sold. Market steady. Lemons lower. Weather cloudy. California Navels averaged \$1.80@3.50. Lemons averaged \$2.50@3.50.

Boston, April 2.—Thirty-four cars sold. Market higher in spots on oranges; unchanged on lemons. California Navels averaged \$1.85@3.40. Lemons averaged \$3.50@3.80.

Philadelphia, April 2.—Twenty-five cars sold. Market 10@20c lower on oranges; unchanged on lemons. California Navels averaged \$2.05@2.90. Lemons averaged \$2.75@3.60.

WEEKLY BUTTER AVERAGES.

Cents per pound for Extras.		Cents per dozen for Extras.	
Week Ending	San Francisco	Los Angeles	San Francisco
Jan. 9	26.65	34.91	31.41
" 16	27.83	35.83	33.33
" 23	28.85	36.91	34.83
" 30	36.33	38.48	36.33
Feb. 6	30.25	40.00	35.66
" 13	31.40	39.70	36.33
" 20	32.00	36.00	36.33
" 27	30.90	37.00	36.33
March 6	24.08	35.50	36.33
" 13	29.91	33.50	36.33
" 20	28.33	33.25	36.33
" 27	28.50	36.00	36.33
Apr. 3	28.50	37.91	36.33
" 10	29.31	28.00	36.33
" 17	27.33	27.50	36.33
" 24	25.25	25.00	36.33
May 1	24.33	25.33	36.33
" 8	24.10	25.00	36.33
" 15	24.58	25.66	36.33
" 22	25.00	25.00	36.33
" 29	26.50	26.50	36.33
June 5	25.50	27.00	36.33
" 12	25.83	27.00	36.33
" 19	24.50	25.91	36.33
" 26	24.50	25.91	36.33
July 3	24.60	26.00	36.33
" 10	26.40	26.60	36.33
" 17	25.83	26.00	36.33
" 24	26.00	26.00	36.33
" 31	26.00	25.91	36.33
August 7	26.16	26.00	36.33
" 14	26.50	26.00	36.33
" 21	26.50	27.95	36.33
" 28	27.25	28.50	36.33
Sept. 4	30.00	30.50	36.33
" 11	30.29	32.00	36.33
" 18	30.41	31.09	36.33
" 25	30.41	30.50	36.33
Oct. 2	31.66	32.16	36.33
" 9	32.91	32.83	36.33
" 16	33.50	33.50	36.33
" 23	32.75	33.00	36.33
" 30	32.59	33.00	36.33
Nov. 6	32.66	33.00	36.33
" 13	32.80	33.00	36.33
" 20	35.25	35.66	36.33
Dec. 4	35.60	36.80	36.33
" 11	34.83	35.16	36.33
" 18	33.75	34.50	36.33
" 26	34.10	35.00	36.33

WEEKLY EGG AVERAGES.

Cents per dozen for Extras.		Cents per dozen for Extras.	
Week Ending	San Francisco	Los Angeles	San Francisco
Jan. 9	31.41	37.91	32.00
" 16	33.33	41.83	30.75
" 23	34.83	32.50	34.33
" 30	36.33	32.08	36.66
Feb. 6	35.66	34.99	35.50
" 13	28.90	33.30	28.00
" 20	23.66	33.01	20.33
" 27	23.30	29.00	18.50
March 6	18.33	24.75	18.00
" 13	19.50	25.96	18.91
" 20	20.00	25.66	19.08
" 27	21.41	27.16	20.83
Apr. 3	21.75	28.58	21.00
" 10	22.00	21.00	21.00
" 17	21.16	20.91	21.00
" 24	21.83	22.58	21.00
May 1	21.00	22.58	21.00
" 8	21.20	21.41	21.00
" 15	24.58	20.83	21.00
" 22	25.46	22.50	21.00
" 29	25.33	22.50	21.00
June 5	25.00	24.51	21.00
" 12	25.00	24.16	21.00
" 19	24.83	23.75	21.00
" 26	24.66	24.58	21.00
July 3	24.60	24.00	21.00
" 10	26.30	24.00	21.00
" 17	27.16	27.00	21.00
" 24	28.20	28.00	21.00
" 31	28.50	28.00	21.00
August 7	21.00	29.16	21.00
" 14	33.08	31.00	21.00
" 21	33.09	31.83	21.00
" 28	33.50	32.00	21.00
Sept. 4	36.13	32.00	21.00
" 11	37.90	36.00	21.00
" 18	38.83	37.00	21.00
" 25	39.75	38.66	21.00
Oct. 2	39.75	40.50	21.00
" 9	42.25	43.16	21.00
" 16	48.50	49.32	21.00
" 23	47.01	46.50	21.00
" 30	47.09	43.33	21.00
Nov. 6	47.66	45.50	21.00
" 13	49.50	48.00	21.00
" 20	52.59	49.50	21.00
Dec. 4	45.10	45.40	21.00
" 11	40.25	39.50	21.00
" 18	39.66	38.33	21.00
" 26	40.00	37.60	21.00

REMARKABLY FEW HOGS CONDEMNED FOR TUBERCULOSIS.

California seems remarkably free from swine tuberculosis as shown by figures furnished by R. P. Steddom, Chief, Meat Inspection Division, U. S. Department of Agriculture. Of the 310,870 slaughtered under Federal supervision during the fiscal year 1916, only 2,213, or 0.71 per cent, were condemned for tuberculosis. It is fair to say that many affected hogs are not totally condemned, and that a great many hogs slaughtered in California are shipped in from surrounding States as far away as Idaho.

General Agricultural Review.

CITRUS AND SEMI-TROPICAL.

Lindsay Valencia, picking will commence about the last of April.

Riverside citrus shipments are well over 100 cars greater than to this date last year.

Redlands citrus shipments are about 400 cars more than to the same date last year.

The young lemon orchard of the Mills Orchard Co. near Maxwell Colusa county, was not frosted this season.

A fig growers' meeting is called for April 7 at 2 p. m. at Ceres to consider selling prices of 1917 figs and the best means of canning California figs.

Butte county orange growers have succeeded in reading into the orange standardization bill a provision that oranges may be shipped, however sour, if "substantially colored" on the tree.

The Australian market for California oranges can scarcely be developed under conditions proposed in a bill before Legislature to permit green fruit colored by sweating to be shipped to that continent.

The dreaded citrophilus mealy bug which has resisted all efforts at control in certain citrus districts is being preyed upon by ladybirds brought from the Philippines last fall under supervision of H. S. Smith of the State Insectary. It was feared that they might not survive the winter. An effort will be made to breed them at the new Alhambra branch of the State Insectary.

DECIDUOUS FRUITS AND NUTS.

Many fruit ranchers near Clovis are leasing their land to the oil company for wells.

San Benito peach growers are being urged to join the Association to stabilize prices of dried peaches.

A carload of dried apples was shipped to Liverpool from Aptos, Santa Cruz county, late in March.

A great many cling peaches of the Linden district of San Joaquin county have been contracted at \$42.50.

Vacaville growers have been offered 6 1/4 cents for prunes, 7 cents for peaches, and 12 1/2 cents for apricots, according to the Vacaville Reporter.

Tin cans for fruit, fish, vegetables, etc., are costing 25 per cent more than last year and the demand is estimated at a thousand million cans more than the supply available.

About 8,000 prune and almond trees have been interplanted among the 400 acres of young lemon trees being brought to bearing age by the Mills Orchard Co. near Maxwell.

The Anchorage Farm at Orland, belonging to Mark Requa, is making extensive fruit plantings, including 160 acres of almonds, 60 acres prunes, 80 acres olives interplanted with prunes, 40 acres of lemons, and one of avocados. Figs and ornamentals are also being planted.

GRAPES AND SMALL FRUITS.

The Kingsburg pool, controlling about 1000 tons of Malaga grapes grown by about 30 vineyardists, have sold their crop for \$25,000. It is to be packed in a house to be built at Kingsburg for the purpose.

A newly imported ladybug for the citrus districts has proved able to withstand our winters and will be introduced to the grape mealy bugs in the Fresno district. "The pleasure is mine," the "ladies" are hoped to prove.

The playing children of many European nations will be seen driven by warriors from their green fields to America, as represented by a 50-foot melting pot on the Fresno Fair grounds during the Raisin Day festivities April 20. The melting pot will later fall apart, revealing these

children as doctors, lawyers, merchants, and useful citizens.

The State Board of Viticultural Commissioners report that the 1916 California grape crop brought growers nearly \$28,000,000. Of this, raisins from an estimated 140,000 acres brought \$12,000,000 or \$85.71 per acre average. Table grapes from 50,000 acres brought \$8,180,000 or \$163.60 per acre. Wine grapes from 170,000 acres brought \$7,500,000 or an average of \$44.11 per acre. Last year was the best of many for wine grape growers.

CROP REPORTS.

Accurate, painstaking, prompt crop reports as a patriotic duty to enable the Government to estimate the food supply of the nation are being urged on the County Horticultural Commissioners by State Commissioner G. H. Hecke, who points out that everybody, including the U. S. Bureau of Crop Statistics, relies on these reports as the most authentic.

The State Commissioner's report indicates but slight damage from frost and rain for the State as a whole. A few districts have had 50 per cent loss, but in general there has only been a good thinning.

"Stanislaus and Santa Barbara counties show normal condition; Madera, admits slight damage to apricots; peaches and apricots are said to have been pinched a little in lower San Joaquin. Hemet Valley reports some damage to apricots; Kings county is so close that authorities do not agree. Fresno reports but slight damage to peaches, and all down the line the average would indicate that with continued favorable conditions the crop of fruit and nuts in the State for 1917 would be one of the largest in its history."

From other sources, we have the following notes: The apricot and almond crop prospects have been greatly damaged by frost in Napa county. Prunes, cherries, and apples are in fine shape and prospects are for a bumper crop in that county this year.

Apricots slightly damaged by frost in San Ramon Valley, Contra Costa county. On the hillsides and where protected in the canyon, almonds and apricots look like a big crop.

Crop conditions Redlands to Beaumont look good; barley and oats three times better than last year.

On Mar. 30, ice again visited Fresno and vicinity, but it was thought that the damage was slight.

Deciduous fruits around Lindsay were hurt in the cold snap preceding Mar. 24, but it is thought that not over five or ten per cent of the Valencia orange crop was damaged.

Early plums in cold spots of Placer county were hurt and peaches nipped a little; but real reduction of crop was very slight.

Almond prospects in Butte county are fine in spite of the frost which made many orchardists work nights a few weeks ago.

At this early part of the season, it is folly to sell fruit on present prospects, for there are a dozen probable causes of reduction in the crop later on.

COW DRY SOONER FROM EARLY SERVICE?

Answered by Dr. H. B. Wintringham.

To the Editor: How long after calving is it customary to have a cow served? If served 2 to 3 weeks after calving, has it a tendency to make her dry up sooner? Do beet pulp and apples have a tendency to make a cow go dry?—H. J. V., Napa.

Any time after one month, depending on when it is desirable to have the next calf come. It will not have any effect on the tendency to drying up. Can see no reason why the foods mentioned should dry up a cow if fed in the proper amounts.



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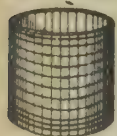


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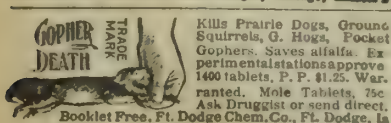
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Agricultural Notes.

The Placer County Fair is to be held in September.

Kings County Fair dates have been changed to September 8 to 15.

The Sperry Flour Mills of Stockton shipped 400 tons of flour to Honolulu, March 31.

Danville Contra Costa county people, farmers and otherwise, are planting potatoes this year.

The first carload of asparagus from Antioch was shipped March 27, and another followed next day.

The Oakdale rice crop of 30,000 sacks from about 1,000 acres has been sold at nearly \$2 per sack.

Over 7,000 sacks of Butte City rice were sold last Saturday, mostly at \$2 per cwt. Rice seed is selling at \$2.15-\$2.25.

The first new potatoes were received at San Francisco March 29 from Livermore Valley. They sold at 10 cents per pound.

A sweet-pea carnival is to be held at Eureka, Humboldt County, in August. Cash prizes will be given for floats and floral exhibits.

About 12 carloads of cauliflower had been shipped from Walnut Creek previous to March 31. Most of it was raised around Lafayette.

Corn may be imported from Japan and Manchuria under special permits requiring sterilization with live steam on arrival in American ports.

State Fair activities have started. It will open Sept. 8 and the Native Sons of the Golden West will hold a three-day celebration there at that time.

The Irvine Ranch of Orange county raised about 225,000 sacks of Lima beans in 1916. At \$5.50 per sack, this would total about 1 1/4 million dollars.

The Hoag-Kellog Co. of Ventura have contracted for a large acreage of beans, mostly teparies, in the Popular district of Tulare County, at 7 cents. They are furnishing the seed.

Burdensome expensive provisions of the hay-baling bill before Legislature have been amended, due to a mass-meeting at Concord, where a committee was appointed for the purpose.

Through the Los Angeles Municipal Markets, fruit, produce, and poultry are reaching consumers at 25 to 30 per cent less than through retail stores according to Supt. J. P. Britt.

American fruit marketing methods are to be studied by a member of the New South Wales cabinet. Even distribution of fruit is his object, and he may get it sooner than we do, unless our growers hang together.

The Napa High School Agricultural Club has rented 12 acres of land for a corn breeding station, according to the Napa Register. Improved seed corn adapted to the locality is the object.

A thousand pounds of Egyptian cotton seed have recently been shipped to Yolo county for trials, to be supervised by the Yolo County Board of Trade. W. W. Harris of Esparto will plant 20 acres.

Carl Vrooman, U. S. Ass't. Sec. Agr., says that in this country only 72 per cent of the wheat berry is made into flour, while foreign standards are 77 to 85 per cent. The belligerents are making bread from wheat flour mixed with rye, barley, corn, and potato flour.

The report of the State Water Commission has just been issued. It covers information as to the law, how to make applications for water, a review of irrigation conditions, a survey of the water supply of California, and most anything you might want to know.

The Sperry Flour Co.'s Corn Day program and exhibit at Stockton March 31 attracted large numbers of farmers. The morning was taken up with the corn-growing machinery exhibit. In the afternoon the program consisted of addresses and discussions by University men and successful corn-growers.

Sudan Grass

CALIFLORA BRAND

This is one of the best-known forage crops used in the Southern and Middle Western States. It grows from 5 to 10 feet high and will produce four crops of hay under irrigation and usually two crops without irrigation. It thrives in the valley and foothill sections of California. It yields more to the acre than any forage crop we know of, and the quality of the hay is excellent. The stock of this seed is short and we anticipate higher prices in the near future.

BUY NOW—lb. 50c; 10 lbs. \$4.00; 100 lbs. \$35.00.

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April-Sown Peruvian Alfalfa.

[Written for Pacific Rural Press.]

Peruvian alfalfa sowed in April by Frank Hasper of Imperial county proved a fine stand, though he says it would be better to sow there during the good weather in February on account of April winds. He has soft land.

Twenty acres of cotton stalks were disked down, first along the ridges with a little disk, then around the piece with a double disk and then across. The disks went to the axles before he finished. The ground was too wet to plow when he started the work. He broadcasted about ten pounds per acre April 2 and 3, 1915, after checking the land. On April 3 and 4 he irrigated the piece and then could not do anything until the end of April when the alfalfa was three or four inches high and "awfully dry." Irrigation in Imperial Valley while alfalfa is very small coats and covers it with so much mud that much of it doesn't survive. During its first four weeks, the alfalfa made roots six inches long, following moisture as the top dried out. It was irrigated then, being careful not to scald any of it by leaving water to stand on it too

long (over 12 hours of daylight). That is the cause of a thin stand on a few spots that are a trifle low in this field.

Last Season some hay was cut in March and 20 tons were cut at intervals through the summer when it got ahead of the cattle. Twenty-five Jerseys three to five years old were pastured on it from April 20 to September, with two horses. All but 10 head and the horses were sold then and the alfalfa was a foot tall when frozen about Nov. 7. All this stock had not been off the place during the times mentioned, nor had any other alfalfa been brought on. The frosted alfalfa was pastured and part made into hay, without injury to stock.

Winter Growth.—On December 1, the new growth was scarcely an inch high; but when seen Jan. 23 by a Pacific Rural Press representative, it averaged half knee-deep and was growing thriftily, while a few common Chilean plants were still hugging the ground. Peruvian should be planted thicker than Chilean, says Mr. Hasper, because its crowns do not get so big.

Alfalfa-Covered Field Shelters.

[Written for Pacific Rural Press.]

Field shelter for shade is desirable on most California farms during the warm summer season for both man and beast, the need for the former being most pronounced where field packing of fruits and vegetables is practiced, and the latter need being important with hogs.

Different materials are used in making a cheap roof for these shelters, such as straw, palm leaves, and in some cases boards. But George Peters of Kern county has found

green alfalfa most satisfactory and economical for such purposes.

In erecting shelters for his potato storing and grading quarters, he sets long posts in the ground upon which is nailed a substantial frame work. Heavy wire is then stretched back and forth across the top to support the alfalfa which is placed on green as it comes from the field. The drying and settling after the alfalfa is in place binds it securely to the wires, and wind will not dislodge it.

Sorghum Produces Much Feed.

[Written for Pacific Rural Press.]

Sorghum is a feed that livestock raisers should grow more of, in the estimation of W. D. Trewhitt of Kings county, who has had excellent results in growing it after a crop of wheat or barley on irrigated land has been harvested.

Mr. Trewhitt sows it between May 1 and July 15, according to the season; and so soon as it begins to head out, he starts to feeding it green to both cattle and hogs. As it is sweet, the animals relish it and eat stalk and all. Sometimes it can be

fed in this way as late as Christmas.

But whether all of it has been fed green or not, it is never wasted; for when it begins to get too ripe, it is cut and shocked and afterward run through a feed chopper and fed to the stock in the dried form. As it is still sweet, the stock consume practically all of it when chopped.

To show the carrying capacity of sorghum Mr. Trewhitt fed 24 young steers and 60 pigs on an acre last year from the middle of August till the middle of January.

March Planting of Sudan Grass.

[Written for Pacific Rural Press.]

Experienced Sudan grass growers seem to be unanimously in favor of early planting to secure the largest return from the land. It was with the idea of getting the longest possible growing season that 25 acres were being planted to that crop at the Stephens Dairy near Mission San Jose March 23.

Last year planting was delayed till after the first of May; and while one heavy crop of hay was harvested and a fine pasture crop followed, another crop of hay might have been added by earlier planting.

Naturally location has a good deal to do with time of planting, but as most of the land of this ranch is hilly with a southeasterly slope and seldom bothered with frost, early planting is not considered dangerous. About 15 pounds of seed were broadcasted per acre.

BERMUDA GRASS KILLED IN A SEASON.

"Bermuda don't worry me at all," says Ray Henderson of Imperial county. If you irrigate quick and

get the water off quick, the Bermuda won't germinate. But in a low place that stays moist the Bermuda will thrive. On account of the heat here, if we plow it up shallow and let it dry two or three months, that us-

ually kills it. Then cut it up with a disk, irrigate to compact the ground, plow and let it lie a month or so. If any of the grass sprouts, plow it again. A season of such treatment will kill it dead.



New Western Harvest Economy

WESTERN farmers, always on the watch for improved equipment to save time and money in getting the crops off the fields, are paying a lot of attention to **Deering Harvester-Threshers** these days. Many of them have bought and are using these efficient machines. Their success and enthusiasm means a big advance in rapid harvesting this fall.

Modern grain handling means harvesting and threshing in one operation, turning the threshing expense into clear profit, doing away with the big threshing bill and burden, saving time and long-drawn-out labor.

The **Deering Harvester-Thresher** is a Western necessity. Get acquainted with it. The **Deering** cuts a 9-foot swath, harvests 15 to 18 acres per day, and threshes clean as any thresher. Requires 8, 10 or 12 horses, and one or two men, depending on attachment used. In most cases a Mogul or Titan kerosene tractor can be used to best advantage.

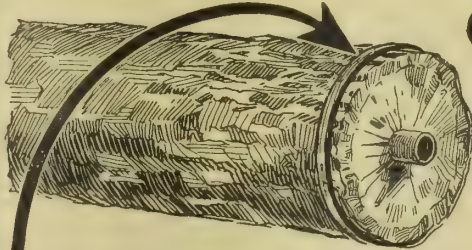
The **Deering** has proved that it is designed and built right in every particular—strong and lasting, simple, of light draft. It can be used as a stationary thresher, too, by adding cylinder and beater pulleys, which are regularly supplied. A 10-H. P. engine does the work. Capacity 30 to 50 bushels of wheat per hour. Write us for an interesting folder on the **Deering Harvester-Thresher**.

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94 Years in the ground and unharmed by Rust! —

IN 1823 the City of Cincinnati laid water mains made of oak logs with the centers bored out. To prevent the logs from checking, hand-made iron bands were placed tightly around their ends like the hoops on a barrel. Now after more than ninety years, these are being dug out. The bands are still in good condition because they were made out of iron that was practically pure.

"ARMCO" IRON CORRUGATED CULVERTS

are made of iron that is even purer than those old bands. "Armco" Iron is never less than 98.84 per cent pure iron while analysis shows that in both cases scarcely more than a trace of either Manganese or Copper can be found; and all their impurities taken together make barely one-sixth of one per cent.

This is why "Armco" Iron Culverts resist rust and give long and economical service. They represent enduring value for the taxpayer's money. Insist on having the longest lived culverts in your highways. The "Armco" Trade-Mark on every section is your guarantee.

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Armco Iron Culvert and Flume Mfrs. Association
CINCINNATI, OHIO



Earliest Watermelons Sold at Home.

[Written for Pacific Rural Press.]

From five acres of watermelons raised last year by F. C. Perrigo of San Diego county, he sold every melon on the place. The patch is on a hillside along San Pasqual River, where not a great deal of travel passes; but Mr. Perrigo fixed up a very attractive cool-looking den between a lot of big boulders beside the road, covering it with palm leaves and fixing chairs and tables inside. They sold at 2½ cents per pound at first, dropping later to one cent.

Earliest in the Valley.—The standard variety in that district is the Chilian, but this and several other varieties were discarded by Mr. Perrigo after fair trial on his home place. Kleckley Sweets proved two to four weeks earlier than the Chilian. Harris Early was an early variety, but it grew large, hollow, and woody. To get the earliest melons, when four had set on a vine, the terminal buds were pinched, making the melons bigger also.

Fertilization and Culture.—The

soil is a decomposed granite loam 20 feet deep. What it seemed to need was nitrogen. This was applied in the form of 26 loads of chicken manure which was plowed under in March. Seeds have been planted for three years just when the peach blossoms were dropping—in March one year; in April the past two years. They were planted in hills 8 feet apart each way and thinned to four vines per hill.

Water was pumped up hill to a point whence it would run around the upper edge of the patch. From the upper ditch it was let down by a furrow midway between each two rows. Water was led from this furrow to each hill with a hoe. Each vine has a tap root that must be supplied with water deeply.

The stream pumped up from a well in the river bottom through a 1¼-inch pipe kept him uncomfortably busy, so a reservoir is to be constructed this season. Bugs did not bother until melons were off.

Hillside Preparation for Alfalfa.

[Written for Pacific Rural Press.]

On the C. T. Crowell ranch in Inyo county, there are twenty-six acres of hillside land, thirteen hundred feet one way, with an eighty-foot fall, and nine hundred the other, with a four-foot fall.

Last spring, Mr. Nellen, the foreman, leveled, and hired a man to throw up borders, ten feet apart, over the whole field, running the short way. This man was just thirty days making the borders with a ten-foot V.

In April, the field was sown and yielded two crops, only one of which was cut, the other being sold for sheep pasture at a good price, besides getting the benefit of the manure.

A pipe line fed by a mountain stream is run down one side of the field the long way, with an outlet or gate every hundred and twenty feet.

In cutting the first crop, the mower had to run between every two borders twice; but in raking, all space be-

tween three borders was raked at one time as four teeth were taken from the center of the rake, which space straddled the middle border.

This spring, the land being "set," all borders were knocked down, with the exception of every eleventh one, which was left and reinforced, thus making them one hundred and twenty feet apart or one at every outlet in the pipe line.

A gate was put in the borders every hundred feet and the space between borders corrugated three inches deep, two feet apart. The corrugator was made of four, four by sixes, nailed beneath a platform and equipped with iron runners and iron shoes in front.

One man can now irrigate the entire field in two and one-half days and keep water well under control.

The alfalfa is looking very good, considering the severe cold weather of the past month.—H. J. B.

SALTING HIDES.

To the Editor: How can I handle green hides to avoid hair slipping and too great shrinkage when I hold them three or four days before shipping? Have always salted them well.—G. P. G., Ontario.

Salt evenly all over, especially at the points, with 12 to 18 pounds of salt, after allowing the hides to cool thoroughly—perhaps six hours. If you have many and salt them in stacks, be sure that the outer edges, especially the points, drain toward the center so they will not wash the salt from hides under them. Have hides clean before salting and stack them flesh side up. If you have done all this, we will guess again.

MILO BETTER THAN WHITE EGYPTIAN.

If you were interested in the article under this head last week, you would like to know where the corn was grown. The article was written by Benj. Quigley of Linne, San Luis Obispo county, concerning his own experience.

BLOOD REPELS RABBITS.

To the Editor: Referring to the inquiry of A. F. K. of Ripon about how to keep rabbits out of the garden: If he will spray blood on the outer border of the garden, the rabbits will let it alone.

Santa Rosa. M. Branghler.

FUR CAME OFF.

To the Editor: How can I tan coyote and fox hides so the fur will stay on after tanning?—J. C. C., Raisin City.

Perhaps you have been skinning them before they were cold. If so, let them get quite cold and skin them out of the heat of the sun. Then proceed as usual with the tanning.

Wilt-infected seed potatoes can be detected only by cutting a slice from the stem end. If dark spots are found following the fibers from the stem, they are diseased; and if planted will not only infect the next crop, but will infect the ground so it cannot be cleaned of disease for many years to come.

790 Bushels of Potatoes

PER ACRE, THE LARGEST CROP
ON RECORD IN THE U. S.

Were grown in California and awarded Grand Prize by International Jury, P. P. I. E. Not only was this the largest crop, but the quality was especially fine, bringing a price considerably above the market. The grower attributed a good part of his success to the use of

Gold Bear Fertilizer

The average crop of California is about 150 bushels. What do you get?

W. V. Shear, Potato Expert, says: "Don't try to save money by adopting cheap methods to cut from cost of production. Is it not

good business practice to spend enough money to produce a good crop and make money on the investment rather than use cheap methods and lose money?"

Fertilizing is not an expense, but an investment, yielding immediate returns.

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250 lbs. of Mocooco Superphosphate per acre will increase the yield of alfalfa enormously. "In some cases the alfalfa growth has been tripled," writes Mr. F. E. Lyons, San Joaquin Co. Farm Adviser. Write for particulars.
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Z. A. MACABEE,
Box P, Los Gatos, Cal.

Raising Poultry for Profit

SMALL POULTRY PLANT.

[Written for Pacific Rural Press by Susan Swaysgood, Pomona.]

A few weeks ago I had occasion to go to a town lot plant, and found three varieties of poultry in a small yard. The runs were separated and each variety was being used as breeders. Now if there had been but one variety, the hens could have had more space for exercise. And that is the great feature in breeding—exercise. My friend took my advice, sold off two of his breeds, and turned his three yards into one.

A Good Sized House, open front, shed roof to give more sunshine than a gable roof, and a curtain to protect from winter storms, will give better results, in fertile eggs, than a poor, sunless house and a yard attached. By keeping a foot of clean litter in the house your hens will get all necessary exercise and be warm and comfortable. A house that appeals to me for small quarters is what I would call a story and a half high. This economizes space and is a change. For best results the ground should be prepared before the building is put on. Cement would be the freest from filth and from mites for the ground floor, but it is very cold. If the ground is saturated with crude oil for a foot or more below the surface, and pounded down hard, it will keep free from mites a long time. The north side or back could have a concrete wall the whole length of the building. For the rest let two pillars of concrete finish the foundation, and make small mesh wire panels to fit the ends and front. In cold, stormy weather, the hens can be confined to the upper story.

The upper story is the house proper. It must have a board floor, nest boxes, perches and dropping boards. These should be at the closed back of the building; and for the hens to get below two or more stairs will lead down. If the ground on which the building stands is raised a little above the level and made hard with tamping, it could be cleaned out indefinitely without removing any of the floor, as the litter would catch all dirt.

Make your brood coops in a row, for economy in space. Make your coops large enough for chicks to eat and exercise in when weather is bad, and build your runs out from the coops. One wire serves for two yards in this way. Ten-foot runs, even though not very wide, will give more exercise room than shorter and wider runs, because chicks like to run and spread their wings. You will save much vexation of spirit by using one-inch mesh, even though it costs a little more. Chicks will get out of two-inch. A brood coop five feet long and three feet wide will accommodate 50 chicks and a fireless brooder; or two hens that are agreeable can mother 50 chicks in such a coop and a run ten feet long and 5 feet wide. The coops need not be more than 2½ feet high in front facing the run and 1½ at the back. In bad weather the chicks can stay in until three months old and take no harm; but if you put

in more you increase the death rate; for chicks cannot be crowded. Even with fifty, they must be kept extremely clean to avoid risk. By building these coops in a row you not only save time, but lumber, nails, and labor, as three 6-inch boards of any length, according to number of coops made, will make the back; and there will only be two end boards needed, where if individual coops are made, each one requires two ends. The partitions can be of lighter stuff, or even of wire. The roof too can be made in one; but instead of making fast, it should be hinged at each coop and have props attached that can be lifted up in good sunny weather to let sunshine in. Individual roofs can be made and hinged at the side if liked better. If a fireless brooder is used, it should be placed at one end of the coop and the space at the other end left for scratching and feeding.

At the front of each coop a window 6 inches wide and 2 feet long should be put in about 6 inches from the top, and at the same end as the brooder is to be put in. After the window is in and fitted so that it can slide out, tack a piece of oiled muslin cloth over it on the outside. When the window is open, the muslin screen gives light and air without letting in wind or rain. Make the hole for entrance and exit of chicks under the window, and you have the other end of the coop entirely free from cold air or drafts of any kind. In addition, for better air prop the roof up a few inches in warm weather. If hens are used, you will have to make larger exits into the runways. A sliding door is best to keep out cats. The doors could be made in the form of a screen or of solid board.

Feed and water should be kept inside in bad weather, and in warm sunny weather you will have to make some shade if there is no natural shade. If nothing else is available tack a piece of muslin along the wire sides of the runs; that will make partial shade anyway.

Now as the chicks grow, by removing the brooder and putting in a frame of perches, these coops can be made to accommodate 25 growing chicks until they get quite large, or ten hens could be kept in them so that your coops never need be vacant or idle.

Just as soon as the cockerels can be distinguished put them in separate runs and feed them up so you can either eat or sell. They grow faster by themselves and the pullets always do better. Spray your coops often—don't wait until you see mites. Unless you get up before cock-crow, the mites will have gone back to bed.

QUESTION ANSWERED.

Hens Won't Set.—Can you tell me what to do to get my hens to set? They act as if they wanted to, then leave the nests and spoil my eggs.—Mrs. M. B.

First make sure that lice or mites are not driving the hens from the nests. If they are absolutely clean, all you can do is feed whole or

cracked Eastern corn, nothing else, and clean water. Corn is more lasting in a hen's crop than any other kind of feed, besides it is more heating, and that is what your hens lack. If there are no mites and lice a hen will always set, provided she is hot enough.

Poultry Breeders' Directory.

EXTRA QUALITY White Leghorn chicks. 12c until March 1st, then 10c. Carefully line bred from MacFarlane, Young, Martin, and Cyphers strains of foundation stock. Eggs, \$1.50 per 15, \$2.50 per 30, \$5.00 per 100, \$50.00 per 1000. Acres of free range connected with our breeding pens, 20,000 feet under roof. Only Jubilee incubators used; disinfected every hatch. Don't save 2c per chick in buying, and lose a dollar per pullet in raising; get the Best and Succeed. Newton Poultry Farm, Dept. 1, Los Gatos, Cal. Catalogue free.

THE J. K. BIGELOW POULTRY RANCH and Hatchery—300 acres devoted to superb vigorous Hoganized White Leghorns. Bigelow chicks are incomparably superior to the product of ordinary commercial hatcheries. Prices same as former seasons—10 cents each till April 1, 9 cents during April and May, and 8 cents thereafter. Shipped on approval; examination before paying. The Bigelow Poultry Ranch, Sonoma, Cal.

HIGHEST CLASS—Winners at State Fair, Oakland, Modesto, Reno. White Rocks and White Leghorns. Incubator chicks. Rocks, \$25.00 per 100; Leghorns, 10.00 per 100; Hatching Eggs, \$2.00; \$5.00, and \$10.00 per 15, according to quality. Rock Eggs, \$10.00 per 100; Leghorn Eggs, \$6.00 per 100, from range flocks. The best of stock and a fair deal. Mahajo Farm, P. O. Box 597, Sacramento, Cal.

ROOFDEN RANCH CHICKS are good chicks, well hatched from first-class utility breeding stock—money-making egg producers. The prices are right—7c to 14c, depending on breed, month, quantity (dozen to thousands). White, Buff, Brown Leghorns; Black Minorcas, Rhode Island Reds, Barred Rocks for dollars and sense. Send card for circular. Roofden Poultry Ranch and Hatchery, Campbell, Cal.

BARRED PLYMOUTH ROCKS — COCKERELS—Cockerels—Cockerels—Yes, we have them; also Hens and Pullets—all bred from our Champion Winners at California's leading shows. Also hatching eggs. If it's Barred Rocks you want, get in touch with me right away. Have bred them exclusively for nineteen years. Send for Catalog. Chas. H. Voden, Box 396, Los Gatos, Calif.

200-299 EGG BARRON LEGHORNS, Wyandottes; Buff Orpingtons, Wyandottes; White, Barred Rocks; Reds; Anconas. Fifty young Leghorns \$2-\$55, trapezoid 200-288 eggs. Scores first prizes—Don Blancos, Seven Firsts. Special Sale April 7-21. Ranch Lincoln and Piedmont. Visit or order. Eggs, Chicks, Breeders—everything reduced. M. Beeson, Pasadena, Cal.

"FINEST HATCHERY IN THE WORLD"—Baby Chicks, White Leghorns, and Rhode Island Reds, setting, 100's, 1000's, hatched right in our \$60,000.00 brick and concrete hatchery from our quality heavy layers. Reasonable prices. Stock, Hatching Eggs. Peabeside Poultry Farm and Hatchery, Sunnyvale, California.

BABY CHICKS—From large, healthy, vigorous, heavy laying thoroughbred Single-Comb White Leghorns. \$10 per 100; \$2 per 100 when order is booked, and balance 5 days before delivery. I pay the express to your nearest express office. H. A. Schlotthauer, Exeter, Cal.

WHITE LEGHORN AND BROWN LEGHORN day-old chicks from healthy, vigorous breeders. Per 100, March \$10.00; April and May, \$9.00. Reduction in larger lots. "Chicks well hatched are half raised." San Jose Hatchery, 373 Meridian Road, San Jose, Cal.

MAY AND JUNE CHICKS—Will lay this fall if from our early maturing strain. Our Leghorns and Reds begin laying at 4½ to 5 months. Leghorns \$10 per hundred. Reds \$12.50 per hundred. Brooke Farm (Rancho del Paso), 807 J St., Sacramento, Cal.

BABY CHICKS—From white Leghorns that are the result of severely hoganizing for the last six years. Our Barred Rocks are thoroughly hoganized; none can be better. April May and June hatchings. Atterbury Poultry Farm, Route No. 1, Box 183, Turlock, Cal.

BABY CHICKS—HATCHINGS EGGS—White, Buff, Brown Leghorns, R. I. Reds, Barred Rocks. Sturdy chicks from well-mated fowls. Prompt, efficient service. Write for circular. Campbell Poultry Ranch, Campbell, Cal.

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HOGANIZED AND TESTED—220-egg type White Orpingtons and Buttercups. Hatching eggs, chicks and cockerels for sale. Reasonable prices. For particulars, write M. Woodhams, San Mateo, Cal.

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HICKS JUBILEE HATCHERY, Petaluma, Cal.—White Leghorn and Black Minorca chicks and hatching eggs. Circular "How to Raise and Feed Chicks" Free.

GIVE the Black Minorcas a trial. Guaranteed first class. Eggs, \$6 per hundred, \$1.25 per setting. Chicks, \$12 per hundred. Ezra Mosher, Union Station, Napa.

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RHODE ISLAND RED and White Leghorn Eggs and Chicks. Splendid layers, large eggs. Send for circular. Rosedale Ranch, Hayward, Cal.

BLACK MINORCAS—Largest egg; whitest flesh. Eggs, \$1.00 per 13; \$5.50 per 100. Edward A. Hall, E. F. D. 1, Watsonville, Cal.

HATCHED CHICKS from Barred Rocks, R. I. Reds, White Leghorns. Good stock. Send for circular. G. L. Hawley, Madera, Cal.

CHICKENS, DUCKS, GEESE, GUINEAS, Pea Fowl, Pigeons. Wm. A. French, 545 W. Park St., Stockton, Cal.

LASHER'S HATCHERY, PETALUMA—Write for booklet, "The Day-Old Chick Business" and price list.

WHITE PLYMOUTH ROCKS—Hatching eggs from splendid layers. Mrs. J. B. Tupper, Route A, Ceres, Cal.

TURKEYS, DUCKS, AND GEESE.

THOROUGHbred French Rouen Duck Eggs for hatching from winners at San Jose, Oakland and Arizona shows. Also Bourbon Red Turkey eggs. Mrs. Emma V. Miller, Farmington, Cal.

MAMMOTH BRONZE TURKEY EGGS—\$3.50 per setting. Toulouse Geese eggs, 25c each. Mrs. M. Coghlan, Walnut Creek, Cal.

BRONZE TURKEYS—Young Toms for sale. No more eggs till further notice. Free circulars. Albert M. Hart, Clements, Cal.

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BUILT ON a correct, patented principle—and built RIGHT. You can depend on it to raise your flocks, to reduce chick mortality, and give you big, sound birds. Costs only 2c. to 5c. a day to run. **PRICES, f.o.b. Factory, 41-Inch CANOPY, \$11.75 52-Inch CANOPY, \$12.85**

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Cottage Gardens Nurseries, Inc.,
EUREKA, CALIFORNIA

Mrs. Best's Letter.

DRESS FORMS.

Dear Friends: With spring and thoughts of new clothes the subject of dress forms is apropos. There are adjustable and non-adjustable forms now on the market and their virtues will be discussed. The non-adjustable form still appears with small waist, well developed bust and hips and so does not represent the average woman's figure. However they are less expensive than the adjustable form and for those who are buying for themselves or people similar in size, or for those who have a form and have to continually allow for the difference in size, I will tell you that if you have a lining made very carefully to fit you, then place this lining on the form and pad it out, quite satisfactory results may be obtained.

There is a model of the adjustable form which divides into four sections—under each arm, front and back. It may be pushed in or pulled out, opened up or pushed together to give the shape desired. This model is usually satisfactory for a family's use and costs around \$8.

Then there is the real adjustable form on which the bust is divided several times, the hips likewise. This enables a very accurate imitation of the human figure by measurement. It is correct enough for fitted things, and is especially used by dressmakers for careful work on many different styles of figures.

The pneumatic form is made of exact measurements and then inflated. But it is usable by only the person to whom it belongs and that person's figure may change. Also women who have worked with it say that you have to be very careful of pins and for the home dressmaker who is experimenting that is quite a drawback.

Rosabella Best.

A NOVEL RECIPE BOOK.

A young housewife who is intent on gathering and preserving desirable recipes for her household work, has a novel and easy mode of arranging them so she can immediately find just the one needed.

She has taken a blank book about 6x8 inches, one that has a pliable cover and not too many leaves, and has made pockets into which to slip the recipe, when cut from some paper or given to her by a friend. To do this she has pasted the upper and lower edges of two leaves together, labeling each pocket and leaving a few pages between that and the next one for any notes on new recipes she cares to write. Thus she has all her recipes for meat in one pocket, cakes in another, etc.

It is much more convenient than having a lot of unsorted clippings to hunt over when she wants any special recipe. Try it.—Mrs. A. E. W., San Diego.

SIMPLE FURNISHINGS.

Most homes have too many things in them just to look at. Too many pictures, pieces of bric-a-brac, odd stands and frail chairs give a room a cluttered appearance.

A much more restful atmosphere is felt in a house that has only the necessary furnishings and those of simple styles.

THE HOME CIRCLE

LIKE A LAVEROCK ON THE LIFT.

It's we two, it's we two, it's we two for aye,
All the world, and we two, and Heaven be our stay!
Like a laverock on the lift, sing, O bonny bride!
All the world was Adam once, with Eve by his side.

When the darker days come, and no sun will shine,
Thou shalt dry my tears, lass, and I'll dry thine.
It's we two, it's we two, while the world's away,
Sitting by the golden sheaves on our wedding day.

—Jean Ingelow.

TAKING STOCK.

During the time of year when men are taking stock and laying plans for the coming busy season, women folk will also find it to their advantage to do likewise. Many wornout, or otherwise useless articles accumulate about a pantry or cupboard and should be disposed of. Perhaps, too, utensils and dishes could be more conveniently arranged. New ones may be deemed needful, and if so should be added, but it never pays to have more than are actually needed, as they are only in the way and require care.

Then, too, there are many new de-

vices which economize time and energy in doing housework, and these deserve consideration to see if they comply with one's needs. At times when help is scarce and inefficient, a housekeeper can well afford to own and employ every device or implement that will enable her to accomplish more work, better results, or conserve energy. A kitchen is just as much entitled to up-to-date tools, and these in first class condition, as is the barn. A few tools, wisely selected, in good condition and conveniently arranged, can be made to serve the woman's work bench better than the many.

Later when the busy season is on there is no time for changes, for work must then be turned off.

KITCHEN HELPS.

Once a week put a handful of sal soda down the drain pipes, then pour boiling water down them. This cuts the grease and keeps the pipes clean.

Cook all macaroni products in plenty of water. Always use boiling water and blanch with cold water when done.

To dye a white silk waist pink, use the package of color that comes in gelatine in the rinsing water and you will have a delicate pink.

Floral Department.

[By Geo. N. Tyler.]

Dahlia Planting.

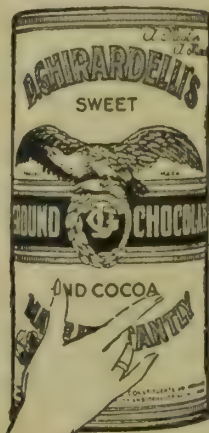
You can plant your dahlia tubers from now on. Sandy soil is best for them. The way I plant is as follows: I dig a hole about six inches deep, but do not make the soil very rich. I put in a good stake about four feet long, one inch thick. I tack the label with the name of the variety to this stake. I put in the tuber in a diagonal position with the top and against the stake and then cover with two inches of soil. Be sure your tubers have a live eye, or they will not send up any shoots. I only allow one shoot to grow, and as it starts I fill in the soil till it is level with the top. Cultivate often, and as soon as the shoot is six inches high, pinch the top out and it will branch close to the ground. A branch will come at every leaf left on. When the flower buds form, give a heavy dressing of half-rotted manure, or you can use green manure and give abundance of water through the manure. By abundance of water I mean enough water that if you break off a branch the hollow inside will be full of water. Disbud for large flowers, and keep all old flowers cut off.

Hanging Baskets.

You can now start your hanging baskets. In making up a basket get a deep one made of wire, or wood rustic style, or what is best of all, a terra cotta basket made of same material that pots are made of. If of wire line them with live moss and fill up the basket with the richest soil you can procure. A liberal sprinkling of bone meal is very beneficial as it lasts longer, and your basket will keep in good condition longer. Use Kenilworth ivy, wandering Jew, variegated ground ivy, ice plant, or in fact any variety of plant that droops. You can use for center, achyranthes, lobelia, coleus, flowering begonias, and a variety of plants to suit your location. After the plants are planted in the basket, place it in a tub of water and let it stand for a few minutes, then lift out carefully and put in a shady place for it to drain and the new plants to get established. You can then cover the top with moss, as it helps to retain the moisture. After it is in strong growth it should be watered every day by dipping into a pail or tub of water. Never water with the hose, except to spray the foliage, and then only with a fine spray, or you will wash the dirt and moss from them and they will become unsightly. Never let them get wilting dry or they will soon become shabby. Remember they are hanging up in the air and in more or less draft, so they dry out very quickly. The pottery baskets are better for a dry place, for they do not dry out like a wire basket and they will stand more neglect.

Never try to grow a basket the second year for the soil is exhausted and it will never look well. Make them up new every year, or even twice a year, if you want to keep a pretty basket on your porch all the time. Very few baskets will stand the full sun.

To test the oven temperature for cake white paper should turn yellow in five minutes.



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When you buy Ghirardelli's Ground Chocolate you get the grand prize winner, a chocolate of finest quality packed in a hermetically sealed can that holds all the Ghirardelli goodness in and keeps all outside evils out.

You buy Health when you order

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San Francisco

Good Health.

(By H. E. Pastor, M. D.)

Some of the Joys of Journalism.

In setting forth some views on the subject of vivisection the other week we innocently stirred up a hornet's nest. We didn't mean to do it. As a boy we once thrust a long stick into a rotten stump in an Illinois forest which happened to be the abiding place of a colony of hornets, and the response to that prodding was such that we never went looking for hornet's nests afterwards.

Now, it was not expected that everybody would agree with the views expressed in that item; neither did we expect exception to them to be taken in the manner of one or two critics, who turned themselves loose in several pages of vitriolic correspondence. He who writes to please everybody, pleases nobody—realizing which, we try to please ourself; that is, to speak out our abiding convictions. In discussing vivisection it was merely intended to set forth the writer's personal belief that the alleviation of human suffering is more important than the pain reluctantly inflicted upon lower animals, endowed with comparatively insensible nervous organizations, and the consequent forfeiture of their lives. Discussion of controversial themes is not usually profitable anyhow, and we propose to withdraw from the subject, for the time being at least, and retire for repairs.

The Fly Menace.

The house fly begins laying eggs soon now. The period of incubation and immaturity is quite short. Concerted efforts should be made in all communities to get rid of flies and the diseases resulting from fly contamination. Fly-traps are useful for this purpose. Bait the trap with decaying fruit, meat or fish. They revel in and thrive on nastiness. Their reduction will lessen the number of cases of typhoid fever and intestinal diseases, especially in very young children.

Summer Troubles of Children.

Children are very apt to get bowel troubles during the heated season, we learn from a public health report.

Many of these show that nature is merely trying to free the body of the child of harmful materials, but it should not be forgotten that any bowel complaint occurring in babies in the summer time may be the outward and visible sign of the beginning of a serious illness. Since improper food is the most common cause of this bowel complaint, it is the sacred duty of every mother to provide her child with proper food which should be carefully given at regular intervals. This means increased work for the mother, but this is more than repaid by the child's gain in weight, health, and strength.

PORK RECIPES.

Sausage Rolls.—Make a dough as for baking powder biscuits; roll out and cut in large rounds with a biscuit cutter; lay sausage meat on half of each piece; turn the other half over and pinch together; bake half an hour. Serve with brown sauce poured around it.

Ham Steak.—Put slices of raw ham in a frying pan with ½ cupful water to make them tender. When the water has boiled out and the ham is brown on both sides, dust with flour and pour on the following dressing, previously made: 1 cupful of cream and milk mixed, a little butter, 1 teaspoon mustard and a dash of tabasco sauce. Serve hot.

Pork Tenderloin with Potatoes.—Wipe tenderloins, put in a dripping pan and brown quickly in a hot oven; then sprinkle with salt and pepper and bake 45 minutes, basting every 15 minutes. Pare potatoes and par-boil 10 minutes, drain, put in pan with meat and cook until soft, basting with the meat.

Bacon and Liver.—Fry enough pieces of bacon a nice brown and put in the oven to keep hot. Pour boiling water on the slices of liver, remove the skin at the edges, roll in salted flour and fry slowly until well done in the bacon fat.

Ham Omelet.—Two eggs, 4 tablespoons butter, 2 tablespoons minced ham free from fat, pinch of pepper. Fry the ham for 2 minutes in a little butter. Then mix the ingredients all together and proceed as with a plain omelet. Serve hot.

To Keep Fresh Pork.—Roast as many pieces as you wish to keep, all ready to serve, then put them away in lard. All that is necessary is to reheat when ready to use.

Bacon and Fried Apples.—Fry the bacon a delicate brown and set aside to keep warm. In the bacon fat, slice tart apples and fry slowly until tender. Sprinkle with sugar and pile in the center of the platter and surround with the slices of bacon.

Braised Pork Tenderloin.—Three large tenderloins, ½ dozen slices bacon, 1 cup tomato, 1 bay leaf, 1 slice onion, minced fine, salt and pepper. Put the bacon in the bottom of the pan and lay the tenderloins in lengthwise. Pour the tomato over the whole and sprinkle the onion, bay leaf and seasoning over it. Add 1 cup water. Bake in slow oven for about 1 hour. Take out meat and place on hot platter, strain the sauce that is in the pan, add 1 pint water and thicken. Pour over meat and serve at once.

Roast of Pork.—Take a piece of loin about 3 lbs. in weight—score the rind across ¼ of an inch apart

and season with pepper and salt. Place in a roasting pan in a medium hot oven and brown. Then add ½ cup hot water and baste frequently

as the cooking continues. Turn the meat often that all sides may be well browned. When done, make a gravy from the liquid in the pan.

—give the California pig a chance



COFFEE

3 lbs. for \$1.00.

I sell from 20,000 to 30,000 lbs. of coffee every month. By buying direct from the growers, doing my own roasting and selling direct to the consumer, I do away with two middlemen's profits. That's why I can give you so much for your dollar.

Long's Best Coffee has a flavor and aroma that will win your instant approval. It is a blend of four mountain grown coffees, and hence high-flavored.

Long's Best Coffee Delivered to Your Door by Parcel Post.

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Mechanical Power on the Farm.

Users of tractors, engines, pumping plants, motor trucks, automobiles, electric motors, and other mechanical farm power are invited to make this department an exchange of their experiences and troubles.

FORD ATTACHMENT GRINDS FEED.

[Written for Pacific Rural Press.]

A simple attachment to the crankshaft of Joel Anderson's Ford in Imperial Valley enables him to grind feed, cut silage, pump water, saw wood, etc., without straining the transmission. In cutting silage, it also pumps water through a hose over the top of the silo. As soon as a tank can be built on top of the silo, the automobile will be used to fill it.

To keep the engine cool on such work, no pump is used; but a barrel of water is connected with the radiator so that the surface of the water in both is at the same height and can run from the top of the radiator on the level to the barrel. A hose also connects the bottom of barrel and radiator. The warm water rises and flows into the barrel, while cold water from the bottom of the barrel replaces it in the radiator by automatic circulation.

The attachment is a heavy rod fitted onto the crankshaft to extend it beyond the front wheels. A five-inch pulley is put on for a three-inch belt and light work or low-speed heavier work, or a 10-inch pulley and four-inch belt for faster, heavier work. As the engine is 22 h.p. it can do any of the required jobs.

To brace the pulley when under the sidewise strain at work, a cross bar is fastened to the radiator bed and braces run to this from an axle boxing just back of the pulley.

The machine usually is set about 12 feet from the car and "will grind all the threshed corn a man can shovel into the grinder, but the engine doesn't overheat."

DIVIDED COST OF WATER.

[Written for Pacific Rural Press.]

In Coachella Valley, a dependable water supply available on short notice is necessary for those who grow vegetables in the hot sandy soil for early markets. Practically all of the irrigation is from wells; but a well is rather expensive for one vegetable grower alone, even if he has a little fruit and other crops too. Especially during the harvest time of many vegetables, they must be watered every night or day.

E. A. Miller and R. R. Cheatham helped each other by dividing the cost of a well and using the water alternately. Mr. Miller has 20 acres, part of which is occupied by 43,200 date seedlings which must be frequently watered, and the rest is in vegetables. Mr. Cheatham grows vegetables on about the same acreage, yet both together do not use the water over half the time through the year.

A 12-inch well was sunk 323 feet deep. The water comes within 26 feet of the surface in summer and 21 or 22 feet in winter.

A 15 h.p. electric motor and five-inch centrifugal pump deliver about 50 inches of water, not pulling the water level down over 12 or 14 feet. Pumping costs 18 cents per hour at 2c per kilowatt. Neither the motor nor the pump work up to capacity.

The fifty miner's inches furnish enough water in eight hours to cover four acres two inches deep. They cost 18 cents per acre inch, which is cheap enough.

TRACTOR GAS SAVERS.

To the Editor: You printed a note saying that gas savers are harmful to tractors. I know they are a good thing on automobiles. Why not on tractors?—C. B., Escondido.

[Answered by Prof. F. L. Peterson, Holt Mfg. Co.]

The only reason that a gas saver works satisfactorily on the automobile is that the engineer tends to have an over-rich mixture in the first place and that the gas saver actually does give him a better mixture. However, if this same automobile with the gas saver were used continually in low gear and up a steep grade which would correspond to the load that the tractor is always up against, the automobile owner would find out that his gas saver would be a detriment.

All the air has to pass through the carburetor to get the best vaporized mixture possible. When a man has an accurate carburetor adjustment for the particular load that he is working with, he cannot secure a better adjustment anywhere by having extra air enter at parts other than the carburetor. I would imagine that such firms as the Rayfield, Schebler, Stromberg and other manufacturers are alive enough to the situation to get their carburetor perfected as much as possible. If auxiliary air devices were necessary, I know that they would furnish them as part of the standard equipment.

CEMENT PIPE UP HILLSIDE.

[Written for Pacific Rural Press.]

E. H. Webb of San Diego county has an engine and centrifugal pump in the well on the river bottom, by which he forces water to a reservoir above the hillside house and dairy barn. There is a 65-foot lift and a 40-inch flow. The pipe is 1100 feet long, 8 inches diameter, and machine-made of cement without reinforcement, but with extra proportion of crushed rock and tamped very hard. One section resisted 120 pounds pressure before it broke. The cement pipe cost 18 cents per foot—less than \$300 laid under ground for the whole job.

Cement Should be Buried.—The pipe broke three or four times where it curves over a sharp shoulder 20 feet above the pump and was buried only 16 inches underground. Mr. Webb thinks if it were buried three feet deep, it would avoid the contraction and expansion due to summer heat and winter frost. Perhaps the extra dirt might help it to stand the pressure too.

TESTING VARYING OILS.

To the Editor: Some people claim there is a big difference in the quality of distillate and gasoline made by different oil companies. How can a farmer tell or find out for certain?—P. A., Lodi.

There is every chance for variation in the oils made by different

Do It Electrically



ELECTRIC APPLIANCES in the household, not only add to the convenience of all members of the family, but they are economical and time-savers.

ELECTRIC APPLIANCES include CHAFING DISHES, COFFEE PERCOLATORS, VACUUM CLEANERS, ELECTRIC IRONS, and every other appliance that is needed in the modern home, not forgetting **ELECTRIC FANS.**

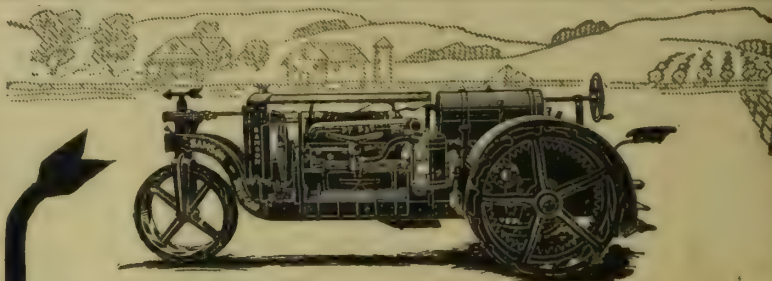
We carry these appliances in many of our branch offices, and will be glad to have you call and inspect them. Where we do not carry them we will be just as glad to give you our expert advice.

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Built to Last!

Clean-cut and powerful looking, isn't it! It lives up to its appearance, too. Up-keep and working costs unusually low. Kerosene, distillate or gasoline used as fuel in the

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Two sizes—12-25 and 6-12 horsepowers. Ask us how Sieve-Grip wheels, Nodust-Moisto-Rizer, Roller Pinion, etc., on Samson Sieve-Grips can make money for you.

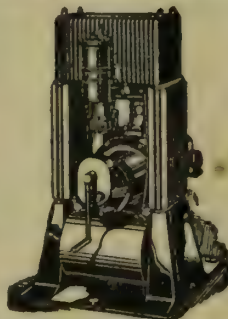
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Electricity for Farm Homes

At one-third cost of juice from Power Company (this includes interest on cost of plant). It is the simplest and most economical plant on the market.

No Batteries - No Switchboard - No Rheostat

Will operate 50 lights 7½ hours for 11c. Will also operate electric fans, irons, small motors, etc. If your buildings are not wired, send us plans and we will give you full instructions so that you can wire them yourselves. Material furnished at lowest cost.

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people; for the distillation of the lighter oils to separate them from heavier, depends on the tempera-



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High Feed Costs Smashed!

Down they go—to smash! In scads of cases cut down a HALF! Thousands of farmers are selling their No. 1 hay, milling off grades. They're making the grandest alfalfa chop; fattening hogs, cattle, sheep, poultry and turkeys making it cheaply, easily, with our famous patented Recutter Attachment (suitable for field use). Handles leaves, stems and all! No waste! No injuring color of hay. Makes dandy combination feeds from clover, rice, straw, cornstalks, bean straw, pea vines, oats and rye. Biggest guaranteed capacity 1200 to 2700 lbs. per hour. 600 to 900 lbs. of meal per hour with Junior Mill (run with 8 to 9 h. p. engine). Cracks peas, corn and beans.

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SEVEN SIZES


Tremendously amplifies silo filling. Grip Hook Force Feed table automatically feeds cutter—saves wage and board of from one to three men. Makes richest feed, increases silo tonnage.

Blower built independent of cutter. Let your fan spin fast or slow, the speed of knife shaft is unchanged. No belt to slip, wear out and waste time, money, power. Patented low-speed one pulley chain drive is faster, cleaner. Saves 1-4 to 1-4 power cost!

Powerfully built. A fourth heavier with wonderful record for long service. Write for latest catalog and sample of chop to

Junior Mill—Capacity, 600 to 900 lbs. meal per hr. 6 to 8 H. P. Engine.

Pacific Implement Co., San Francisco, Cal., or Smalley Manufacturing Co., Dept. 41, Manitowoc, Wis.



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tures used. A U. S. standard test is being sought by the government so that all oil called gasoline, for instance, may have a certain flash-point and density. A farmer can get the instruments to test oil, but there is some danger in the uninitiated doing it, and we believe it cheaper to take representative samples to chemists who know how to make the tests accurately.

POWER FOR DAIRY HOUSE.
[Written for Pacific Rural Press.]
The dairy house of Ennis and Williamson of Riverside is supplied with water, steam, and power from the outside, so that everything is handled with speed, cleanliness, and economy for their whole milk trade in Los Angeles.

A tank for "tops" oil stands on a tower at a good distance. An underground pipe from this supplies the burner for a boiler where it is lighted very easily. The boiler supplies steam to heat water and sterilize utensils.

Another pipe from the "tops" tank supplies a 4 h.p. engine which runs a plunger pump to fill the water-tank on the separator house. This engine also grinds feed for the cows.

With the water above the wash house, it gravitates down through the milk cooler where the milk is lowered to 50 degrees, summer or winter. It also supplies the wash-room tanks for both hot and cold water.

POWER NOTES.
It is recorded that there are 25,000,000 horses in U. S. and 150,000 motor trucks.

F. M. Butler, J. R. Fountain, and E. L. Robinson of Banning have recently bought Bean tractors.

Seventeen tractors have been at work on the Chowchilla project plowing an average of 500 acres per day.

Hogs go to sleep riding auto trucks 45 miles to market, according to an Indiana farmer, who says they enjoy it.

Andrew Bonnickson and R. E. Lemoine of Brentwood are farming 1000 acres with two 75 h.p. Best Tracklayers.

Three Waterloo Boy tractors working day and night on the Mark Germain ranch in Imperial Valley, plowed 420 acres in ten days this spring.

E. G. Stinsen of Orange recently received his sixth carload of Samson Sieve Grips. Two of them went to Allen Bros. of Garden Grove and C. J. Klatt of Orange.

About 30,000 destructive fires per year are caused by people who leave current running through electric devices during their absence, as estimated by the Actuarial Board of Fire Underwriters.

Two new 36-inch centrifugal pumps were to be installed in March by the Rice Land & Products Co. of Colusa, who put in 1000 acres extra of rice this season. The new pumps have a combined capacity of 60,000 gallons per minute.

Over \$10,000,000 worth of motor cars were tied up in Detroit by freight car shortage at one time recently. The Hudson people sent caravans of new empty automobiles overland to points in other States where more freight cars were available.

Why Buy



The Original and Genuine
Edge Drop Planter

The Black Hawk Bean Planter

"Because It Delivers the Beans"

It has OPEN or CLOSED WHEELS, frame adjustable FOR 26 to 44-INCH ROWS, chain drive, automatic gear shift, FLEXIBILITY, EXTRA LARGE 12½-INCH SEED CANS, sight feed, removable wheel boxes, variable edge drop and disc marker.

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As proof that Layne & Bowler Pumps are built to meet every imaginable condition, you will find them in operation in all parts of the world—as far away as Russia, India, the Philippines and other countries. Yet they are built here in the West to meet Western conditions particularly. Over 5000 in operation and 5000 satisfied owners. "Let the World's largest water developers solve your pumping problems. Write for Catalog No. 25."

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Mitchell Junior—a 40-h. p. Six
120-inch Wheelbase

Mitchell
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7-Passenger—48 Horsepower
127-inch Wheelbase

One Type—In Two Sizes

Built Like No Other Car

This model plant—covering 45 acres—was built and equipped for this single type.

It is designed to build this one type at a cost which none can match. John W. Bate, the great efficiency expert, has spent millions of dollars to do that.

The savings go into extras. So the Mitchell has a wealth of features which other cars omit.

All Mitchell cars are designed by our artists, and built by our own craftsmen. So each style is exclusive.

A Distinctive Car

Mr. Bate has worked 14 years to perfect this factory and this car. Every building, machine and method shows the last word in efficiency.

His methods save us on this year's output about \$4,000,000. And all that goes into Mitchell extra values.

Our latest models are the result of more than 700 improvements made by Mr. Bate. He spent a year in Europe to get some of the ideas.

So the Mitchell offers, in many ways, what you cannot find elsewhere.

Unique Features

The latest Mitchells embody these distinct attractions:

31 Extra Features—

24 Per Cent Added Luxury—
100 Per Cent Over-Strength.

There are 31 features, most of which all other cars omit. Each is something you will want. Go see them. These are paid for by our factory savings.

On this year's models we add 24 per cent to the cost of finish, upholstery and trimming. Our new body plant saves the money to do that. This makes the Mitchell the luxury car of its class.

In the past three years we have doubled our margins of safety. Now each important part shows 100 per cent over-strength.

To Double Car Life

The object of this new standard is to double car life. Over 440 parts are built of toughened steel. Safety parts are all oversize. Parts which get a major strain are built of Chrome-Vanadium.

Our engine test is 10,000 miles without wear. Our gear test is 50,000 pounds per tooth. Our spring test calls for limitless service. Not one Bate cantilever spring has broken in the two years we have used them.

One Size, \$1150

Mitchell Junior is about like the Mitchell, but a slightly smaller car. Still it has a 120-inch wheelbase. It is the marvel of Motordom this year in the value that it gives. See which size you like best.

You will want these extras. And, when you know, you will want a Bate-built car. It means a complete car, a smart car and a lifetime car. It is the last word in efficiency. Let your dealer show it to you before the spring over-demand.

MITCHELL MOTORS COMPANY, Inc.
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TWO SIZES

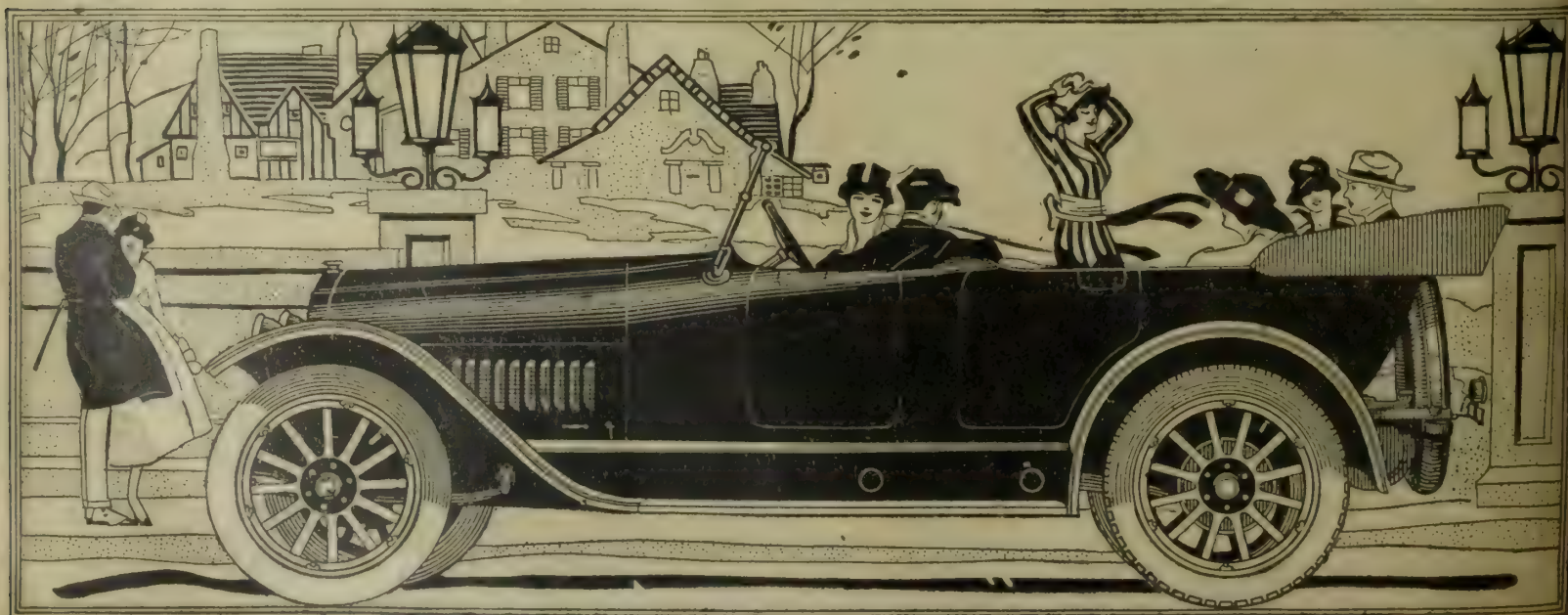
Mitchell—a roomy, 7-passenger Six, with 127-inch wheelbase and a highly-developed 48-horsepower motor.

Price \$1460, f. o. b. Racine

Mitchell Junior—a 5-passenger Six on similar lines with 120-inch wheelbase and a 40-horsepower motor— $\frac{1}{4}$ -inch smaller bore.

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Also six styles of enclosed and convertible bodies. Also new Club Roadster.



THE PACIFIC RURAL PRESS

SAN FRANCISCO

APRIL 14, 1917.

LOS ANGELES

We Must Relieve the Alarming World Food Shortage

The world's food crop is alarmingly deficient, according to David Lubin of the International Institute of Agriculture, who says that the grain supply of the world is 130,000,000 bushels less than the normal requirements of countries open for trade.

[Written for Pacific Rural Press.]



IN THE time of our country's need, when perhaps millions of men are withdrawn from productive work, it behooves those who are left to study how they may make the land produce its utmost. Not only is this a patriotic duty peculiarly devolving on the farmers of America and California, but it is also likely to prove our most profitable work. Systematic study in a national way of food production and distribution has revealed marvelous wastes in both.

Now, when the civilized world, one country after another, is finding its food supplies less than have been considered necessary for continued existence, it will be well if we of America, about to enter a world war, shall apply the most stringent economy in the use of labor and land, in

patriotic study in the other phases of the struggle, including production of adequate food and clothes.

Increase Acre Yields.—Let those who have been content with small yields per acre devise ways of getting larger yields. Better and more timely plowing and cultivation, intelligent fertilization, liming, drainage, and irrigation, more co-operation and care in harvesting, packing, and marketing the products to avoid waste—you can put on whichever of the above-named shoes fits you.

Labor is likely to be scarce and we will have to pay higher wages. The increased production and prices will take care of this; but timely labor will often be unavailable. Labor-saving devices must be studied, adapted to our conditions and obtained for intelligent, constant use.



All available ground should be used for food production, now that men are being withdrawn for the war. Labor-saving machinery should be obtained. In the case illustrated above, a pumping plant at the creek would permit growing much food between the trees if sufficient fertilizer is applied.

order that the bravery and blood of our sailors and soldiers shall not have been made vain through the wastefulness of those who remain at home.

Everywhere, already, the great industries of the country are shaping their courses toward a ready compliance with any requisition our Government shall need. It is well that it should be so, for the American Government is what insures to us whatever we have of peace and prosperity, freedom of religion and speech and press, and the liberty that was given to us through the blood of our fathers, to hold in sacred trust for our children and our children's children. The liberties insured to us by our government are not only worth laying down our lives to preserve for future generations, but they are worth our most intent and

These include tractors, gang plows, subsoilers, automobiles (for business), auto trucks, telephones, dynamite, machine ditch diggers, gas engines, electric motors, pumping plants, corn binders, huskers, shredders, silage cutters, hay machinery, etc. The more these can be used co-operatively by two or more farmers, the more economy will be found.

What Crops to Grow.—What crops will be most needed? What crops can still be put in? What crops now intended for one use can be reserved for better uses?

The armies will be using principally those foods in which the greatest amount of nutrients can be most easily transported and kept eatable. The people at home will need some of these, but can also use the more perishable products such as fruits and vegetables.

(Continued on page 477.)

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EDITORIALS

OUR PART IN THE WAR.

WE are in the war between representative self-government and non-representative tyranny which blasphemously invokes divine right to exalt the few upon the rights, earnings and proper aspirations of the many. It is not a conflict of persons, but of principles. The United States as a nation has adopted anew the Declaration of Independence of despotism which was its birth certificate. The Congress of the United States has overwhelmingly declared the fact and generously voted the money to pay for action based upon it. The President of the United States has proclaimed the fact, the duties which it imposes upon citizens, the purposes which it will serve in human progress, and has appealed for manifestation of whole-souled, devoted patriotism in pursuit of those purposes. It is the American occasion and opportunity to make world-wide the beneficence of liberty, equality and fraternity, which men and women from all parts of the earth have been bringing in their hearts for the up-building of this nation for the last three hundred years. It is, as we look upon it, the crucial moment in the history of the modern world. It is really the time when "old things are passed away; behold, all things are become new."

At such a time it is almost impossible for one who feels coursing within him the blood of generations of those who resolutely sought freedom and equal opportunity for all men, to refrain from using such access as is given him to the public ear for almost continuous declaration of the nobility of such purposes and interpretation of the successive events through which they will advance toward full realization in the coming months and years. But, for several reasons, such use of our columns is not the end toward which we are called especially to minister. This nation is afire with patriotic zeal born of full knowledge of the world-value of the principles which called it into being and have remained to this day the greatest promotive influence in its wonderful growth and development. In every community, from country cross-roads to metropolis, there are men and women whose knowledge and power of expression are as good or better than our own, and it will be for them to remind their hearers or readers of their patriotic duties and opportunities and to interpret for them the significance of passing events of a general character. Therefore, such a task, delightful as it would be to see our ink flow in such channels, does not rest upon us, and we shall not undertake to gather for our readers news of the events of the war nor attempt to elucidate such events in their broader aspects and their relations to the great ends to be attained. Such work belongs to journals of general news and generalized public opinion. Ours is a special field and not less important because it is narrow, for it is fundamental and underlying all other fields and the activities pursued upon them. While then the war is being fought on wave or plain by those whose blood is thicker than ours, and being fought on paper by others

whose blood may be just as thin but faster-flowing than ours, it will be for us to pursue more zealously and pointedly we hope than hitherto, the truth about how to do American farming with success to the men and women who give their lives to it and with fullness and strength to the support of the nation and to the achievement of the task for humanity upon which it is now bravely entering.

THE AMERICAN WAY.

OUT of the responsiveness of the soil and the capacity of the great areas of it never tainted with feudality; out of the spirit, ambitions and opportunities of a people which has seen large from the beginning; out of the open-eyed vision for science, always measured for industry by the applicability of it to practical operations; out of thrift and frugality which were characteristic of these people who saw large and saw true before there was a body of assorted knowledge called economics; there has come an attitude toward farming as a business, and a mastery of capacious, efficient and unique methods in pursuit of it, which are recognized throughout the world as the "American way." Its policies, its implements and materials have accompanied its spirit to all newer parts of the world in which there has been an awakening to progressive agriculture. Its direct pertinence, its reasonableness and its capacity for production are displacing or modifying traditional farming methods in the most ancient countries. It has fixed the form and measured the extent of this nation's development and has disclosed such quality in this service that other nations, desiring to do new things in most efficient ways, are invoking its assistance. The other day Sir Arthur Lee, head of the newly-formed food production department of the British government, said:

"We intend to bring from America some two thousand tractor plows for night plowing. We need the skilled American farmers to supplement them. Five thousand skilled American farmers on English soil would go a long way toward combating Germany's plan to starve us into submission through her submarines. I have great respect for the ability of the American farmer. I have seen him at work and I know that everything he does spells efficiency. That is why we would like to have so many of him in the present crisis."

And if five thousand American farmers could thus strengthen England, what are five million of them doing for this country and what can they do for humanity, for equal rights and for democracy in the struggle upon which they are now entering? Much, beyond calculation, in all ways no doubt—for farmers are least inclined of all men to shirk duties and burdens—but in their own way, in their indispensable service, without which none would have strength either to fight or to flee, they will rise to their responsibility in the incomparable American way!

WHAT SHALL WE DO AT ONCE?

OBVIOUSLY everyone who has an atom of reserve power in food production should seek ways for its employment during the present growing season. One of our associates makes a number of pertinent suggestions upon the opening page of this issue. To well-read subscribers to whom these things are already known, let our discussion of them serve as a reminder. To newer and younger readers they may be more directly suggestive of things to be closely inquired into in the light of conditions which may render them wise or otherwise in individual cases. We are intending to enter very conservatively and discriminatingly into the hue and cry which is now afield, calling upon farmers to "grow more stuff"—because we are perfectly aware that the chances of losing are greater than the chances of gaining when one takes to plunging into cropping on the basis of a hue and cry. For example, there has been a large acreage of deciduous fruit trees set this winter with a considerable investment of money, for blasting, deep tillage, cost of trees and planting, etc., and the prime duty of the planter, in spite of all sensational exhortations, is to guard this investment and help the trees to justify it by this season's growth. It should be remembered that this season's rainfall is con-

siderably below the normal in most parts of the State and it will be a triumph of good farming to get the proper growth on young trees without irrigation. But the air is full of exhortations to planters to use this well-prepared land for inter-crops. Our advice to the planter is to do nothing of the kind—unless he knows perfectly well the moisture-retention of his soil and the requirement of the crop he inter-plants. If the planter is not absolutely sure what his land can do and what he himself can do to help it reach this optimum, he simply bolts into a game in which he may possibly net from nothing to ten dollars from the middles and lose fifty dollars in the tree-rows. And yet a lot of windy patriots are now urging him to do just that. And this is only one of several dangerous temptations into which the land owner may be led by popular clamor and greed of gain; as we say of one we say of all, watch out! Of course, if a man has moist land, or water from pump or ditch, and experience in handling the crop he takes his chance on, the conditions are very different. But the patriotic exhorters take little account of these things. They just yell out: "It is a sin to have land idle; fill it up with corn, sorghum, beans, etc., for the country will need them." They forget that we get practically no more rain for six months and that the trick is to keep the moisture now below, for such plants as it can properly carry through. They do not foresee that an inter-crop which only makes half-growth cannot repay the cost of putting it in; that lost in this worthless half-growth there are apt to be costly winter-planted trees dying of thirst in late summer and trouble later with the nurserymen because of claims that his trees were weak or worthless, when in fact they had no chance to grow. From all such perils of the ignorant or thoughtless, good Lord deliver us!

REALLY IDLE LAND SHOULD WORK.

OF course land already set for tree-growth is not idle and should not be so considered. With land which is really idle and, this year particularly, land which is idle because usually too wet and cold, much can be done at once and should be profitable if well done because prospective values promise to turn ordinarily poor chances of profit into good. It promises to be a great year for low moist lands and for counties which are usually more productive in years of moderate rainfall. There is really an extraordinary outlook for lands naturally over-wet. It is still early enough to rip up such lands with tractors and, where they do not carry too much alkali, to cover the ordinary blemishes of valleys with stretches of waving corn and sorghum and with beans which may find this year ample moisture for pods and not enough for too-late growing. Besides the large areas which will call for considerable capital to put into production invited by this peculiar season, there are many small patches of ground, either low on in hillside sags or dimples, which can be handled with ordinary teams and tools for summer crops of grains or forage, with advantage to the grower and for the general good. Of course most of our readers need no suggestions on this line and have already calculated or entered upon such chances. But there are others, rather new to diversifying crops, to whom suggestions will be helpful. It is along this line that our writers will proceed with such practical points as they have and can gather and we frankly make an appeal to the patriotism of our readers to lend their hands to such an effort. Many a man or woman who will not be able to raise an arm in our country's service, may greatly help the cause by writing the Pacific Rural Press a letter, stating any particular things they have successfully done with summer crops, describing the kind of land, the moisture available and the ways of planting and cultivation by which they turned land and moisture to good account by planting after the middle of April. Thousands of our readers have items of knowledge and experience along this line and general contribution of it through our columns will constitute a body of practical truth from which all can draw something which will be helpful in the effort they desire to make this season for both personal

and patriotic advantage. The general scolding and coaxing which are being dealt out to farmers from Eastern authorities, agricultural and governmental, have but little applicability in California, because they are largely misfits under our natural conditions. But we can collect practical wisdom from our own experience which will give our own people trustworthy information of what they can do profitably this summer with land and water.

LABOR COST PROBABLY A RULING FACTOR.

TWO weeks ago we indulged quite freely in comments on the requirements involved in increasing the acre-product of crops—claiming that notable change could only be made with cheap money, to be generously, but, of course, wisely, expended for better machinery, fertilization and other soil-betterments, adequate labor and assurance that all such extra investment would be more than repaid, through organizations for selling above cost. In this summer's problem these claims can be slightly redrawn because products are practically sure to sell themselves with ample profit to the grower who gets them while the war lasts. There may be chicanery of course, but the chances are that there will not be much manipulation against the grower this summer. The outlook therefore warrants wise expenditure for wells and pumps and for motor-driven, labor-saving machinery that water may be adequate and labor requirements reduced to a minimum. And that brings us to the suggestion that everyone considering extra cropping this summer look very carefully into the labor requirements of the crop he contemplates. Labor has been scarce and high priced; it will be worse in the immediate future,

at least. Not only is there an actual shortage and outlook for the farther reduction of it, but organization for wage-raising, which has been making considerable progress of late, will thrive under coming conditions. Organizers who not long ago were disposed to slam Asiatics as some kind of an inferior animal and the chief cause of their ill-luck, now look upon the Japanese as men and brethren and are seeking affiliation with them. We are not considering the questions involved in their general bearings, but wish to note the relation of the labor supply to all calculations of profit from extra cropping. Naturally the demand for such labor will coincide with the current urgent demand for labor, for practically all the proposed summer crops must be grown and harvested before frost comes. The farmer then who is figuring on putting in new land or new crops on old land, must carefully consider the labor requirements of each of such crops and not put in costs which a labor famine or too-high wages may make it impossible for him to recover from the land. If he has a crop which he can lash his teams or cough his tractor over, very well; but if he goes in for something for which he needs a gang of men for weeding, cultivating and harvesting he should be very sure he is not getting himself into a situation in which he may have to let the crop go or use the value of it to offset his pay roll.

We have been a long time getting into this unholy war, and probably none of us desire to get into it at all, but now that we are in it, it is up to the farmer to use his keenest insight and coolest judgment to be very sure he does not lay hold on the wrong end of it in his desire to do patriotic service.

seed can be broadcasted as heavily as two bushels to the acre and get a tall growth of slim stems which can be handled with a mowing machine and cured like coarse hay in our interior heat and dry air, but the land should be allowed to get a good dry surface before cutting. A second and third growth can be had from the stubble by irrigating after cutting. These growths are perfectly safe from stock poisoning if cured before feeding, but care has to be observed in feeding them green.

Beans in the San Joaquin.

To the Editor: What is the best time to plant beans? How close do I plant them? How often do they need irrigating? What kind is the best to plant?—R. A. C., Selma.

Beans are planted as soon as you are safe from frost—usually latter part of April or early part of May in your section—or a little later on cold land. Plant in drills or shallow furrows, 24 to 30 inches apart; dropping the beans two to four inches apart and covering about one and a half inches in medium loams and about twice as deep in sandy loams. Irrigation depends upon the soil and season's rainfall. Sometimes no irrigation is required, but the plants must be kept growing well until pods are set. After that they should not be encouraged to make too late growth by too much moisture. The varieties chiefly grown on the valley planes are blackeye, pink and teparies. Now that beans are in such sharp demand, teparies are selling better than at first.

Painting Trees Against Borers.

To the Editor: Will you give a good formula for painting trees for borers? I have used white lead, Paris green, and raw oil, but they seem to be able to get through it. How far under the ground would you paint the trunk? They are young trees, and I would like to keep them immune from the borers.—F. L., Voltaire.

We are not so much surprised that the borers "get through" as that the young trees do. We would not use an oil paint of any kind on young bark. Use a durable whitewash, such as is described on page 324 of our issue of March 17, putting on plenty of it down the stem to the root-forking and repeat, if necessary, to keep a good white color and prevent sun burn. We do not expect that the trees will be immune. Some borers will probably find a way in and the bark should be examined for dark spots, just above and below the ground surface, during late summer and early fall. Open such spots and punch to the end of the burrow with a thin, pliable wire, like a hair-pin.

Which Corn to Plant.

To the Editor: In growing corn for grain and not silage, which is the better—King Phillip Flint or Leaming Yellow Dent? Which bears the most ears to each plant, and if possible would like to know how large are they? My planter plants in hills, 3 grains 26 inches apart, and 4 grains 48 inches apart. Which would be best?—E. B. G., San Jose.

We have not the data for definite comparisons. It is our judgment that the common California preference for dent varieties is well based on superior size, yield, less suckering and California's long growing season. The exact size of ears, however, depends upon growing conditions and culture. Distance in planting should be determined on soil and moisture; closer planting, of course, for richer, moister soils. Set your planter according to the soil. We should expect more ears on the dent and would prefer it unless earliness is a matter of importance to you.

California Weather Record

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau at San Francisco for the week ending at 5 p. m., April 10, 1917:

STATIONS	Past Week	Rainfall Data		Temperature Data	
		To Date	Normal To Date	Max'm	Min'm
Eureka .....	.96	27.83	40.03	58	40
Red Bluff .....	.58	16.76	22.02	80	42
Sacramento .....	.04	12.25	17.62	78	40
San Francisco .....	.03	15.44	20.16	76	46
San Jose .....	.11	12.27	15.14	80	40
Fresno .....	.01	6.87	8.42	82	38
Independence					
San Luis Obispo ..	.01	22.42	18.35	86	36
Los Angeles .....	.26	14.85	14.35	84	46
San Diego .....	.02	8.78	9.05	80	50

By
the Editor

QUERIES AND REPLIES

Inquirer Must
Give Full Name
and Address

Sorghum Smut.

To the Editor: I planted Egyptian corn last year and there were several smutty heads scattered around in different parts of the field. If I plant the same field to the same kind of corn again this year, is it apt to be smutty again? The same field previously has always been cropped with small grains and has shown no smut at all. Does the smut come from the seed, the ground, or the weather? And would it affect field corn in the same way as Egyptian?—H. M. W., Wheatland.

Smutts of grains and grasses are caused by fungus plants which live as parasites upon the substance upon which they appear. Scientifically, there are different smut plants, but practically they are similar in form and operation. They all grow from very minute spores, which behave like seeds. These spores may come to the grain head from the ground or they may come with the seed or they may come from some distant place on the wings of the wind or of bird or bug. By whatever way they may come to the growing head of grain, they start to grow on the substance of the head (if growing conditions are right) and in building up their own substance they deform and destroy the substance into which they enter and produce myriads of spores to continue their species. They cannot be caused by the weather, though the character of weather often has much to do with their growth. Though the spore is so small that you cannot see a single one without a microscope, it is just as much the progenitor of the mass which you do see as a cocoon is the progenitor of a palm tree. The common smut of Indian corn is not the same as the smut of sorghum, but the chances of getting smut on Indian are usually better than of getting smutty Egyptian. The chance of a clean crop following is somewhat improved by cutting out and burning smutty heads as soon as you see them. What you get this year by replanting Egyptian cannot be prophesied exactly, but probably you will get no more than last year and you may get less or none that you will notice. Your infestation is certainly not bad.

Cruelty and Bird Killing.

To the Editor: Is there anything more cruel than trapping birds by means of holding them by

the feet to a limb of a tree until they starve and die? I refer to the article in the March 24th issue, "Tanglefoot for Birds."—Subscriber, Visalia.

It is surely very cruel. In the case of trapping or otherwise destroying marauding birds and animals, there is, however, to be alleged the promotion and protection of human interests, which often require cruelty. Besides, birds themselves are very cruel. The English sparrow destroys the eggs and young of other birds; the butcher bird impales large insects on thorns to die and become "gamey" for its own purposes, etc., etc. We dare not base an argument on this fact because our querist would reply that man, being endowed with moral sense, cannot be excused for cruelty because birds, which do not know better, are bad. There is, in fact, no use arguing about it. Inside the laws for the protection of animal life which represent, perhaps, the general human sentiment on the question, every one has to do as his own conscience dictates in sacrificing inferior lives when they interfere with his human duty to provide for his family and to do his share in feeding mankind.

Another point, of course, is that trapping or poisoning birds, destroys innocent and guilty alike. From that point of view we are more disposed to agree with our correspondent's condemnation of the tanglefoot method.

Sorghum Hay.

To the Editor: What variety of sorghum should I plant in this locality for cow feed? Also can sorghum be successfully sown broadcast and cured for hay? I have plenty of water for irrigation. What time and how much should I plant?—Subscriber, Pixley.

People and localities do not yet agree on just which sorghum is best for them. So far, growers are naturally apt to favor this and denounce that, according as one or the other gets more moisture or better culture. There has not yet been widespread, comparative test, under similar conditions, to demonstrate the matter. All of the sorghums, saccharine and otherwise, have been successfully grown for hay both in the South and in California, and they are grown in rows, in drills and broadcast. With ample moisture on good land the

The Laboratory as an Adjunct to the Farm

[Written for Pacific Rural Press by Miss Margaret Honeywell.]

HOW to reduce the high cost of living, how to make a good jelly when the weather is cool and sugar is cheap, how to guard against ptomaine poisoning, and how to best use the by-products of the farm—all these interesting problems and many others are being worked out under the direction of Professor Wm. V. Cruess of the University of California. This institution is conducting an experiment and research laboratory at its Berkeley location for the benefit of the farmer's household, and to further scientific and commercial ends. Questions concerning special processes are received from all over our State, the neighboring States, and from far-off Florida and Canada. These questions are cheerfully answered when possible, and special experimentation is entered upon to solve special problems arising.

A series of experiments on the pickling of olives has engaged the attention of the department lately, because of the widespread demand for a satisfactory method adapted to home use. Matters of more immediate interest to the housewife which have been worked on recently are the proper care of fruit juices, jellies and jelly stocks, candied fruits, fig preserves, canning of vegetables, of fruit and of meat, olive pickling, and the making of vinegar from cull apples.

Purposes of the Laboratory Work.

The aim of the department in carrying on this work is to establish a laboratory which will help the farmer in profitably solving the problem of disposing of his waste grapes, apples, citrus fruits, and the by-products of the canneries. On the average farm there are small miscellaneous plantings of fruit trees and berry bushes for home use. There is in these cases not enough fruit to market in the regular way, and yet more than can be consumed by the farmer's family. Every member of the household is busy at the ripening period, and much deplorable waste results. The culls, fallen fruit, fruit too ripe to ship, but in prime condition for immediate use—all this can be utilized. The means of saving this hitherto wasted food-stuff has been discovered and formulated by this wonder-working laboratory. The work here outlined is divided into several fields:

Teaching.—A laboratory course, which is not highly technical, but very practical under farm conditions. This course deals with farm products and the means of utilizing them all to the best advantage. The value of this course is not yet fully realized by all attending students. Many Japanese, however, are highly interested and enthusiastic students—mainly for the sake of Japan, their native country, where the large population and relatively small area of productive land make the fullest use of the harvest necessary.

Research Work.—This is carried on for the solution of special problems. One student, a Japanese, especially interested in rice, has discovered a method of hydrating that cereal so that it will cook in two or

three minutes, and when so cooked will be beautifully white and dry, with each individual kernel standing out separately from its neighbor. This process is to be patented before being made public.

Investigation of Fruit Products.—This comprehends efforts to discover the principles underlying the processes, and then standardizing them for use in the household and for commercial exploitation.

Correspondence.—As mentioned before, letters are received from all over California, the adjoining States, Florida and Canada, asking questions or soliciting recipes. These questions cover all sorts of appropriate subjects, and are answered forthwith, or made the subject-matter of experimentation.

Canning Beans and Other Vegetables.—Select young, tender beans; the smaller and more tender the pods, the better. String if necessary. Place in a wire basket or cloth bag and immerse in boiling water for two to five minutes. Remove from basket or bag and allow to cool. Pack into glass jars. Prepare a brine consisting of 6 ounces of lemon juice, 3 ounces of salt and 1 gallon of water. Fill the jars of beans with this brine. Place covers on jars loosely. Make a sterilizer from a wash boiler by placing a piece of heavy wire screen or a wooden grating to fit on the bottom of the boiler. This protects the jars from the direct heat of the fire. Place the jars of beans (covers on loosely) in the boiler on the false

so well as the pomelo. Cut the fruit in half, squeeze out the juice and strain. Add sugar to taste. Heat the juice to 185° Fah. in an agate-ware or aluminum kettle. Pour the juice into bottles, filling them full. Cork immediately with corks previously sterilized in boiling water. Tie the corks down with string. It is essential that no air space be left in the bottle below the cork, else the color and flavor of the juice will deteriorate. Heat a large pot of water to 175° Fah. and immerse bottles of hot pomelo juice in the water. Leave them for 10 or 15 minutes at 175°. When removed, the corks should be sealed with paraffine or sealing wax. This makes an appetizing "before-breakfast" drink, and also is suitable for



Student Examining Fruit for Bacteria in Laboratory, University of California.

The laboratory does not undertake extension work, being hampered for lack of time, and for the further reason that Miss Clark and Mrs. Fowler of the University Extension Department cover this field.

Work Already Accomplished.

This department works in conjunction with other departments and experiments on current problems. For instance, the State Board of Health has been working on ptomaine poisoning, its causes, etc. The laboratory has discovered that in the country this results oftentimes from improper canning in the home. The old methods of heating to boiling, and then putting the vegetable in cans, does not destroy the bacteria, but seems, rather, conducive to growth. Work was begun at once to find a new recipe that would be entirely safe. The discovery was made that a small amount of lemon juice, sterilizing the vegetable for two hours in the can, and then cooking the vegetable before using it, eliminated danger of poisoning. Inasmuch as this question is of paramount value and the recipe easily followed, it is worth knowing, and so is here reproduced:

Put in enough water in the boiler to come half way up the sides of the jars. Place cover on the boiler. Heat water to boiling and boil two hours. Remove cover from boiler at once and screw or clamp down the covers of the jars immediately, while the brine is still boiling hot. Remove the jars; turn them upside down on a table to circumstances omit the lemon juice in the above formula. If it is not used there is serious danger of ptomaine poisoning. Never use any canned vegetable with a bad odor. Always cook canned vegetables before using; there will then be no danger of poisoning.

Details for cooking other vegetables similarly will be found in Circular 158, which the department will furnish.

Unfermented Pomelo Juice.—For communities interested in citrus products there have been worked out numerous recipes for marmalade, candied peel, etc. But one of the most interesting recipes, giving something different, is that for unfermented pomelo (grape fruit) juice. The same method may be applied to orange or lemon juice, but these do not retain their flavor

punches of various kinds. A chemical thermometer is best to determine the temperature, although a good dairy thermometer will answer.

Apple and Other Jelly Stocks.—Very often it is inconvenient to make up jelly when the fruit is in season. It is perfectly feasible, however, to extract the juice from the fruit, sterilize it in bottles and keep it until it is desired to make the material into jelly. Fruit juice may be made into jelly very successfully if the following directions are followed:

Crush or slice the fruit and cover with a small amount of water. Boil apples 15 or 20 minutes, berries 3 or 4 minutes, and citrus fruits about one hour. Add water to the material and keep the fruit covered. Suitable fruits are apples, currants, loganberries, cranberries, blackberries, lemons, and oranges, mixed in the proportion of two oranges to one lemon, or pomelos and lemons mixed in the proportion of two pomelos to one lemon; or quinces and apples mixed in the ratio of one quince to one good-sized apple. Other fruits do not contain enough

(Continued on page 471.)

Fruit Crops in Good Condition.

[Written for Pacific Rural Press.]

The Monthly Crop Report, compiled by Geo. P. Weldon, Chief Deputy State Horticultural Commissioner, from reports submitted by County Horticultural Commissioners April 1, which include forty of the counties of California, show almost a full crop of all fruits excepting apricots and almonds. Fresno, Santa Clara, Sonoma and San Benito counties did not report.

Apricots seem to have suffered more than any other tree crop. Almonds were also nipped by the frost of March, although not so severely as apricots. Of the counties producing a large percentage of the almonds, Contra Costa reports a 50 per cent crop; Yolo, 65 per cent; Sutter, 85 per cent; Sacramento, 90 per cent; Butte, Colusa and San Joaquin, 100 per cent. These counties report 77 per cent of the entire crop of the State. The following counties produce 81 per cent of the apricot output and the reports vary from 30 per cent to a full crop: Alameda, 75 per cent; Kings, 60 per cent; Los Angeles, 30 per cent; Orange, 100 per cent; Riverside, 50 per cent; San Benito (no report); San Bernardino, 95 per cent; Santa Clara (no report); Ventura, 70 per cent; Yolo, 50 per cent.

Mr. Weldon has wisely confined his report on crop prospects to those crops where there were some prospects when the report was made. The reports on crop conditions, however, are also interesting if not taken to mean that such crops are assured. The almost universal report of 100 per cent on apples means simply that enough fruit buds for a normal crop had been made and had not yet been injured. The reports from Humboldt of 90 per cent, Napa 90, and San Luis Obispo 80, indicate damage already done to the relatively small number of apples grown there. The 75 per cent on berries in Monterey and Santa Cruz counties may mean reduced acreage as well as damage by cold weather. Cherries had been hurt in Humboldt, Riverside and Shasta counties, Riverside reporting only half a crop possible, as observed late in March. Fig and grape fruit trees were in normal condition everywhere. Lemons were reported in a condition below normal in Los Angeles, Yuba, San Diego and Ventura counties, where most of the lemons are grown. The condition of olive trees and fruit wood was normal everywhere except in Los Angeles. Oranges were reported already below normal in Riverside and Los Angeles counties. Peaches had been hurt in the lighter producing counties and also in Tulare and Kings. No damage had come to pears, whose fruit buds were in good shape. Plums had been hurt in several small-producing counties, and were reported 90 per cent in Sacramento and Tulare. In Placer, other parties report that a freeze March 31 killed 60 to 65 per cent of fruit in Loomis district, 20 per cent at Penryn on the lower land and in the Newcastle-Lincoln district. Tulare prunes were injured, Napa prunes still in shape, the other higher-producing counties did not report, but the conditions are good.

Only one very small-producing county reported any damage to walnuts.

CHERRY GUMMOSIS.

[Written for Pacific Rural Press.]

Cherry trees afflicted with bacterial gummosis to serious extent will be showing the results very soon. The disease has worked through winter and in some cases has girdled the trunk or large limbs. These will die when their stored-up moisture and food are gone. There may not be much gum, or it may break out from the bark at considerable distance from the point of infection. The disease does not progress much in summer time; and, if found, should be thoroughly cut out some inches beyond the edge of apparently diseased bark. When this has been done, trim off the edges smooth to make healing easy and disinfect the entire wound and tool with corrosive sublimate, one part to 1000 of water. The tree thus treated this spring will have good chance to resist the disease next winter.

NEW WHITE PEACH.

[Written for Pacific Rural Press.]

A new white freestone peach has been produced by Joseph Rossie of Inyo County, who says it is a cross between the Strawberry and the little-known "Sunland Queen." The "White Prince," as the new variety is called, grows very large, some of last year's crop measuring almost four inches in diameter. The flesh is pure white, firm, and fine grained.

White peaches must necessarily compete with yellow ones, in favor of which there is a pretty strong feeling among consumers because the best known varieties are yellow.

Mr. Grape-Grower

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Fertilizers Used by Peaches and Apples.

[Written for Pacific Rural Press.]

More plant food is required for a 500-bushel crop of peaches than for the same crop of apples or a 50-bushel crop of corn, according to experiments at the Arkansas Experiment Station, covering nine years from planting of the trees. The apples produced 3,675 pounds dry matter per acre; peaches 3,500 pounds, and corn 2,503. The apples used 6.61 pounds phosphoric acid in the crop; peaches 11.90 pounds, and corn 19.88. The apples used 13.45 pounds nitrogen in the crop; peaches 22.30, and corn 46.20. The apples used 43.05 pounds potash in the crop; peaches 59.50, and corn 15.96. The 500 bushel apple crop used a total of 63.11 pounds of the three plant foods; the peach crop 93.7 pounds, and the 50-bushel crop of corn 83.04. In the trees themselves, and their leaves, bark, etc., the peach trees retained at the end of the ninth growing season 27.67 pounds phosphoric acid, 87.97 pounds nitrogen, and 60.18 pounds potash per 100 trees per acre. The apple trees (planted 40 per acre) retained 6.73 pounds phosphoric acid, 15.26 pounds nitrogen, and 14.25 pounds potash. The peach trees had used and returned to the soil as leaves, prunings, etc., about double what they retained. The apple trees had returned less than they retained.

If in the nine years the peaches yielded 1500 bushels per acre, they took from the soil a total of 63.37 pounds phosphoric acid, 154.87 pounds nitrogen, and 238.68 pounds

potash per acre. Whatever of these elements were in the ground when the trees were planted and whatever had been applied later, over and above what the trees and crops took from the soil, had been leached away, evaporated, or still remained in the ground available or unavailable.

The apple trees, if they bore 1500 bushels per acre during the nine years, took from the soil 26.56 pounds phosphoric acid, 55.61 pounds nitrogen, and 156.27 pounds potash. All excess of these amounts originally in the soil or applied later, was not yet used by the trees.

Nine 50-bushel crops of corn, if the stalks were returned to the soil, would have taken 178.92 pounds phosphoric acid, 41.58 pounds nitrogen, and 143.64 pounds potash. It is scarcely fair to compare the corn with the fruits without having actual yields of the fruits rather than assumed total yields, but the figures on which the above calculations are based lead the experiment station to conclude that apple production exhausts the soil much less than corn or grain. In presence of sufficient moisture and other conditions suitable for fruit culture, 8 or 10 tons of barnyard manure applied per acre every three years, followed by green manure crops and proper tillage, is considered sufficient. Meanwhile, in the use of commercial fertilizers much less would be needed if they were kept available to the trees and not leached away.

Give Almonds Moisture, but Not Too Much

[Written for Pacific Rural Press.]

"Too many growers are inclined to use too much irrigation after planting, and little or no cultivation," says P. D. Bane, veteran almond grower of Glenn county. "The almond root requires less moisture than any other tree root; consequently it takes less to kill it. Water used at the proper time and in the proper amount is of much value. Good cultivation will bring better results than too much irrigation. I would recommend at least two or three cultivations per irrigation."

Yet even an almond cannot send roots where there is no water, and the subsoil ought to be kept moist from winter through summer by always getting the irrigation water down to the moist subsoil as quickly as possible, to avoid keeping the up-

per ground soaked a long time. J. T. Caldwell of San Joaquin county found almond roots 14 feet below the surface; and experiments indicate that they go much deeper if there is moisture and no hard pan. By every foot that the roots extend downward they open to use new stores of fertility. This is much cheaper than to buy fertilizers and keep working them in top soil, where roots cannot exist on account of cultivations and periodic drying. Mr. Caldwell's orchard is on sandy loam, 14 to 16 feet deep, underlaid by clay or shaly hard pan. He irrigated by a double furrow down the center between trees, not caring for the water to soak much sideways until it had gone deep below the surface, in order to make the roots go down.

Sandy Subsoil Reduced Apricot Yield.

[Written for Pacific Rural Press.]

Knowing your water-table often explains why fruit buds cannot set and mature fruit, or are not made at all. J. W. Murphy of Tulare county is one who will adapt his irrigation intelligently to the conditions. In the center of his 10-acre Tilton apricot orchard are 240 trees, on rather cementy, decomposed granite soil four feet deep over a subsoil of pure sand. There is plenty of subirrigated moisture in the soil all spring and summer until late July and August, when the ditch water gets scant. Then the trees on

this spot dry up and lose their leaves two weeks earlier than the rest. They try to make fruit buds in extravagant numbers, but are so dry that the buds later "fall off like hail." This 240 trees yielded about a ton of fruit, while the rest of the orchard yielded five or six tons. There would have been still less fruit had not the orchard been spring-toothed four or five times to help save moisture. The remedy is to irrigate this spot in August and September, while the fruit buds are forming and developing.

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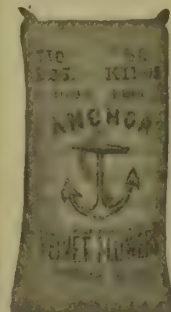
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Apple Culture Affects Fruit

[Data by J. P. Stewart, Pennsylvania, in Experiment Station Record.]

The experiments involved a comparative test of mulch, sod, tillage, and cover crop treatments, both with and without fertilizers in bearing apple orchards in 1907-1915.

Summing up the results thus far obtained it is found that the mulch treatment reinforced by outside materials has been most efficient in improving the yield, growth and average size of the fruit in orchards up to about 20 years of age. It has also been most efficient in conserving moisture in all cases that have been determined. For orchards over 20 years of age tillage and cover crops slightly surpassed the mulch treatment, unless it was accompanied by adequate fertilization.

The sod treatment has usually given the lowest results in yield, growth and average size of fruit in orchards of all ages, except when aided by special conditions. On the other hand, it has excelled in color of fruit and in freedom from blight. Fertilized sod plats have generally given better results than unfertilized plats receiving a mulch or tillage. Both the sod and the mulch treatments require thorough protection against mice.

Tillage has generally done best in the fully matured orchards, where it is especially efficient in stimulating growth. Tillage has done well in the younger orchards when accompanied by proper fertilization. The experiments with tillage as a whole indicate that plowing deeper than four inches is probably undesirable and that most of the cultivation should be done with disk harrows, or similar shallow-working cultivators, rather than the plow. Cover crops have not proved especially beneficial unless the moisture supply was unusually good or the amount of food added was extra large.

In most of the experiments there has been a very close correlation between growth and bearing, except in the older orchards, when it is often possible to secure more growth than is necessary to maintain the best yields.

Two of the experiments indicate that annual crops may be maintained by such biennial bearers as Baldwin and Spy in the presence of ample food and moisture supply, by regulation of the yield in any year to prevent overbearing and by preventing injury to the root systems.

In some cases there has been a very marked correlation between the amount of fire blight and the rate of growth. The greatest damage has occurred uniformly on the trees making the most growth. In view of the fact that weakly growing trees have also been attacked, it appears that it is the intermediate growth that is most resistant to this disease.

Color.—Red colors in apples are developed primarily by sunlight in the later stages of maturity. Hence conditions favoring either of these factors, such as late picking, open pruning, long growing season, sparse foliage, fully developed fruit, light soils, or sod culture, will increase this color, while all opposing conditions will decrease it. By a proper utilization of one or more of these conditions it is believed that the customary harmful effects on color of heavy tillage or too much nitrogenous fertilizer may generally be overcome.

The size of the fruit is determined chiefly by the moisture supply, hence the cultural methods that conserve moisture most efficiently will normally produce the largest fruit. Other influences of importance are the number of fruits on the tree, supply of plant food, and the temperature and length of the growing season.

The Laboratory as an Adjunct to the Farm

(Continued from page 468.)

pectin (or jelly-making material) for the purpose, and must, therefore, be blended with equal quantities of apples, loganberries, or currants; for example, strawberries, apples, and currants used in equal quantities will make a good jelly stock; or loganberries, apples and strawberries in equal quantities; or apricots, figs and apples, one part of each. Various combinations can be made to suit the fancy of the maker of the jelly stock. Press out the juice from the hot fruit and strain it until thoroughly clear.

To test the stock, place one glass of juice and one glass of sugar in a small pot and boil until the liquid will sheet from a spoon freely, as in ordinary jelly-making. Pour the jelly into a glass and note if it becomes firm or not in a few hours. This is to make sure that the jelly stock contains enough pectin and acid to make a satisfactory jelly so that you will be certain that the material you are bottling will give satisfactory results. The jelly test made in this way should give a firm jelly within six or seven hours. If it does not "jell" satisfactorily, it should be boiled down until it gives a jelly.

Then proceed: Scald jars. Place the juice in a pot and heat to boiling. Pour it boiling hot into the jars and seal hot.

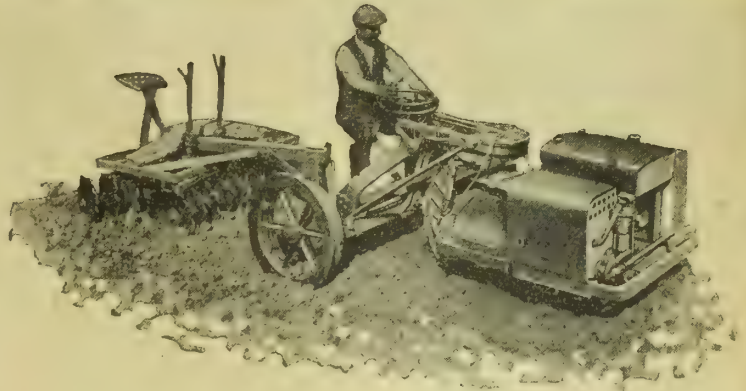
To Use Jelly Stock.—Whenever it is desired to make jelly from this fruit juice, merely take one part of juice to one part of sugar. Mix in a pot and boil down until the liquid sheets freely from a spoon or until it will boil at 221° Fah. Pour the jelly into glasses in the usual way. Jelly stock thus prepared has been kept in the laboratory for over a year, and has made very satisfactory jelly. It obviates the necessity of having a large number of jars, and allows the housewife to take advantage of the low prices of sugar after the season is over and to have freshly-made jelly for special occasions. It also distributes the cost of jelly-making over the entire year, and in this way makes the cost of the jelly seem less burdensome. Labor is conserved and material is used which might otherwise be wasted.

Thus the primary aim of the laboratory, to help solve the problem of utilizing the by-products on the farm, is in process of accomplishment.

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Fruit Markets Spoiled by Poor Quality.

[Written for Pacific Rural Press.]

The above head does not refer to last season, but to the season before. The reasons for that "season of very low prices for California fresh deciduous fruits" may well be taken as a warning even in these times of abnormal demand. Fresh fruit shipping will begin within a month; and now is none too soon to be preparing to pack our fruit right. Bills in the Legislature likely to become laws will also require stricter fruit packing. The author of the article below is an authority of many years' successful experience in growing and shipping California fruit to Eastern markets, a consistent fighter for honest packs, held in greatest respect by all who know him. His long experience leads him to think not only in detail, but also in broad terms of permanence for our fresh fruit markets:

"First and foremost, the quality of California fruit shipped east during the first part of the season was exceedingly poor; very much below average quality, and it killed the Eastern markets, and would have killed the Eastern markets under any conditions.

Inedible Fruit Shipped.—"The 'five weeks of rain in May' retarded normal development of peaches and plums; incidentally during that time ruined the entire crop of strawberries in the shipping districts, and a large part of the cherry crop. When those late rains ceased, June weather was warm and normal, resulting in early plums, such as Clyman, Red June, and Climax, ripening up more or less quickly, but before they had sugared or matured properly. Those three varieties, this season, were hardly edible. I saw Climax, which were packed for Eastern shipment, and held here until they had turned red all over, which had no flavor whatever—in fact, could hardly be eaten. This same thing applies also to Triumph peaches.

"One district started these shipments very early and sent a large quantity of that trash into the auction markets, which sold, after the first few cars, for almost nothing. Another district followed in due course with more trash, though I believe a little less 'trashy'.

Should Have Thinned Fruit.—"Another cause of the inferior quality of these early varieties was the excessive crop; and growers all over this county did not thin properly. Even our own orchards, under the direct supervision of our orchard superintendent, should have had two-thirds of the fruit thinned off, but it was not properly done; and that applies to the whole district up here.

"Before the California shippers had discovered the effects on Eastern markets, the damage had been done.

"By the time Santa Rosas, Placer County Burbanks, etc., were ready to move, Californians had discovered the real conditions, and, at least from this county, greatly improved the pack. Shippers set higher standards; and, when buying, set prices according to quality, with the result that the last half of the season,

quality has been very fine.

Proper Care Made Profits.—"From all I can hear, shippers and growers alike have all learned a bitter lesson, and it is driven home to them by the exceptions to the rule. By this I mean that we have a few growers who did thin their fruit properly, and who did wait until the stuff was actually edible, well colored and matured, before packing—the fruit from these few people, showing up for itself in the boxes, being fine size, etc.

"Even in the midst of gluts and slumps, when fruit was hardly paying freight charges, these few bright lights showed up with normal prices and they have made money where others have lost.

Eastern Competition.—"Another big contributing cause to low prices this season, as you know, is the enormous competition from home-grown fruit in every district of the United States and Canada. I have found many growers who have no conception of the thousands of carloads of peaches offered for sale in the United States this season, to date.

Must Leave Poor Stuff at Home.—"Quality of California fruit is the prime requisite for success. William Sproule said, 'California is the champion long-distance shipper of the world'. I always have been convinced that we should leave our poor stuff at home. But this year I have clinched that conviction.

"If all the growers this year had properly thinned their crops, and shipped East only fruit that was really matured and sized up, so that it would attract the trade, both from its intrinsic value as food and from its appearance, there would be much more money in circulation here as a result of the sales, and we would not hear so much of disaster. Now I claim to know that it is possible to raise high-class fruit in the California shipping districts; and that growing inferior fruit is nothing but suicide."

PREPARE FOR FRUIT THINNING.

Very soon it will be time to thin peaches and apricots. F. F. Ebert of San Diego county proposes to wait until a heavy crop is safely set, then cut out the slender fruit wood, leaving the most vigorous. The fruit on this will have to be thinned by hand just as the pits begin to harden.

SPLIT ORANGES REDUCED.

[Written for Pacific Rural Press.]

Reduction of the number of split oranges is credited by Adolph Butze of Tulare county to the even supply of moisture given his trees, in connection with a straw mulch put on the ground in June and July.

"I think there were not over four splits per tree out of their crop averaging five hundred oranges per tree," says he, though neighbors have a much larger percentage.

"Many folks allow five or six weeks between irrigations and then give lots of water. I think that causes the splits which we find, especially in August and September."

Mr. Butze uses 35 inches of water ten days per irrigation on twenty acres. He waits only twenty days between irrigations; and less in July, August and September. On

a ten-acre piece he turns the water into 116 furrows at once, allowing it to soak deeply and slow. The soil is a tight red clay, which dries and bakes easily.



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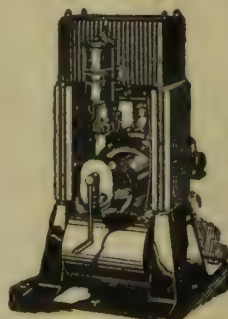
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NURSERY DEPT., SAN DIMAS, CAL. W. B. AMES, Pres. O. W. AMES, Sec'y.

Quick Sulphuring for Grape Mildew.

To the Editor: It was with interest that I read the article on "Grape Mildew Annihilated." It seems to me that Mr. Schleuter worked too hard. I always consider sulphuring my five acres of vines a "before breakfast job." It takes me two hours to apply each of the first two treatments, and three hours after the shoots have grown out. My vineyard is trellised, which makes two-thirds more work than with staked vines.

The difference between his and my experience lies in the machine used. I just know from his letter that he used one of those dinky little Italian machines. They give about one and one-half pints of air at a puff, which necessitates sticking the tube into the vine in order to get the sulphur there.

I have had twenty-four years' experience in vineyard culture, and have employed every method used for applying sulphur. I believe that it pays the farmer, as well as any business man or manufacturer, to discard his old machinery and buy new, improved types. It enables him to do his work quicker, easier, better, and at less expense.

It is of the utmost importance to be able to sulphur quickly when the need arises. Ill timed applications of sulphur are responsible for a very large percentage of crop failures due to mildew. After the sprouts are out three inches it is time for the first treatment, and one must begin to watch the weather. When two weeks have passed, it will be time for another treatment.

Suppose, on looking around the horizon a week or two after your first sulphuring, you see the old familiar signs which mean a change for cool or foul weather. This, you can then know, is perhaps your last day of warm weather for who knows how long. If you can get the sulphur on before noon, the warm air and sun in the afternoon will vaporize the sulphur, and clean up your vineyard before the spell of cool weather, when it would be useless to put out sulphur. Hence the necessity for a machine that will do your work quickly.

I have used all makes of sulphur machines in my vineyard, trying always to find one that was satisfactory. Last spring I got hold of one of the new American Beauty sprayers, and it is absolutely satisfactory in every way. I can sulphur thoroughly a staked vine at one stroke. I do not use a spreader; just take a shot at the vine and let the leaves spread it in forty-seven directions. I attribute the success of this machine to its large bellows and perfect feeder.

Reedley.

Chas. E. Dailey.

Well Intercropped Orchard.

[Written for Pacific Rural Press.]

Making a small piece of land yield as much gross as a large piece costs more per acre but is likely to total more money in your pocket and less in that of the man to whom you would be paying interest on the larger acreage.

L. M. Hartwick and his partner, Mr. Boulanger, set out about three

and a half acres of walnuts and one and a half of blackcap raspberries in the Van Nuys colony and piped water to it for irrigation from standpipes.

The walnuts were planted about 50 feet apart and the land had to produce something to pay for water and interest. Potatoes yielded ten sacks, onions yielded over three tons, sweet potatoes were planted on ten ridges in one center, Persian and other melons and squashes yielded luxuriantly, strawberries in several centers did well on ten flat rows per center, and a few yellow raspberries and Eastern slip-skin grapes were tucked in.

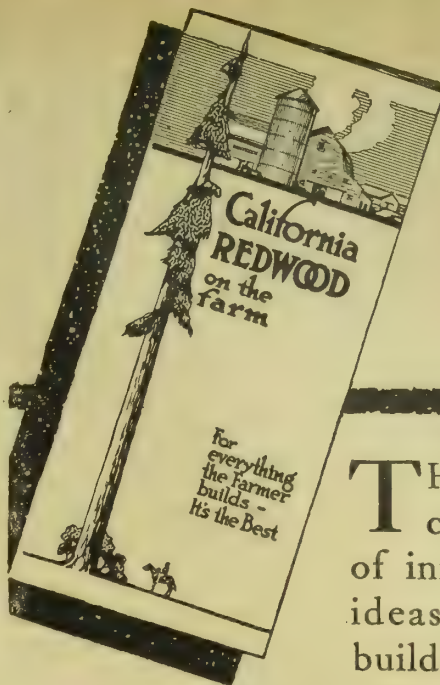
DON'T ALLOW PRUNES TO LACK WATER.

If a prune orchard dries out in April or May so the fruit suffers, irrigation in June will crack the fruit to pieces, said Mrs. E. McLeod, who lived many years among her Santa Clara prune trees and attended them like children. June watering is all right if the ground has been kept moist.

A winter so dry as the last one is likely to leave the "ground moisture" separated from the surface winter moisture by a layer of dry dirt which ought to be wet by early spring irrigations. The only way to know that the "surface" and "ground moisture" have met is by use of a soil auger or shovel.

SPRAY RED SPIDERS EARLY.

Dry sulphur for red spider on peach trees will work fine if put on as soon as the spiders come; but it doesn't work so well on old spiders (and brown mites) says John Armstrong of Fresno county. He uses a horse power blower to be sure the sulphur gets there with less work and better guidance.



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Corn Binder Hastens Ripening Corn

"How to get Indian corn ripe 15 to 20 days earlier and to make a very large percentage of it marketable without being put into the crib at all, is a matter of machinery," said G. R. McLeod of the Sperry Flour Co. at their Corn Day program March 31.

"Last fall, when the ripest corn in a field near Stockton was commencing to get hard and of as deep color as when thoroughly ripe, some of the greenest stalks in the field, the ears of which were just beginning to glaze, were cut and bundled and placed in an open lot to mature. After 25 days, this corn grain was more mature than the ripest of that left standing in the field.

"One of the greatest troubles we have had," said Mr. McLeod, "is that corn delivered in the early part of the season arrives at the mill with a moisture content ranging from 16 to 22 per cent." (E. J. Luke, manager of the Sperry Co., had already pointed out that 15 per cent is about as much as corn can contain without spoiling, and that his company pays on a basis of 15 per cent, deducting from the price if moisture content is higher, and adding to the price if lower).



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"If the grower allows his corn to stand on the stalk and can market a small proportion of it late in November with 16 to 22 per cent moisture, by harvesting with a corn binder, when the kernels are glazing, he ought to be able to market a large proportion with 15 per cent moisture two weeks earlier.

"The best market would be at the latter end of the old crop in the East, which would be in October, November and December. If you are able to market your corn at this time, you are going to get high prices and do away with a great deal of cribbing and the interest on your investment from that time on.

"A gentleman of Black Station had quite a patch of corn just beginning to glaze late in September or the first of October. It was about 14 feet high and the ears on the corn were completely shaded. He cut the corn when it was in heavy glaze and shocked it. That corn you have seen running through the husker and shredder today (March 31), you see that it is fully matured and has a better color than some of the corn harvested the other way. This corn was planted about the last of June and would not have matured at all if it had not been harvested with a corn binder. Early planted corn begins to glaze pretty well about the middle of September in the Delta and could be cut then."

Tomato Beetles Conquered

[Written for Pacific Rural Press by W. S. Booth, Mountain View.]

Last year I planted a few acres of tomato plants. A week later I found a third of them dead or badly damaged, some by the small darkling ground beetles, Eurymetopon bicolor, which attacks them just below the ground, but mainly by the flea beetles, which eat the leaves, leaving only half a skeleton. For description of these see "Insects of California," published by State Horticultural Commission, Sacramento. This and a pamphlet by the Bean Spray Pump Co. recommended neutral arsenate of lead. I obtained a pound of it and mixed a portion with water at the rate of one pound to thirty gallons of water. I would recommend mixing about ten gallons at a time to keep the solution clean. This amount would be enough for about 3,000 plants. Frequent stirring is necessary, as lead arsenate does not dissolve much better than fine sand. Taking thirty to fifty plants in a bunch, I dipped the tops clear to the roots in the solution just before taking them to the field. Following this treatment, I did not lose one-half of one per cent of my plants from insects, while a Japanese who had several acres near by had to replant more than one-half of his ground because of the small darkling ground beetle.

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placed anywhere, attracts and kills all flies. Neat, clean, ornamental, convenient, cheap. Lasts all season. Made of metal, can't spill or tip over; will not soil or injure anything. Guaranteed effective. Sold by dealers, or 6 sent by express prepaid for \$1.

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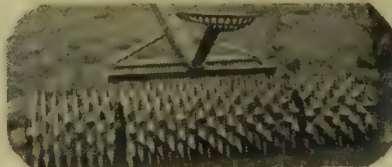
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Chilean Nitrate Propaganda
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MELILOTUS FOR RICE LAND.

To the Editor: We wish to determine the practicability of growing Melilotus on adobe soils, well drained. (Rice stubble). We have obtained seed of both the M. alba and the M. officinalis in sufficient quantity for limited experiments. We have grown M. indica on very heavy rice soils in the tropics, but we know nothing about its behavior in the Sacramento valley. Will you give a very brief synopsis of commonly known facts regarding the sweet clover in California, particularly as to the proper season for planting and seed production. A big problem in rice culture is finding a satisfactory legume for culture during the season when rice land is laid over.—H. O. J., Butte City.

If you want a winter grower melitotus indica, planted on well prepared, well drained, non acid soil, at the earliest possible moment after rice harvest is likely to give you a good crop to turn under. So far as we know, no one uses this variety for hay or pasture, since it is bitter. The seed are obtained principally as a by-product of the Sacramento valley grain fields, and the plant grows well on heavy soil. It should get several leaves in fall before cold weather or it will not grow much top until the warmth of spring. Roots, however, are made all winter. Broadcast or drill 20 to 25 pounds per acre. If the soil is sour, apply a ton or two of hydrated or airslacked lime per acre before plowing to get it well mixed with the sour soil.

If you are willing to forego a crop of rice and want to grow a summer legume, melilotus alba, sown 20 to 25 pounds of hulled seed or 25 to 30 pounds of unhulled seed per acre as soon as the ground is warm, will make two cuttings of hay the first season and three or four the second season, if irrigated. Stock soon learn to like it for both pasture and hay, and it does best on moist lowlands, where water is not far away. H. E. Butler plans to grow sweet clover on watergrass-infested land to make the watergrass grow tall enough to cut for hay. Alba does not seed until the second year, when the plants usually die. A hay crop can be cut before allowing it to seed.

FENCES.

The average life of fence posts from the following kinds of wood is: Osage orange, 30 years; locust, 23½; red cedar, 20½; mulberry, 17½; catalpa, 14½; burr oak, 15½; chestnut, 14½; white cedar, 14½; walnut, 11½; white oak, 11½; pine, 11½; tamarack, 10½; cherry, 10 1-3; hemlock, 9; sassafras, 8 9-10; elm, 8¾; ash, 8½; red oak, 7; willow, 6¾.

The average life of a cement fence post is 48 years and a steel post 30 years.

Split the posts as soon as the trees are cut, and give them a chance to season well before using.

Fasten an iron rod about one inch in diameter and two or three feet long, so that it stands firmly upright in a hole in the bench of a mud boat or a log skipper. Slip spool or reel of fencing down over the rod and fasten the end of the reel to the post. Drive the boat down the fence row. Keep your eye out for low places in the fence.

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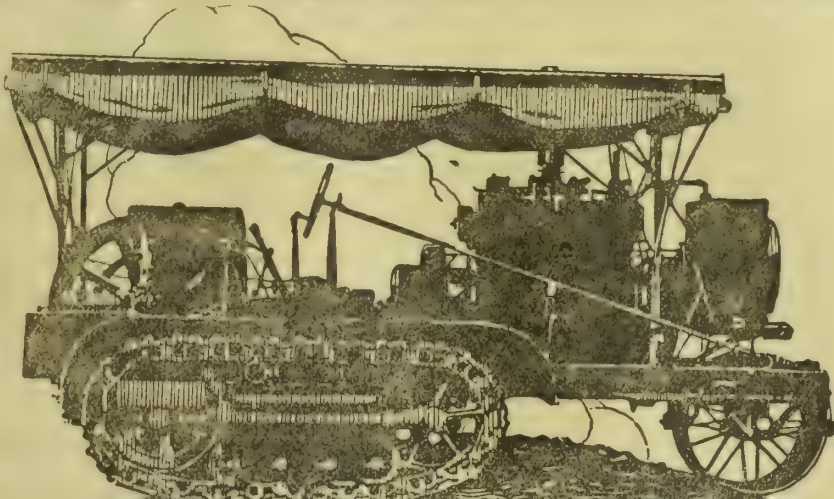
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Don't Overwater Alfalfa

If you want to grow the heaviest possible crops of alfalfa, and get the largest money return from the water used, don't apply more than thirty to thirty-six inches of irrigation water a year, under such general conditions as those, for instance, of the loam soils of the Sacramento valley. To apply more than thirty-six inches usually does not produce corresponding increase in yield. Most California alfalfa growers over-irrigate.

Such is the information made available through a report issued by the University of California, covering six years of experiments carried on jointly by the University of California, the California State Department of Engineering, and the Office of Public Roads and Rural Engineering of the United States Department of Agriculture. Copies of their Bulletin No. 3 may be obtained from the University at Berkeley or the State Department of Engineering at Sacramento. Demonstrations will be shown at the University Farm picnic at Davis on Saturday, April 28.

Four applications of seven and a half to nine inches each year are recommended for Sacramento valley alfalfa fields in general, this irrigation to be given immediately after cutting. However, it is pointed out that alfalfa planted on very open or very impervious soils should be irrigated more than once between cuttings.

Soil Auger.—It is urged that the farmer should use a soil auger frequently, to find out whether he is keeping his soil moist enough, and moist deep enough down, to get the best results from his alfalfa. Alfalfa begins to wilt when silt loams contain less than 10 per cent water, and clay loams, 16 per cent. The soil moisture should be kept four to six per cent above the percentage at which wilting occurs. This can be brought about by applying six to nine-tenths of an inch of irrigation water per foot of soil for loam soils, and seven to twelve-tenths inches per foot of soil for heavier clay loams and clays. To apply more than these amounts is not only a waste of water, but threatens positive damage to the crop and permanent damage to the soil.

The reason many farmers apply excessive irrigation is that they have been using too small irrigating heads, or too large checks. Irrigating heads not large enough to enable alfalfa checks to be watered evenly with six acre-inches of water per acre per irrigation are too small, and the remedy is either larger irrigating heads or smaller checks—preferably the latter, especially in the case of the smaller holdings.

These conclusions come from six years of experimenting on the University Farm at Davis, and 40 or 50 other farms near Willows, Gridley, Los Molinos, Orland, Woodland and Dixon.

Beans and Melilotus Among Valencias

[Written for Pacific Rural Press.]

Beans for summer cover crop in ninety acres of Valencias, and melilotus for winter are adding fertility to the soil of the thrifty three-and-a-half-year-old orchard belonging to the Carroll ranch in Orange county. The bean straw is plowed into the heavier soil. Last July the Carrolls sold 610 sacks of 1915 limas at the high price of \$6.35 per 100 pounds, a cash income from the ninety acres of \$3,873, or about \$43 an acre. Some forty or fifty sacks were sold for seed and twenty-three sacks kept for 1916 seed.

"It's good trees we are after," says one of the Carroll brothers, "but the beans not only add fertility and improve texture of the heavier spots, but they help along with the expenses." The trees will be too big next season, however, to grow a cultivated intercrop. They are uniform, vigorous, with large dark green leaves. The bean crop in 1916 was only 295 bags, due to wire worms and fewer rows between trees.

The orchard is set in 24-foot squares. On thirty acres there were in 1915 six rows of beans 33 inches apart, in each center, leaving them four feet from the trees. On sixty

acres there were only four rows. In 1916 there were three rows in part and four in the rest.

The 1915 crop was planted about May 10, using about forty bags of seed. The crop was cultivated twice, irrigated late in July, cultivated, and then laid by, for the vines prevented further cultivation. Meanwhile the oranges were irrigated by furrows outside the beans in the usual way and neither interfered seriously with the other. In September the vines were cut with a sled cutter, dried, and threshed late in the month at a cost of 20 cents per sack for the machine, besides the hauling which brought the cost 10 cents higher. Sacks cost Mr. Carroll 7½ cents each.

Winter Cover Crop: When we visited the Carroll ranch late in September, 1916, they were irrigating by flooding. They expected to spring tooth it both ways three or four days after the irrigation, broadcast melilotus, harrow it in, and then ridge at least one way for irrigation. Unless rain should come early, an irrigation would be given in October; and if desirable to delay plowing in the spring, they would be able to irrigate at any desirable time.

ARRESTING SAND-STORM DAMAGE.

[Written for Pacific Rural Press.]

Strong north winds often do much damage to summer crops in sandy districts early in the spring, when the small plants are just coming out of the ground. To overcome this, E. G. Cross of Manteca finds that

early preparation of the land for such wind storms is effective.

Instead of planking the land after planting to make a solid top surface, he rolls the ground thoroughly and then harrows. This leaves a top mulch with a solid packed foundation and prevents heavy drifting in his tomato fields.

We are undoubtedly facing a great general food shortage. For the sake of the hungry world, as well as that of your bank account, you ought to make every foot of your land as productive as you possibly can. You cannot do this without fertilizing or feeding your soil.

GOLD BEAR FERTILIZERS

are made from animal products that contain the element necessary to meet California soil conditions and crop requirements.

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Wheat 33 bushels per acre
Oats 45 " "
Potatoes 199.84 " "
Cotton in Egypt, 400 pounds "

Average Production of American Crops is as Follows:

Wheat 14 bushels per acre
Oats 40 " "
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European farmers use about 600 pounds to the acre of a Home-Mixed Nitrated Fertilizer containing 8 per cent of Phosphoric Acid and 4½ per cent of Nitrated or Nitratable Nitrogen.

American farmers apply 200 pounds to the acre of a Fertilizer containing 8 per cent of Phosphoric Acid, together with 2 per cent of Nitrogen which is mostly unavailable.

The difference in results is largely due to the large amount of Nitrated Nitrogen used in Europe per acre as Nitrate of Soda. Our pitifully small American yields are due to failure to appreciate the necessity of using Nitrated Nitrogen.

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STANDARD OIL COMPANY (California)

MICA AXLE GREASE

We Must Relieve the Alarming World Food Shortage

(Continued from first page.)

For the armies, grain, beans, onions, potatoes, dried and canned fruits, meat, wool, cotton, etc. To save as much of these as possible for use of the armies, let us use vegetables, fresh fruits, cuts of meat which could not so readily be cured. The armies should have first choice of food stuffs, for they must be kept in condition.

Grain grown for hay may be allowed to mature the grain, which must command high prices anyway. Grain that goes to distilleries and breweries may be saved for food for man and beast; land devoted to hops will grow most anything of greater food value. Ditch banks allowed to grow and spread weeds may produce sheep for wool and mutton.

With Livestock we cannot afford to waste good grain and feed on ill-bred animals that cannot make the best use of it. We cannot afford to waste labor on poor-producing hogs and cows. We can scarce afford to let scrub beef eat up our pastures when purebred sires would make more and better meat from the same pasture.

With field crops we must devise rotations that will keep up fertility, and reduce disease; we cannot afford to plant ill-matured or diseased seed. We need separate plots on which to grow selected grain for seed; we cannot afford to waste good seed on ill-prepared ground. Fallow ground must be intelligently cultivated to make it hold the moisture and make its locked-up fertilizer elements available while the land rests. Better yielding varieties must be sought and tried out judiciously. Seed must be treated to avoid disease where this is possible. Trees must be more persistently sprayed in order to save the other labor put on them. The depth to which irrigation goes, and the distance sideways from furrows to which it soaks, must be learned, usually with soil or post hole augers.

Suggestions for Practice.—Get seed potatoes if possible that are certified by the State to be true to name and free from disease; do not plant any with blackened, rotted, or spotted flesh; treat scabby potato seed with formalin or corrosive sublimate. Treat beans and peas with carbon bisulphide to avoid planting live weevils with them. Do not plant tomatoes where blight has injured a previous crop. Rotate crops to avoid disease. Treat spring and summer sown grain for smut with formalin. Cut out smutted corn stalks and burn them before the

smut sacks burst. When beans come on, sulphur them if red spiders appear. Plant Indian corn for silage wherever it will grow.

Spray apples and pears for codling moth, mildew, scab, etc., at just the time and with just the sprays required. Persist in spraying apples for codling moth. Watch peaches, apples, pears, cherries, prunes, walnuts and plums for aphids, and when you see one spray before they protect themselves with curled leaves and before they have multiplied greatly. Remove borers from apple and stone fruit trees now or sooner with wires. Do not let red spiders damage almonds, citrus fruits, and stone fruits. Give them dry fine sulphur on the first hot day after you find the first of them. Persist with sulphur treatments for grape mildew. Don't let scales overrun citrus, olive, and deciduous fruit and ornamental trees.

Vaccinate hogs and calves with reliable vaccine to prevent loss by disease. Test cattle with tuberculin. Segregate tubercular and abortive cattle; take their calves away and give them commercial feed or the milk of healthy cows immediately. Test all dairy cows to get rid of those which do not produce enough milk or butter fat to pay for their feed and labor. Breed your mares to purebred stallions or jacks. Study feeds and feeding. Raise good poultry and pay attention to it.

Support the University in its costly experiments to gain accurate knowledge to solve farm problems.

Join Your Neighbors in marketing organizations, which will prevent willful destruction of food-stuffs to raise prices, such as has been practiced when chaotic distribution prevailed. Put some of the middlemen out of jobs so they will get into producers' ranks. Get accurate crop reports, both as to condition and total production, on which you can base your plans for the next year's crops. Control the prices and distribution of your crops by co-operation to attain "our first duty," which, according to Mr. Lubin, is "to prevent manipulation of our food supplies" by those whose only interest in the food is in the margin they can skin from it by handling it once more. Get behind your growers' organizations even at temporary sacrifice to yourself, for both patriotism and ultimate profit demand it. Don't stay outside because of poor management of the organizations, but get in and set up a legitimate heller if you have ideas that will improve the management.

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Southern Pacific

Write for folder on the
"Apache Trail of Arizona"

Tepary Beans with Poor Cultivation

[Written for Pacific Rural Press.]

Fifteen sacks of tepary beans to the acre without any cultivation was the yield secured by Elbert R. Lindsey on land near Ripon last year. He will plant 200 acres of the same variety of beans early in May.

The land on which Mr. Lindsey grows beans is the sandy loam char-

acteristic of the section. Before planting last year, he plowed the land deep and harrowed it thoroughly before planting. But owing to other work, he was unable to do anything more except to get them hoed three times to rid the land of wild sunflowers.

A part of last year's crop was

planted in April and part in May. Those planted in April made a slower growth, but did not differ materially in yield, although Mr. Lindsey believes May planting preferable. He prefers teparies to black-eyes, because they are earlier maturing, do not shell out so badly nor crack as much in threshing; and he finds that they yield heavier and sell for more money. While he secured good results last year without cultivation, he believes he would

have added a number of sacks to the acre had he cultivated thoroughly and often.

[Tepary seed is scarce this spring on account of the difficulty met last year in marketing tepary crops.—Ed.]

In treating the fence or vine posts with preservative, the posts should be dry, well seasoned and carry no bark. The preservative is applied hot to penetrate better and to kill germs of decay.

General Agricultural Review

GRAINS AND FIELD CROPS.

Misses Jennie and Blanche Lamb, after a year's roughing it on a relinquishment secured by them in Ventura county, are "making good." They have sixty acres of wheat, with a number of fruit trees. Last year they cleared from their property \$1,100; and expect to do better this year.

It is said that, believing that cotton will go to 25 cents per pound for the short staple, Imperial Valley growers are preparing to plant 130,000 acres. Eastern buyers are offering to contract the crop before it is planted at 18 to 20 cents per pound, but planters are refusing to sell.

The Lincoln Cannery Association expected to can 10,000 cases of tomatoes, but now propose to can 20,000 cases, due to frost damage to peaches in the Loomis district.

Warden J. A. Johnston of San Quentin prison advises grain and rice growers to place orders for bags now at 10 cents, to be delivered August to December.

The Texas Bermuda onion crop for 1917 is estimated by U. S. Department of Agriculture at 12,050 acres, an increase of nearly 20 per cent over the 1916 estimate.

James Milligan, a bean grower of Oxnard, has contracted his crop of 1917 limas to be delivered at the maturity of the crop at \$7.25 per hundred pounds.

Reports say that farmers in the Coachella Valley have put out the largest acreage of sweet potatoes ever planted; and that there will also be a big acreage of tomatoes.

A carload of Egyptian cottonseed has been imported to the Bard district of Imperial county for this year's planting.

Beet planting around King City, Monterey county, is practically finished. It includes about 3400 acres.

Unless good, soaking rain comes to Stanislaus county within a week the barley and dry land bean crops will be very small, according to R. M. Frazer. A lot of bean growers are plowing unirrigated land, hoping to catch more rain.

A twelve-year lease on 353 acres of Tyler Island in the San Joaquin delta has been signed for \$107,000 by R. M. Durbin, who will plant it to asparagus. The crop has already been contracted to a cannery.

J. E. Bennett of Turlock says he cut seventy tons of oat hay from ten acres last year and followed it on the same ground with 150 tons of silage. He figures his silo paid for itself in one year.

News comes from Fullerton that cabbage growers in that section are reaping a rich harvest. It is said that shippers are paying \$85 to \$90 per ton.

It is reported that Mayor H. E. Hyde of Marysville offered \$1 prize for the largest potato and got three sacks of entries valued at over \$12.

Turlock cantaloupe acreage is being reduced for fear of difficulties of transportation and because more concentrated food is needed.

Canners are buying surplus asparagus in the San Francisco market at five and six cents per pound. Retailers were paying seven cents for better grades.

A fire at Vladivostok, Siberia, destroyed 50,000 bales of cotton last week valued at \$10,000,000.

First crop Stanislaus alfalfa is about two weeks late on account of the cold winter.

New potatoes are commanding nine and ten cents per pound in San Francisco.

Alameda county green peas have been selling at eight cents per pound.

There are nearly 4000 acres of cantaloupes in Imperial county this year.

Grain hay in Stanislaus county is selling at \$30 and alfalfa at \$25.

May wheat in Chicago has gone above two dollars per bushel.

California rice has been going to Honolulu and Buenos Ayres.

A. Biggs, rice grower, has refused \$2.50 for paddy.

CITRUS AND SEMITROPICAL.

The three packing houses of the Escondido Valley, it is said, are paying out \$1,800 per week in picking and packing citrus fruit. Growers report fairly satisfactory prices for both oranges and lemons. A total of 123 cars or about thirty per cent of the crop has been packed, fifty-eight cars of oranges and sixty-five cars of lemons.

May 1 is the final day when all the money and time and work and news space will have been wasted unless enough prune and apricot growers sign up with the Association. Every member gets all his crop sells for except the smallest kind of a charge for Association expenses.

The earliest caprifigs found by Prof. I. J. Condit in San Joaquin Valley were recently located in Merced county. He recommends for trial the pseudo-carica caprifig, which has proved so successful on the first Smyrna crop in Imperial county.

If a tree is found to be infected with citrus canker the wisest course to pursue is to burn it at once. This method of eradication is used throughout the affected region of the South.—U. S. Dept. of Agr.

When plants are shipped from one county to another, a copy of the invoice should be sent to the horticultural commissioner, where the plants are received, not to the county commissioner where the consignee resides.

It is announced from Riverside that eight orange packing houses in that city will close down as soon as the present supply of citrus fruit is packed, owing to a strike by the packers.

A new species of codling moth infests the persimmon in Japan, but Horticultural Quarantine Officer Frederick Maskew is on guard to prevent its introduction to California.

Santa Cruz County Horticultural Commissioner W. H. Volck says that the dry spring reduces chance of damage by apple scab, especially in the valley orchards.

The Whittier Citrus Association closed its navel season last week. Its business for the past six months totalled \$470,000, an increase of \$155,000 over the same time last year.

The Santa Clara apricot crop is very spotted, some places having a fine crop, others practically none.

Banning apricots have been selling at fifty dollars per ton to canners.

Plant Your POTATO Land When Crop is off to

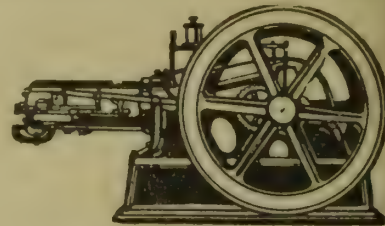
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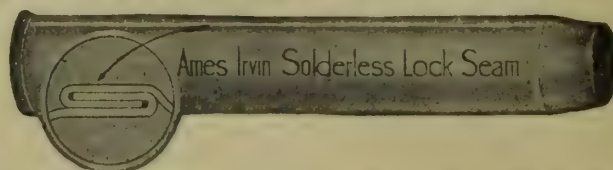
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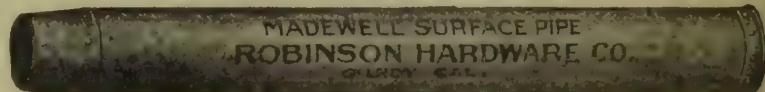
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HONEY NOTES.

Hess Elkins, one of the biggest honey producers in the Fillmore district, has sold his 1917 honey crop at nine cents per pound. It is said his crop will yield him several thousand dollars.

Secretary Richter of the California Bee Keepers' Association, writing to the Western Honey Bee, says: "There is a San Francisco buyer here (Stanislaus county) trying to contract our white honey (extracted) at six and a half cents per pound; light amber, six cents; amber, five cents, for the coming season. This man recommends arbitration should there be any differences over standardization."

The Western Honey Bee says: "Our opinion as to the standard of color for honey has never changed. We should be our own arbiters. If the directors of the State Association will prepare two chemical samples and say, 'this is light amber' and 'this is amber' and put their seal to it, the thing is done. Every buyer in the State will respect it, because it will be the first step toward uniformity, which they need as badly as we do."

It is just between seasons. Old stocks are exhausted and it is too early as yet for the new crop. One of the largest Los Angeles buyers has just returned from a two weeks' trip among the honey producers of Southern California. He says he found the season very backward. No extracting has been done as yet. With a good shower the next two weeks the indications are that the crop will be a very good one. Without rain, however, the yield of honey will be short. So far no prices have been named for new honey, though the prevailing impression is that it will rule higher than last year. The market will be late in opening.

News comes from Santa Ana that the long dry spell has dried up the annual flowers, especially the wild heliotrope and the dandelion; hence it is thought the honey crop of Orange county will be pretty much a failure.

GRAPES AND SMALL FRUITS.

James Madison was not re-elected manager of the California Associated Raisin Company.

The California Associated Raisin Company has named opening prices for the 1917 crop of layer and cluster raisins three-quarters of a cent higher than 1916 opening prices, but the same as prices set after the rains last year. Thus does this growers association show that co-operation does not raise the price to consumer, though it does raise the price to producer.

MISCELLANEOUS.

D. O. Lively Stock Farm reports the recent sale of twelve young mares to the Hawaiian Islands; Holstein cow to Mexico; two Jersey cows to J. V. De Laveaga; a Ring Master Shorthorn bull to the Rodgers Ranch Company at Lovelock, Nevada; ten Duroc Jersey sows and a boar to Major Brooks; twenty-eight Flemish Giant hares to the Whitehall Ranch at St. Helena. They also report the receipt of twenty registered Hampshire ewes and a ram from Illinois.

Approved grazing allowances for the National Forests during the coming season provide for the pasturing of 8,400,155 sheep, 2,120,145 cattle and horses, and 54,680 swine.

LIVESTOCK DIRECTORY.

Rates in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

SWINE.

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MAKE BIG MONEY with our famous Whitten Ranch Big Type Poland-Chinas. Prolific breeders and profitable feeders. Grow rapidly, fatten quickly. Top the market at 225 lbs. in six months. Make greatest profit for feed consumed. Prices reasonable; satisfaction guaranteed. Send for free illustrated book, "Hogs for Profit." Finest ever issued. Packed with valuable information; tells how to become successful. Ranch in Tulare county, but address owner, R. H. Whitten, 610A Security Building, Los Angeles.

LARGE NUMBER of excellent young boars ready for immediate service. Weanlings of either sex. Sired by Joker, first prize boar at Wisconsin State Fair, 1915. Sows and gilts sired by Iowa Wonder and bred to Joker and Sunnydale's Chief. For prices and further information write Geo. A. Smith, Corcoran, Cal.

GRAND CHAMPION SUPERBA POLANDS—A few choice spring Superba boars ready for service. Sows bred to Superba for fall litters. Prices reasonably low. Rough's Greenfields, Arlington Station, Riverside Cal.

BOARS of serviceable age all sold. We have a few choice gilts bred to John Henry; an exceedingly choice boar. Also have a fine lot of Fall pigs, either sex. Bar N Ranch, E. A. Noyes & Son, Props., Sutter, Calif.

POLAND-CHINAS—Bred gilts, \$15; young boars, \$10 and \$15; bred sows, \$25. Weanlings, either sex, \$6. Registered and crated, purchaser to return crates. E. A. Hall, Watsonville, Cal.

REGISTERED POLAND-CHINAS—Young boars ready for service. Weanling pigs, both sexes. Prices attractive for quick sales. J. H. Cook, Paradise, Cal.

CRAWFORD'S CALIFORNIA CHINAS are prolific and profitable. Can fill your order for weanlings, either sex, for \$15.00 each. J. A. Crawshaw, Hanford, Cal.

LAKEVIEW STOCK FARM POLAND-CHINAS are money-makers. Satisfaction or money refunded. Geo. V. Beckman & Sons, Lodi, Cal.

POLAND-CHINAS—Big type combined with quality. Choice bred sows, gilts, boars. W. D. Trehwitt, Box 82A, Hanford, Cal.

REGISTERED POLAND-CHINA SWINE—Prize-winners. Finest stock in the State. \$20 up. M. Bassett, Hanford, Cal.

BIG-TYPE POLAND-CHINAS—Stock from the best herds of the Middle West. N. Hauck, Alton, Humboldt Co., Cal.

POLAND-CHINA HOGS—Large type. 200 lbs. in 6 months. I guarantee to please you. O. L. Linn, Linview, Modesto, Cal.

REGISTERED POLAND-CHINAS and Duroc Jerseys. Cholera immune for life. T. H. Beckman, Lodi, Cal.

POLAND-CHINAS—Large type. The Browning Stock Farm. W. H. Browning, Woodland, Cal.

KNOB HILL STOCK FARM—Registered Poland-China Swine. A. M. Henry, Farmington, Cal.

AMAWAGE FARMS—Poland-China hogs and Holstein cattle. G. H. Loughery, Visalia, Cal.

POLAND-CHINAS—Prize-winners. Money-makers. W. Bernstein, Hanford, Cal.

REAOAKS RANCH herd of registered Poland-Chinas. W. J. Hanna, Gilroy.

Berkshires.

GRAPEWILD FARM BERKSHIRES—World's Fair Grand Champion Grand Leader 2nd heads our herd, not only himself a champion, but the sire of Champions. At the 1916 California State Fair his daughters won first in all of the senior sow classes, including the Grand Champion Sow. At the 1916 Oregon State Fair a Grand Leader sow was Junior Champion. We are offering a number of choice boars of exceptional breeding and are also booking orders for Fall pigs. A. B. Humphrey, Escalon, San Joaquin Co., Cal.

CHOLERA IMMUNE BERKSHIRES—A few choice gilts, large enough to breed for Fall litters. Also Fall boars at attractive prices. Several have strong line of best imported blood. Young pigs \$15 and \$20 each. All registered. Quality stock at utility prices. W. H. Waugh, Riverside, Cal.

REGISTERED BERKSHIRES—Progeny of Improver B. Young stock now ready for sale. Start your herd with breed and strain of established reputation for California conditions. Geo. G. Meckfessel, Berlin, Cal.

BERKSHIRES—I have one of the best herds on the Pacific Coast, including Grand Champion Sow, Reserve Grand Champion Boar under one year, Third Aged Boar, etc. Frank A. Brush, Santa Rosa, Cal.

IMMUNIZED NORMANDY BERKSHIRES—Good type. Breeding stock, any age, for sale at all times. Cast iron guarantee. Arlington Smith, Visalia, Cal.

JUNIOR CHAMPION BOAR for sale. Brington's Longfellow, 186579, of big bone, short pasterns, great length and depth. Oak Grove Dairy Farm, Woodland, Cal.

BERKSHIRES—Bred sows and weanling pigs. Write for prices and pedigrees before buying. Butte City Ranch, Box P, Butte City, Glenn Co., Cal.

REGISTERED BERKSHIRES—Special offering. Three service boars at prices to move them quick. Write us. Imperial Stock Farm, Morgan Hill, Cal.

ROSE CREST BERKSHIRES—Rivals Champion Best blood. Open and bred gilts. Service boars. F. L. Hall, Ferris, Cal.

CARRUTHERS FARMS BERKSHIRES—Cholera immune. Second annual sale August 2, 1917. Mayfield, Cal.

30 REGISTERED BERKSHIRES—Boars and gilts for sale. J. H. Benedict, Lemoore, Kings county.

MODEL HERD BERKSHIRES—Bred for size and quality. Weanlings and gilts. J. L. Gish, Laws, Cal.

HOPLAND STOCK FARM—Registered Berkshires. Prices on application. Hopland, Cal.

REGISTERED BERKSHIRES—Geo. M. York, Modesto, Cal.

BERKSHIRES—Fair Oaks Ranch, Willits, Cal.

Duroc-Jerseys.

FIRST PRIZE HERD—Headed by Uneeda Wonder, 2nd prize boar at Nebraska and a winner at Omaha, 1916. Grandson of Crimson Wonder Again and H. A. Queen. Entire offering of Spring pigs will be from 1st or 2nd prize-winners. Inquiry solicited. Haden Smith, Box 84D, Woodland.

REGISTERED DUROC-JERSEYS—Service boars from prize-winning stock are money-makers. They grow faster. New England California Corporation, Ripon, Cal.

CROLEY'S BALANCED HOG FEED—the cheapest feed to fatten hogs. Write Geo. H. Croley Co., Inc., Live Stock Supplies, 631-637 Brannan St., San Francisco.

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RANCHO RUBIUS DUROCS—All sold except a few July and September gilts. Extra good. Write for prices. Elmer Lamb, Ceres, Cal.

DUROC JERSEYS—Sow and boar pigs from Registered Stock. Low prices. Delta Farm and Live Stock Co., Colton, Cal.

REGISTERED DUROCS of guaranteed breeding. All ages. Weaned pigs, \$10. H. E. Boudier & Son, Napa.

HEAVY BONED DUROCS—A few service boars for sale. Ormondale Co., Route 1, Redwood City, Cal.

REGISTERED DUROCS—Crimson Wonder stock. Young stock, both sexes. L. D. Collins, Denair, Cal.

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REGISTERED DUROC-JERSEY SWINE—Both sexes. Big-boned type. B. F. Kendall, Hardwick.

WINTON DUROC-JERSEY FARM, Winton, Cal.—High-class purebred hogs, both sexes, any age.

CURTIS DUROCS of either sex at all times. E. C. Curtis, Napa, Cal.

DOS HERMANOS REGISTERED DUROCS—Duvence & Pickersgill, Ukiah, Cal.

DUROC-JERSEY REGISTERED HOGS—River Bend Farm, St. Helena, Cal.

REGISTERED DUROC-JERSEYS—S. S. Southworth, Napa.

BIG TYPE DUROCS—Quick maturing. Easy keeping. Frederick M. Johnson, Napa, Cal.

REGISTERED DUROCS—Either sex at all times. W. P. Harkey, Gridley, Cal.

Yorkshires.

LARGE YORKSHIRES—The ideal hog for the progressive farmer. Young stock for sale. A. L. Tubbs Co., Calistoga, Cal.

Chester Whites.

BILLIKEN HERD OF CHESTER WHITES—The type that is ready for the market in less than seven months. The easy feeders and big producers; sold out of bred gilts and service boars; October farrows to offer as follows: 8 boar pigs and 18 sow pigs; these are from 6 different litters and 3 different sires. Order now before these are all sold. Description and prices on application. C. B. Cunningham, Mills, Cal.

REGISTERED IMPROVED CHESTER WHITES—Grizzly Bear Ranch, East Auburn, Cal.

Essex.

LITTLE BLACK ESSEX—New crop nearly ripe. A few fine youngsters left. L. W. Millap, Yolo, Cal.

Hampshires.

BELLA VISTA HAMPSHIRE SWINE—from prize-winning stock. J. W. Henderson, First National, Berkeley.

Tamworths.

BEAVER LODGE TAMWORTHS—Service boars. Write for prices and pedigrees. A. G. Lane, Amsterdam, Cal.

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Holsteins.

FOR SALE—From 1 to 10 extra fine, straight well-marked, light-colored, registered Holstein heifers, from 8 to 20 months old. Those old enough are being bred to a first-prize son of Prince Gelsche Walker, whose dam has a high yearly record. Some of these heifers are sired by bulls whose dams have from 35 to 37 pound records. They carry the very best blood of the breed and are good enough for any herd anywhere. Prices to fit any pocket-book. Geo. A. Smith, Corcoran, Cal.

GRANDSONS OF HENGELVELD DE KOL and out of A. R. O. cows for sale. Prices reasonable. Write for pedigrees. Many years of constructive breeding has made my herd one of the prominent ones of the San Joaquin Valley. R. F. Guerin, Visalia, Cal.

REGISTERED HOLSTEINS—Herd sire King Korndyke Hengerveld Ormsby 7th, 86623. His full sister as Junior 3-year-old made 32.04 lbs. butter in 7 days. The record of his dam and his sire's dam averaged 30.98. George Kounias, Modesto, Cal.

REGISTERED HOLSTEINS—Grandsons of King Segis and of world's record cow Creamelle Vale. Will build up the production and value of your herd. Write or call and see them. F. H. Stenzel, San Lorenzo, Cal.

FOR SALE—Carload or less, full-blood, unregistered, tuberculin-tested cows and heifers. 3-year-old Holstein bull from registered sire and dam. All in fine condition. R. S. Burrough, Cloverdale, Cal.

TULARE GUERNSEY AND HOLSTEIN Farm is offering young bulls of both breeds. Excellent breeding. Prices reasonable. W. J. Higdon, Tulare, Cal.

THE MCCLUD RIVER LUMBER CO., McClud, Cal.—High-class thoroughbred Holstein bulls for sale. Write for prices and pedigrees.

J. H. HARLAN, WOODLAND, CAL.—Breeder of Registered Holsteins. Sold out at present. Watch for announcement on King Valdessa.

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THE HENDERSON CO.—Breeder and importer. Registered Holsteins. Sacramento Bank Bldg., Sacramento.

TWO SERVICEABLE SONS of Colantha Sir Pontiac Aagie for sale. Moorland Farm, K. W. Abbott, Milpitas, Cal.

BREEDERS OF REGISTERED HOLSTEIN cattle and Berkshire pigs. Whittier State School, Whittier, Cal.

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CREAMCUP HERD—Registered Holsteins; Pontiac bull calves. M. Holdridge, Modesto, Cal.

REGISTERED HOLSTEIN CATTLE—E. E. Freeman, Route B, Modesto, Cal.

REGISTERED HOLSTEIN BULLS for sale. C. L. Morse, Route B, Modesto, Cal.

BREEDERS OF REGISTERED HOLSTEIN Cattle—McAlister & Sons, Chino, Cal.

REGISTERED HOLSTEIN BULLS, \$50 to \$150. Glorietta Stock Farm, Woodland, Cal.

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CHOICE HOLSTEIN bulls for sale. No females. Millbrae Dairy, Millbrae, Cal.

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BREEDER OF HOLSTEIN-FRIESIAN CATTLE—Dr. Ben Stetson, Napa, Cal.

A. R. O. HERD OF HOLSTEINS—Alex. Whaley, Tulare, Calif.

Jerseys.

JERSEY BULLS AND BULL CALVES—Sons and grandsons of 2 and 3-lbs. cows. None better. Cheap for quality. N. H. Locke, Lockeford, Cal.

VENADERA HERD OF JERSEYS offers calves from Register of Merit Cows with official yearly records. Write for list of bulls. Guy H. Miller, Route 1, Modesto, Cal.

REGISTERED GUERNSEY BULL—No. 24342 from A. R. and imported stock. Write for prices and pedigree. A. G. Lane, Amsterdam, Cal.

CHOICE REGISTERED JERSEY FEMALES—Fresh and Springers. Breeding and individuality the very best. McLouth, Orland, Cal.

BREEDER OF REGISTERED JERSEY CATTLE—Duroc Swine. Young stock for sale. W. J. Hackett, Ceres, Cal.

JERSEY BULLS AND HEIFERS from Register of Merit Cows for sale. C. G. McFarland, R. 2, Tulare.

YOUNG REGISTERED JERSEY BULL Calves at reasonable prices. O. J. Ames, Oakdale.

JERSEY BULLS—Sons of Gertie's Lad and Gertie's Son's Victor. A. A. Jenkins, Tulare, Cal.

REGISTERED JERSEYS—Young bulls and bull calves. T. B. Purvine, Petaluma, Cal.

JERSEY BULLS from Register of Merit cows. C. D. Hayworth, Modesto, Cal.

Guernseys.

PACIFIC GUERNSEY HERD—Cattle selected from the best imported and Advanced Register Stock. Now offering choice bulls. C. S. Rasmussen, Loleta, Cal.

EDGEMOOR FARM GUERNSEYS—First in the show ring and in official records. Few animals of either sex for sale. Edgemoor Farm, Santee, Cal.

TWO REGISTERED GUERNSEY BULLS—A. E. breeding; of serviceable age. Also a few bull calves. E. R. Frey, Byron, Cal.

BELLA VISTA GUERNSEYS—Males from A. R. dams, \$100 up. J. W. Henderson, 1st National, Berkeley.

Ayrshires.

AYRSHIRES—Registered; all ages. E. B. McFarland, 412 Claus Spreckels Bldg., San Francisco.

AYRSHIRES—Registered—75 head. All ages. Young stock for sale. Le Baron Estate Co., Valley Ford, Cal.

BEEF CATTLE.

SHORTHORNS—Herd headed by grandson Whitehall Sultan. Calves sired by \$10,000 Prince Imperial for sale. One or a carload for sale. Get our prices before buying. Butte City Ranch, Box P, Butte City, Glenn Co., Cal.

SCOTCH AND SCOTCH-TOPPED SHORTHORNS—We have the largest herd of straight Scotch cows in California. Foundation stock of both sexes for sale; also a choice lot of range bulls. Barco Ranch, Hollister, Cal.

D. O. LIVELY STOCK FARM, INC., 216 Hobart Bldg., San Francisco, breeders of Hereford cattle. A few choice heifers for sale. We buy and sell livestock on commission. Farm at Mayfield, Cal.

REGISTERED YEARLING SHORTHORN Bulls—Heavy-boned, thick-necked Scotch and Scotch-topped breeding. Ormondale Co., Route 1, Redwood City, Cal.

BREEDERS OF REGISTERED SHORTHORNS—Milk strain. Choice young stock for sale. John Lynch Ranch, Box 321, Petaluma.

REGISTERED AND UNREGISTERED—Shorthorn bulls for sale. Paicines Ranch Co., 320 Sharon Bldg., San Francisco.

INNISFAIR DAIRY SHORTHORNS—Registered young bulls for sale. Alexander & Kellogg, Suisun, Cal.

HOPLAND STOCK FARM—Registered Shorthorns. Prices on application. Hopland, Cal.

REGISTERED HEREFORDS—H. H. Gable, Diamond G Ranch, Esparto, Cal.

SIMON NEWMAN CO., Breeders of Registered Herefords, Newman, Cal.

GEORGE WATTERSON—Breeder registered Herefords. Bishop, Cal.

SHORTHORNS—Carruthers Farms, Mayfield, Cal.

SHORTHORNS—Fair Oaks Ranch, Willits, Cal.

SHEEP AND GOATS.

F. A. MECHAM ESTATE, Petaluma, Cal.—Breeders and Importers of Shropshire, Rambouillet and American Merinos, both sexes. Also Red Polled cattle. Take electric car at Petaluma or Santa Rosa for Live Oak Ranch.

FOR SALE—10,000 Shropshire-Merino crossbred yearling ewes in lots to suit. Also 200 purebred Shropshire yearling rams. Address Miller & Lux, Incorporated, San Francisco, Cal.

SHROPSHIRE—Ewes and Ewe lambs for sale. International winner heads flock. Butte City Ranch, Box P, Butte City, Cal.

KAUPKE BROS., WOODLAND, CAL.—Breeders and Importers of Hampshire sheep.

DORSETS AND ROMNEYS—Dorset ram lambs for sale. John E. Marble, Los Angeles.

BISHOP BROS., SAN RAMON, CAL.—Breeders and Importers Shropshires.

CHAS. KIMBLE—Breeder and Importer of Rambouillets. Hanford, Cal.

HORSES AND MULES.

REGISTERED SHIRES—Black Hawk Stock Farm, Importers and Breeders. Easton & Ward, Proprietors, Burlingame, Cal.

MISCELLANEOUS.

CROLEY'S BALANCED DAIRY FEED—the cheap milk producer; and Croley's Calf Meal—the best California calf raiser. Geo. H. Croley Co., Inc., 631-637 Brannan St., San Francisco.

FEED, FREE RANGE, State, Government land, any amount. Booklet free. Joseph Clark, Sacramento.

Mechanical Power on the Farm

Users of tractors, engines, pumping plants, motor trucks, automobiles, electric motors, and other mechanical farm power are invited to make this department an exchange of their experiences and troubles.

TRUCKS INSTEAD OF AUTOS FOR TRUCKING.

"What a certain small car is to the pleasure car industry the light truck will be to the commercial car," says G. Edgar Busch of Santa Rosa.

"When I say a 'light truck,'" he continued, "I mean a sturdy strong vehicle especially built for trucking purposes, not a pleasure car made over into a truck by putting a truck body on it; nor yet a pleasure machine of the five-seat type with the back taken off and a receptacle for parcels placed thereon. The day of this feeble compromise is about over. Users are finding that the pleasure car chassis is altogether too light to stand the racking strains of delivery work. Besides, every now and then, when a little extra load has to be carried, the pleasure machine cannot get away with it. The cars are geared at $2\frac{1}{2}$ to 4 to 1, while industrial vehicles properly designed run from $4\frac{1}{2}$ to $6\frac{1}{2}$ to 1, power may be there all right, but the machine being built for high speeds with a light load cannot get away with the heavy load. Pleasure or even lower.

"The Vim half-ton truck, for instance, is geared at $4\frac{1}{2}$ to 1. With this gear it can run up to 30 miles an hour if pushed, and yet can climb any hill with its load on the low gear.

"The chief point that I would like to make, however, is that for real lasting service in delivery work, a machine must be designed as a truck, and built as a truck, from engine to back axle."

DYNAMITE.

Don't use a smaller cap than number six.

Don't keep dynamite too long. It deteriorates.

Don't jam the cap on the fuse.

Don't try to draw a misfired charge from a hole. Shoot another off alongside of it.

Don't thaw dynamite by putting it in hot water or before an open fire.

Don't cut the fuse with dull tools.

Don't crimp on the caps with

Don't have anything except a watertight connection in wet work. Smear the joint with laundry soap, tallow or axle grease.

PLOWS WITH A THIRD LESS POWER.

[Written for Pacific Rural Press.]

Improvements can be made in mold-board plows to do better work with less power. A case was recently observed where the power required was reduced about one-third on a 16-inch plow, operated by R. M. Frazer of Stanislaus County.

There is no land side to the plow. Instead, a solid sheet metal wheel about a foot in diameter is fastened so that it not only bears the downpush of the plow, but also rolls against the land side of the

furrow to keep the plow in line. How much difference in friction on the bottom of the furrow there is, was shown by hooking a rod into the wheel and letting it drag. But the advantage of doing away with much of the side friction of the ordinary long wide landside of a plow is even greater. In this plow, the wheel is fastened securely, right under the curve of the mold-board so that in plowing crosswise of ridges, it follows the contour of the ground very nearly the same as the point, not lifting the point out of ground when the wheel passes over the ridge as it would if the wheel were back still further.

POWER FOR SMALL PUMP.

To the Editor: I have a centrifugal pump, $2\frac{1}{2}$ inches suction and two-inch discharge. Twenty feet to water. I wish to force to water into a tank 30 feet high. What size electric motor will it require? Would it require less power if I put a $2\frac{1}{2}$ inch pipe above the two-inch discharge?—J. A. M., Wheatland.

[Answered by Prof. J. B. Davidson, University Farm, Davis.]

There is one factor missing in connection with the problem set forth in the above pump installation. That is, the length of pipe through which the water must be pumped. This is needed in order to determine the friction loss in the pipe. If we assume that there is a 20-foot loss of head due to friction in the pipe making a total lift of 70 feet, we find upon referring to a table of power requirements for a pump manufactured by a prominent firm that a No. 2 pump discharging 120 gallons per minute will require 6.3 actual horse power. To guide the correspondent in connection with the last phase of the question will say that the loss of head with a flow of 120 gallons per minute in a two-inch pipe is 36 feet per 100 feet, while in a $2\frac{1}{2}$ inch pipe it is only 12 feet per 100 feet of length.

CHEAP FEED GRINDING.

[Written for Pacific Rural Press.]

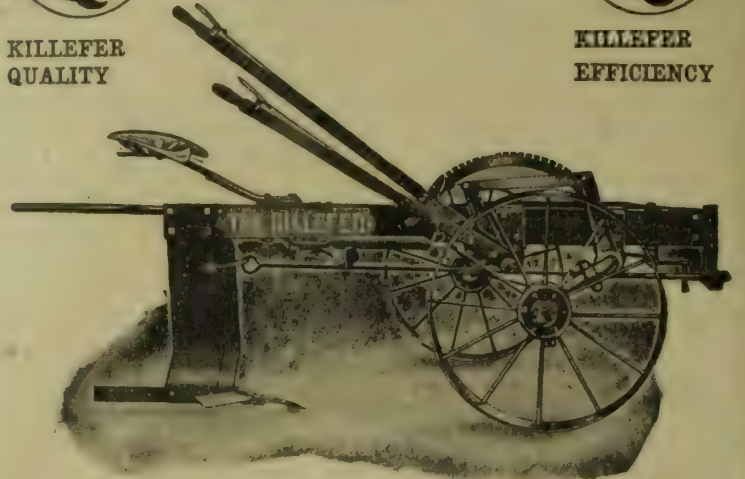
By having a five-ton feed grinder and a twenty-five horse power electric motor, the New England-California Corporation are able to grind all of the grain fed on their ranch, for a dollar a ton. As a part of the 1500 head of hogs fed on the ranch are getting some grain all of the time, the saving runs into many hundreds of dollars each year.

They have the grinder set in a large barn, where there is ample room for the storage of grain and plenty of room for the two workmen who operate the grinder to move about. Early in the spring

1 Row Beet Plow

KILLEFER
QUALITY

KILLEFER
EFFICIENCY



The strongest one row beet plow on the market. It will stay in the ground and get all of the beets; is easy to guide, and the compound lever makes it easy to lift. The shifting hitch is simple and strong. Get your orders in early, as the price on all grades of steel is advancing, and there must be further advances in the price of implements. We build two and four row plows for tractor use.

Our guarantee of quality and work goes with any of these implements; don't experiment; buy guaranteed tools; it costs you less at the end of the season.

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Pumps

High-priced Crops Assured

Your crops are going to sell at top-notch prices this year. There is every indication that this will be the most prosperous year for ranchers in the history of the country. Are you well prepared to produce your BIGGEST crop? Are your irrigation facilities what they should be? An inadequate system may cause the failure of your crops. Don't take chances. Install the Layne & Bowler Pump and be absolutely assured of plenty of water all the time at the lowest cost. Our Catalog No. 25 is yours for the asking.

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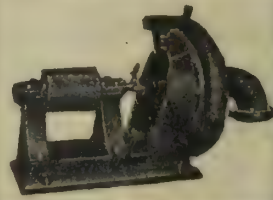
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FOR IRRIGATION—Power, Belt, Electricity, Air, Vacuum, Ship, Spray, Wine, Oil, Mines, Steam, Water Works.

Wind Mills, Road Sprinkling, Rams, Hand, Deep and Shallow Well Pumps, Goulds Celebrated Triplex Pumps

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Dips, Dip Fittings, Brass Goods, Tanks, Wind Mills.



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GASOLINE ENGINES

Inquire of your local Dealer for full particulars.

power was being furnished by a motor that is used during the irrigation season to pump water for the ranch from the river.

ELECTRIC MOTOR HINTS.

Install the motor on a level. This saves repairs.

Don't allow tools or metals to come in contact with live parts of the motor.

Don't attempt to make adjustments on the motor while running.

Don't fail to inspect the motor before running to ascertain the possible presence of foreign matter in proximity to the running parts.

Don't neglect to clean brushes and commutator if sparking is observed. Also insure a proper tension on the brushes. If this does not stop the sparking, shift the brushes backward and forward until a point is found where the sparking ceases. Don't allow moisture to reach any part of the motor.

Don't allow dust to accumulate on the interior. It may cause overheating, and short circuiting.

Change the oil at intervals, to prevent ruined bearings.

Don't turn the full power into the motor at once if a rheostat or controller is used. This causes excessive heating, strains bolts and machinery and consumes an abnormal amount of starting current.

Don't leave the switch in if the motor will not start. Open the switch and investigate.

STOPPING RESERVOIR LEAKS.

[Written for Pacific Rural Press.]

Irrigation reservoirs in sandy land are often unsatisfactory because of excessive leakage. Crude oil is sometimes an effective cure; but even that will not always stop the leakage.

After all other attempts had failed on a ranch in the San Joaquin Valley, the owner planted grain in the bottom of his reservoir and kept it good and wet. When it got up good he turned a bunch of sheep in it and in eating the feed they did such a thorough job of soil packing that all seepage was overcome. Another reservoir owner used hogs in the same manner.

GASOLINE PRECAUTIONS.

Do not bring or allow exposed gasoline or anything covered with gasoline in a room where there is a lighted stove or lamp.

Use care in rubbing any article soaked in gasoline or in cleaning with gasoline. The friction may cause a spark that will ignite the gasoline.

If gasoline stoves are used, the smell of gasoline should be a danger signal and all fires should be put out at once and not relighted until the trouble has been remedied.

Never put gasoline in a can unless such can is painted red and plainly marked gasoline.

WHY YOU SHOULD USE CONCRETE.

It is easily made sanitary and kept so.

It is always cheaper in the end.

It utilizes home labor and materials.

It takes no paint or repairs.

It is wind and earthquake proof.

It is warmer in winter and cooler in summer.

It can be made fireproof.

POWER NOTES.

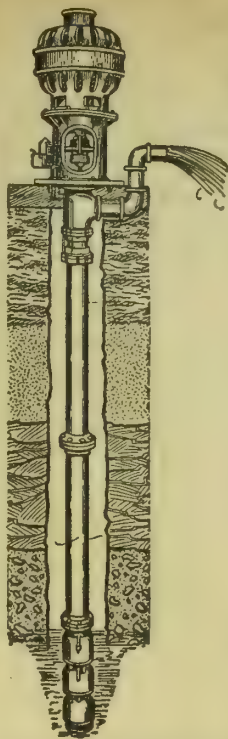
A 20-passenger automobile with flanged wheels is to do rapid transit work on the V. & T. Railway in Carson Valley, Nev.

The main point in trying to avoid pinching the inner tube of an automobile tire is to make sure that the valve stem is pushed back as far as possible when applying the casing to the rim, according to a Fisk Rubber Co. official.

Six tractors are plowing a tract of several thousand acres for a rice and bean project near Gridley.

A bushel of "alcohol" potatoes are said to produce about 18 quarts of 160 to 180 proof alcohol, which Henry Ford says is best in motor cars and tractors. The day of alcohol fuel in the United States is approaching, according to Mr. Ford.

The manager of the Belgian Government factory says that American machinery is practically alone in the field on fine automatic work, replacing the dexterity of hand work.

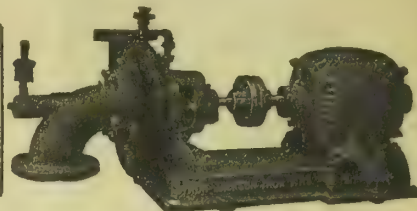


DEEP WELL TURBINES

No valves to pack or plunger to get out of order. For use in any well ten inches in diameter or over.

A complete line of irrigating pumps of all descriptions, horizontal, and vertical for belt drive or direct connection to electric motor.

Prices as low as are consistent with good quality and workmanship.



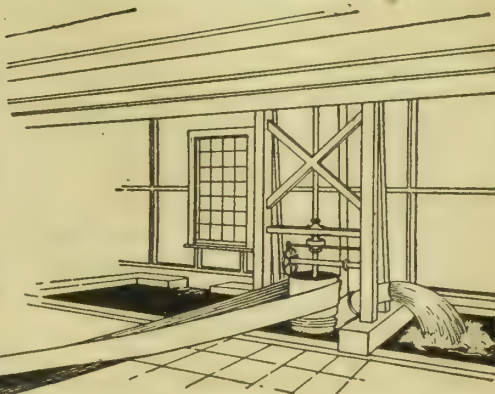
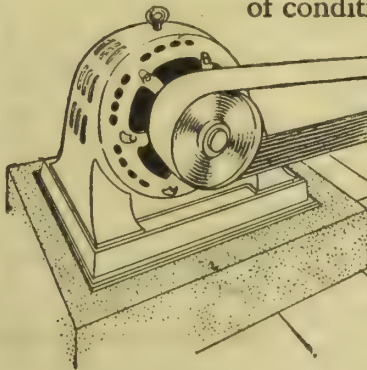
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BYRON JACKSON IRON WORKS, Inc.

SAN FRANCISCO.
LOS ANGELES, STOCKTON, VISALIA

Here is a Test Special Belt

—run under ideal conditions (all belts should be covered.) The sun, rain and weather shorten the life of any belt—though **Test Special** last longer than any other belt under the severest of conditions.



Quarter turn centrifugal pump-driving is easy work for

Test Special Belts

They run 3,500 feet per minute—many run 5,000 feet per minute—and do it for years.

—Tell us your belt troubles

In these advertisements we are telling you that we are belt engineers—that all you have to do is to tell us your belt troubles, and we'll help you solve them—*free, of course*—just write us as fully as possible what is wrong.

Send a rough drawing to show location and how operated. We'll reply as fully and completely as possible, giving advice as to how to adjust and arrange your belt so that it will do your work.

Try it—*write us*—put it up to us to make good on this offer—*do it as soon as you have read this.*

Fill Out This Coupon—Mail It TODAY

New York Belting and Packing Co.
519 Mission St., San Francisco —*Dept A5*
Send me samples of Belting that you will guarantee to give satisfactory service on my work and quote prices delivered at

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Kind of Drive

Cross.....
Straight.....
Perpendicular.....
Width of Belt..... Ply.....
Distance between centers of Pulleys.....
Rev. per minute of Driving Pulley.....
Kind of Machinery Driven.....
My dealer's name.....
My name.....
Address.....

A pocket memo. booklet giving speed and power tables will be sent FREE to all who mail this coupon.

New York Belting and Packing Company

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Home Office: New York City. Branches in all principal cities

Pioneer Breeder Gone

[Data supplied by Wm. A. French, Stockton.]

The man who made Kings county the cradle of the Poland-China in



Elias Gallup, Hanford.

California has passed on. Elias Gallup bred Poland-Chinas before he came there in 1876. In 1879 he made the first exhibit of Poland-Chinas at the State Fair. In 1880 he became a charter member of the American Poland-China Record Co. by purchase of the first share sold west of the Rockies. Several years he judged Poland-Chinas at the State Fair. He was the first man to register a Poland-China from California. He must have been glad recently to see organized in his home town the State Poland-China Breeders' Association. He must have been proud these past years to see the name his county has made for breeding champion Poland-Chinas.

Mr. Gallup was also a purebred sheep and dairy cow breeder, besides special interest in fancy poultry.

Good Stock Rations

When the cow is giving a large quantity of milk, supply nearly one-half of the protein, carbohydrates and fat required in the grain part of the ration, except in cases of forced production when a somewhat larger percentage of concentrates may be profitably used.

To be economical a considerable part of the ration must be of a succulent nature.

Where feed is rather scarce it will be advisable to plant soiling crops for cows.

Sorghum and corn are the surest and best crops for soiling purposes.

If feed is short, sell part of the herd and give those remaining full rations.

In calculating a cow's feed, figure on one pound of grain to every two and one-half to three pounds of milk produced, and all the roughage she will eat.

The ration for a beef steer for one day is about 20 pounds of dry matter per 1,000 pounds live-weight. This should contain about 16 pounds of digestible matter, 1.25 to 1.75 of which is digestible protein. Under average conditions 100 pounds of grain should be obtained from 150 pounds stover, or about the same of silage, 325 pounds of hay, 775 pounds of corn and 75 pounds cottonseed meal.

WEIGHT OF SILAGE AT VARIOUS DEPTHS.

To the Editor: How much does a cubic foot of silage weigh at different heights in the silo, after it has settled?—G. R. C., Escondido.

We reprint figures taken from Wisconsin Bulletin 59, showing the weight per cubic foot at different distances below the surface two days after filling; also the total weight per square foot of the column of silage above various depths:

Feet below top surface of silage.	Weight per cubic foot of silage at different depths—lbs.	Total weight one square foot area to depth given—lbs.
1	18.7	18.7
2	20.4	39.1
3	22.1	61.2
4	23.7	84.9
5	25.4	110.3
6	27.0	137.3
7	28.5	165.8
8	30.1	195.9
9	31.6	227.5
10	33.1	260.6
11	34.5	295.1
12	35.9	331.0
13	37.3	368.3
14	38.7	407.0
15	40.0	447.0
16	41.3	488.3
17	42.6	530.9
18	43.8	574.7
19	45.0	619.7
20	46.2	665.9
21	47.4	713.3
22	48.5	761.8
23	49.6	811.4
24	50.6	862.0
25	51.7	913.7
26	52.7	966.4
27	53.6	1020.0
28	54.6	1074.6
29	55.5	1130.1
30	56.4	1186.5
31	57.2	1243.7
32	58.0	1301.7
33	58.8	1360.5
34	59.6	1420.1
35	60.3	1480.4
36	61.0	1541.4

Select a cow with a sharp backbone, prominent hip bone and thin neck, shoulders and thighs.

SUDAN GRASS PASTURE.

[Written for Pacific Rural Press.]

Sudan grass on light, sandy, irrigated land made excellent pasture for both the Guernsey cattle and Berkshire hogs on A. B. Humphrey's ranch at Escalon last year.

The Sudan was drilled in as soon as frost danger was over; but this year it will be broadcasted, so the stems will not grow so coarse, and it will make better pasture. Chas. Maurer, superintendent of the livestock department of the ranch, says that both brood sows and young pigs did fine on it last year when fed a little rolled barley. When irrigated, the yields are considerably heavier than when dry-farmed.

WHEAT, BARLEY, AND SILAGE FOR SHEEP.

To the Editor: How many sheep can I feed on the wheat one cow consumes in one year? Also, will sheep do well on barley straw and corn silage?—E. Z. S., Escondido.

[Answered by Prof. R. F. Miller, University Farm, Davis.]

It is very difficult to make any statement regarding the pounds of wheat that may be consumed by either a cow or sheep per year, as this would depend entirely on specific conditions. However, we usually figure five to six mature ewes equal to one cow.

Sheep are not especially adapted to such coarse roughage as barley straw, and we seldom see a flock of

Saves Time!

The faster you turn the Sharples, the quicker you finish skimming! For instance: If by turning a Sharples at 45 revolutions per minute you get through separating in 15 minutes, you can get through in 10 minutes by simply increasing the speed to about 55 revolutions. The Sharples is the *only* separator that can be "hurried"—a mighty handy thing when you are hurried.

Now consider the time saved in cleaning the Sharples. The bowl is the most simple in existence—just *one* piece in it, no discs or blades. Simply run a brush through it once or twice—and cleaning's done!

Furthermore, the Sharples requires oiling only *once* a month—and in only *one* place. Just pour a little oil into the enclosed gear case—more time saved!

SHARPLES

Famous Suction-feed
"Skims clean at any Speed"

SEPARATOR

- the *only* separator that skims clean at widely-varying speeds
- the *only* separator that delivers cream of unvarying thickness—all speeds
- the *only* separator that you can turn faster and finish skimming quicker
- the *only* separator with just one piece in the bowl—no discs, easiest to clean
- the *only* separator with knee-low supply tank and a once-a-month oiling system

Remember that all separators lose considerable cream when turned below speed—*except Sharples!* The Sharples gets all the cream no matter whether you turn it fast or slow. It saves up to \$100 a year more than other separators. Cordially welcomed by women, owing to its easy turning and easy cleaning. Over a million Sharples users. Write for catalog to Department 31.

The Sharples Separator Co. - West Chester, Pa.

Sharples Milkers—used on over 300,000 cows daily

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BAKER'S TRACELESS HARNESS



Best plow rig. **NO WHIFFLETREES—NO TRACES.** Handiest farm harness. Indispensable in the orchard with special fitness for all low down work. You can hitch closer to your load, plow and cultivate close to the row and save all the worry to man and team. No weight of whiffletrees for man to lug. Everything clear behind team. Use our outfit and save your trees. Highest endorsement of farmers and fruit growers. Write now. **B. F. BAKER CO., NUMBER 1220 MAIN ST., BURNETT HILLS, N. Y.**

sheep hovering around a straw stack as is so common with hogs. However, in feeding corn silage, some straw could be utilized to good advantage (preferably oat straw), as this is free from beards and more relished by stock. At the University Farm the sheep are wintered on corn silage and alfalfa hay, which we find a very satisfactory ration.

Let the boy practice on the cows that are being dried off.

The manure should be removed daily and the manger kept clean.



Gertie's Son, Victor, No. 123159
Dam, Victor Lady Lake (R. O. M.) of
536 pounds butter in 303 days as
a 4-year-old.

INVEST in JERSEYS AND START RIGHT

135 Registered Jerseys in my herd, including 18 Register of Merit Cows, Blue-ribbon winners at 1916 Hanford, Bakersfield, and Visalia Fairs.

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A. A. JENKINS
TULARE, CALIF.

DAIRY COWS
REGISTERED BEEF BULLS
PUREBRED HOGS
Large or small lots. Any order executed.
GEO. P. ROBINSON CO.
426 J Street,
Travelers Hotel Building, Sacramento.
LIVESTOCK BROKERS



The Farmer's Duty to the Nation!

IN THE PRESENT situation, clearly the farmer's duty to Our Nation is that he produce foodstuff in the largest quantities possible—that he use every means available to conserve this food supply. Also, his duty to himself certainly demands that he produce his own needs as economically, and on as little ground, as possible, so he may have a maximum amount of farm products to sell at prevailing high prices, thereby securing greater profits from his labor.

Never was the need for a silo more apparent than under present conditions. Silage crops, on account of their greater tonnage, enable the farmer to produce his own feed on a comparatively small amount of ground, and very cheaply. Thus he has more ground to devote to crops for the market—crops that mutually benefit himself and his country. Silage, being a succulent feed, helps secure increased results from dairy herds and beef stock, adding more foodstuff of this kind to our national surplus.

Any GOOD silo will more than pay for itself every year in the hay and grain its use will save. The—

INDIANA SILO

is a GOOD silo, as is shown by the splendid record it has made the past **FOURTEEN YEARS** on over 60,000 American farms, a record that has proven the methods and materials used in its construction to be right. Add to this the fact that it is fully covered by the Spaulding Guarantee—backed by our great resources—and you will realize your money invested in an Indiana Silo, known and used in every State in the Union, must be better invested than it could be in one of the unproven types found everywhere.

The Indiana Silo is within **YOUR** reach, for our service covers the entire Pacific Coast. Our terms will permit you to pay for your silo out of the money it saves for you, and Indiana Silo Service will enable you to get results without experimenting. A postal sent us will bring our silo book—just off the press—and complete information in regard to prices and terms; it will also be your first step toward greater profits from your farm, and the production of greater food supplies for our country. Won't you take this step today? Thankyou.

Address all inquiries to Salem, Oregon.

The Chas. K. Spaulding Logging Co.

PORTLAND AND SALEM, OR EGON.

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The Chas. K. Spaulding Logging Co.,
Salem, Oregon:
Send me your big FREE Indiana Silo Book,
also place my name on your mailing list for
your monthly silo bulletins.
Name
Address

Succulent Feed the Year Round

[Written for Pacific Rural Press.]

Whenever one finds heavy producing herds of dairy cattle he also finds as a rule a good feeder. This rule holds true with John Guill of Chico, whose grade Holsteins averaged 10,170 pounds of milk and 346 pounds of butter-fat in the Gridley Cow Testing Association last year.

The importance of succulent feed, which has at various times been emphasized in these columns, is well brought out in Mr. Guill's feeding operations. While alfalfa hay is the basic ration during the entire year, succulent feeds are also provided during most of the time. Silage with Mr. Guill is no new fangled idea, his first silo having been erected in 1897; and another one soon afterward. One of these is no longer used; but the other one has been relined with building paper and resaw and still preserves the silage in a satisfactory manner.

Indian corn is the principal silage crop, being planted as soon after April 1 as possible. Leaming Yellow Dent is the variety used, the yield on unirrigated land averaging about 10 tons to the acre. By August 1 the corn is ready to silo, but before that time a few loads are cut and fed green to the cows. As soon as the silo is filled, silage feeding is begun, 30 pounds per head per day being the usual amount fed in the barn together with what alfalfa hay the cows will clean up in the corral.

During the time the corn has been growing, another later crop of silage is also under way, a patch of milo always being grown for this purpose. This is not ordinarily ripe enough to silo till the latter part of September or the first of October. By that time, the corn silage has

been fed out to a considerable amount and there is room in the silo for a good deal of milo. This is added in a sufficient amount to again fill the silo, care being exercised against siloing the milo before it is well ripened. Mr. Guill explains that while it takes the cows a day or two to get accustomed to the change from Indian corn to milo silage they do as well on one as on the other in a short time.

Even with Mr. Guill's extra precautions, his silage supply begins to run low early in the spring. For succulent feed in February, March and April he plants a field to rye each October. On new land, it is necessary to give the field a full seeding, but the next year it is allowed to volunteer with a little additional seed harrowed in. The rye field furnishes a good safe pasture for the cows; and when the season is favorable and the growth rank, it is sometimes cut green and fed to the cattle in the corrals. It is an inexpensive crop to grow and provides green feed till well along in the summer, without danger of bloat.

Being an advocate of good feeding practices, Mr. Guill naturally realizes the importance of good alfalfa hay, believing that good alfalfa can be seriously damaged in the hay making process. He cuts his alfalfa just as it is beginning to blossom and puts it into the shock before it has had time to dry out badly on the ground. By this method the greater portion of his hay cures in the shade. By putting into the barn while there is still considerable moisture in it, the loss of leaves is reduced to the minimum; and it is much more palatable to the cattle.

Mixing Barley and Alfalfa Hay for Cows

[Written for Pacific Rural Press.]

While some barley has been advocated for the dairy cow ration in connection with alfalfa hay and silage or beet pulp, it has probably been seldom furnished in the way that A. J. Morey of Orland fed it to his dairy cows the past winter. Ordinarily Mr. Morey depends upon alfalfa hay as the sole roughage for his cows; but last fall he had a small lot of barley hay which he mixed with his alfalfa in the proportion of about two parts alfalfa to one part barley hay. In feeding this mixed hay ration the past winter, together with about one pound of dried beet pulp to every four or five pounds of milk a cow produced, he has had surprisingly

good results; and in the future he expects to continue mixing the two varieties of hay in the barn.

Another benefit which results from the use of barley hay in the dairy ration on Mr. Morey's 20-acre ranch, is its adaptability as a rotation crop. With Mr. Morey rotation of crops is an important factor, as with all alfalfa farmers; but because of his small acreage, it is difficult to rotate and at the same time provide sufficient feed for his herd. With the barley hay followed by a crop of corn for silage, Mr. Morey believes he can solve his problem in this regard and expects to erect a small silo the coming year on that account.

SAVES LABOR FEEDING CHOPPED FEED.

[Written for Pacific Rural Press.]

The awkward way some people have of handling silage and chopped hay when feeding to cows, makes them complain of the high cost of labor because they make that labor inefficient. S. J. Smith of Stanislaus County wastes no labor in this respect. The hay barn is separated from the milking barn by only an alley. A wooden track four feet wide runs from under the chopped-hay storage straight through the

center of the cow barn where two lines of cows face the center alley, which is very little wider between mangers than the car. At the other end of the cow barn the track runs straight to the silo, so the car can be run directly under the chute. The car is 4 feet deep, 4½ wide, and 8 feet long, holding a day's silage feed for 72 cows per load. In the morning after cows are turned out, the silage is distributed, and then chopped hay put on top.

It is all important that the cow relish her feed. Feed her both roughage and concentrates.



Borrow Money at 6 per cent and make 30 per cent with an IDEAL GREEN FEED SILO

Now is the time to place your order for an IDEAL GREEN FEED SILO. Put that first crop of alfalfa into it. It won't make good hay, but the alfalfa, foptail and weeds will make excellent silage. Have silage to feed this summer when green feed is gone. You can thus increase your milk profits 25 per cent and reduce feeding costs 15 to 20 per cent during the coming dry season. The silo will be empty in time to fill with corn this fall for winter feeding.

Refrigerator Type Doors; Air and Water Tight Foundation Joint; Proper Design; Selected Materials and Painsstaking Workmanship make the Ideal Green Feed Silo a Safe, Profitable Investment for the Dairyman or Stock Raiser. Send for Catalog.

Acme Feed Cutter and Silo Filler

Mounted on Truck Low Feed Table Rigid Construction
All Steel Frame Automatic Feeding Device Light Running
Positive Safety Device Reversible Feed Rollers Easy to Handle

EQUIPPED WITH ALFALFA MEAL

MAKING ATTACHMENT

An excellent quality of alfalfa meal can be produced on this machine at a cost not exceeding half of that for baling.

SAVE \$3.00 PER TON ON DRY FEED Run it through an Acme Feed Cutter so that the coarse hay as well as the fine will be entirely consumed by your cattle.



Built in Seven Sizes

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EVERYTHING FOR THE DAIRY

101 DRUMM STREET

SAN FRANCISCO

ORMONDALE SHORTHORNS



Golden Goods, Jr.
Herd Sire.

Our 1916-17 offering of yearling bulls is small but select. They are all heavy boned, solid red in color and of Scotch and Scotch-topped breeding. Suited for either the range grower or breeder.

DUROCS.

Our Durocs are of the big type, with big bone, well-arched backs and carrying good hams.

We have a few head of service boars, now ready for service, solid red in color and out of prize-winning animals.

Every Animal Positively Guaranteed

Whether you buy or not, visit our ranch, 7 miles from Palo Alto on Woodside Road. We welcome inspection. Prices and pedigrees on application.

Shorthorn Cattle
Duroc-Jersey Swine

ORMONDALE CO.

E. D. No. 1
Redwood City,
California.

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Shorthorn Cattle, Shropshire and Merino Sheep



King Lancaster, sired by King Edward,
grand champion bull State Fairs,
1909-10-11.

Shorthorn Bulls for Sale, sired by such noted bulls as King Lancaster, Knights Perfection, Greenwood Knight and Greenwood King. Nearly all offsprings of the famous King Edward.

These Bulls are conceded to be the best offering ever made from the Hillcrest Stock Farm.

For Particulars Apply
T. S. GLIDE
Proprietor
Davis, California

BULLS - Shorthorns - HEIFERS

REGISTERED AND TUBERCULIN TESTED.

Animals of either sex ready to deliver in car lots or singly.

H. L. & E. H. MURPHY,

Perkins, Cal.

Selling Cows on Testing Records.

[Written for Pacific Rural Press.]

If anyone has any doubt of the benefits of cow-testing associations they should have talked with A. J. Morey of Orland, Glenn County, early in March of the present year, at which time he had just sold four grade Jersey cows for \$150 each.

Two years previous to that time Mr. Morey had paid a good long price for these same four cows himself, having purchased them from N. H. Locke in San Joaquin County because of the high yearly production they had made in the San Joaquin County Cow Testing Association.

During the two years Mr. Morey had them they each made approximately 400 pounds of fat a year and it was this fact that resulted in the high price received for them.

"All I did was to set a price on the pick of my herd and turn the testing book over to the buyers. They selected them on the records, and while they were the best cows I had, I have heifers from all of them that will be freshening next fall. Naturally I hated to part with them and had to get a good price, but I consider them cheap cows to the buyer just the same."

When Mr. Morey started dairying a few years ago on his 20-acre ranch, he picked up the best looking grade cows that he could find in the district; but discovered through private milk weighing and testing that his herd average was only about 250 pounds of fat a year. At that time

there was no cow-testing association in his district.

Deciding that a 250-pound cow was not good enough, he sold the lot and purchased a smaller number of higher producing cows. He bred these to as good a bull as he could get; and as soon as the Glenn County Cow Testing Association was started he entered his entire herd. Besides increasing the value of his good cows, as shown above, he has weeded out his poor ones, with the result that his herd average is now better than 315 pounds in a ten-month lactation period.

While he could have weeded out the poor cows just as well with his own weights and tests he realizes that such records are not given the consideration that those of a disinterested tester are. By making use of testing records in both his buying and selling, Mr. Morey has been enabled to buy a number of purebred heifers, expecting ultimately to have nothing but purebreds.

MENDOCINO STOCKMEN ORGANIZE.

[Written for Pacific Rural Press.]

About sixty of the prominent stock raisers of Mendocino county met at Ukiah last Saturday and organized the Mendocino Stock Raisers' Association by adopting the by-laws of the Humboldt Stockmen's Association with but few changes.

The primary object is to prevent stealing; and Secretary T. B. Hicks stated that coyotes, sheep-killing dogs, and trespassing would come in for consideration.

C. E. Robertson, organizer of the Humboldt Stockmen's Association, explained the objects of the meeting and spoke of the benefits that the peach growers, raisin growers and the musco ranches had received by co-operation in selling their respective products.

District Attorney Hale McCowan stated how hard it is to get the necessary evidence to convict stock thieves.

J. D. Coffman, of the Forest Service, made an address, and his suggestion that the association pass a resolution in regard to ground squirrels and coyotes was adopted.

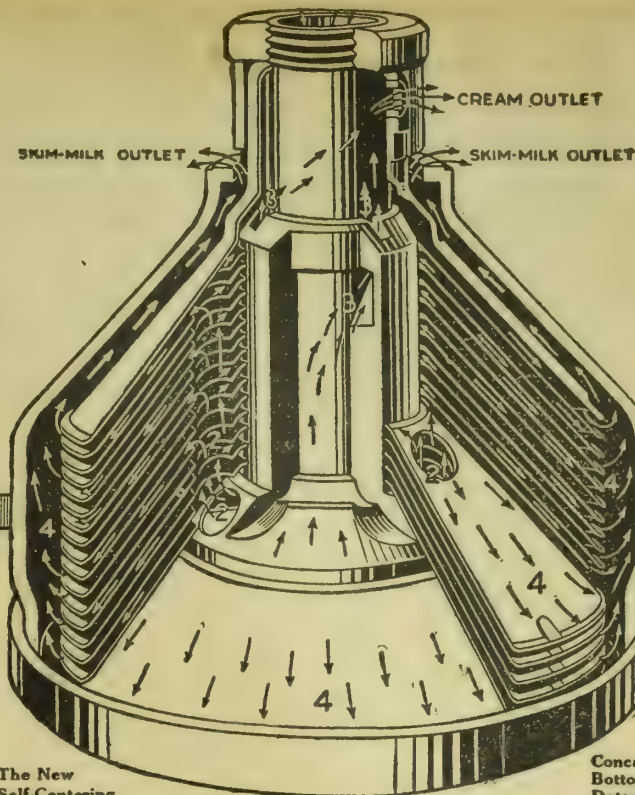
Most of the members present handed in a list of their marks and brands to the secretary; and it is the intention later to have all the members' marks and brands compiled in book form and a copy given to each member to make it easier to trace each other's stock when they stray from their own range. About 45 per cent of the range stock of the county is already enrolled.

ALFALFA AND COCOANUT.

To the Editor: How much alfalfa meal can be fed to a milk cow when only alfalfa and cocoanut meal is used in connection with hay.—A. C. C., Hayward.

[Answered by G. A. Brown, El Monte.]

If you are feeding grain hay, 20 pounds daily of alfalfa meal could be fed to good advantage. Soak 12 hours and mix the cocoanut meal with it at time of feeding. I use chop to lighten the beet pulp and cottonseed meal, which I feed together, and to make them more digestible.



The Supremacy of the NEW DE LAVAL

THERE may be some question as to who makes the best wagon or the best plow or the best watch, but when it comes to cream separators the supremacy of the De Laval is acknowledged at once by every fair minded and impartial man who is familiar with the cream separator situation.

Thousands and thousands of tests, the world over, have proven that the De Laval skims the cleanest.

The construction of the New De Laval keeps it in a class by itself.

It outlasts and outwears all other makes by far, and can be run with much less cost for repairs.

The world-wide De Laval organization, with agents and representatives in almost every locality where cows are milked, ready to serve you, insures that the buyer of a De Laval will get quick and valuable service when he needs it.

More De Laval's are sold every year than all other makes combined.

The New De Laval has greater capacity than the 1916 style, is simpler in construction, has fewer and interchangeable discs, is easier to wash, and the skimming efficiency is even greater.

Each New De Laval is equipped with a Bell Speed Indicator.

Order your De Laval now and let it begin saving cream for you right away. Remember that a De Laval may be bought for cash or on such liberal terms as to save its own cost. See the local De Laval agent, or if you don't know him, write to the nearest De Laval office as below.

New Catalog will be mailed upon request

DE LAVAL DAIRY SUPPLY COMPANY

LARGEST DAIRY SUPPLY HOUSE ON THE PACIFIC COAST. We specialize in Alpha Gasoline and Distillate Engines, Ideal Green Feed Silos, Irrigation Equipment, Centrifugal and Deep Well Pumps and Alpha Spraying Outfits. Send for special catalog.

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50,000 BRANCHES AND LOCAL AGENCIES THE WORLD OVER

THURSDAY APRIL 19

is the day we will sell that splendid herd of

40 Registered Holsteins

6 Grade Jerseys

for H. E. Cornwell, on his farm, two miles north of Modesto, California, on Prescott Road.

REMEMBER THE DATE

Sale under management of

California Breeders Sales and Pedigree Co.

C. L. Hughes, Sales Manager,
Sacramento, Cal.

Auctioneer—Col. Ben A. Rhoades,
Los Angeles.

HOLSTEIN FOLKS—Come to the meeting of California Holstein-Friesian Association, Hotel Hughson, Modesto, 8 p. m., Wednesday, April 18.

H. B. THORNBERRY

Dealer in

JACKS, JENNETS

and

Gaited Kentucky Saddle Horses
Largest Importer in the United States.
P. O. Box 670, Stockton, Cal.

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Blake, Moffitt & Towne
37-45 1st St., San Francisco
Blake, Moffitt & Towne, Los Angeles
Blake, McFall Co., Portland, Ore.

D. O. LIVELY STOCK FARM'S FIRST ANNUAL SALE of Registered Hereford Cattle

Will be held under the auspices of the AMERICAN HEREFORD CATTLE BREEDERS ASSOCIATION at Mayfield, California.

Thursday MAY 3, 1917

The offering will be made up of sixty-five head—twenty bulls and forty-five females. A splendid opportunity to start a purebred herd.

WRITE FOR CATALOG

D. O. LIVELY STOCK FARM, 215 Hobart Bldg., San Francisco

REGISTERED SHORTHORNS

REGISTERED BERK SHIRES

HOPLAND STOCK FARM

Hopland, Cal.

RANGE BULLS, BOARS AND GILTS

San Francisco Office,

1210 Flood Building

Live Stock and Dairy Notes

Livestock breeders all over the State are invited to send on postal cards, notes regarding their sales, State and County Fair intentions, new stock, etc.

DAIRYING.

The Willowwood herd of 60 registered Jerseys, owned by C. G. McFarland, Tulare, is to be dispersed at public sale, May 17. Mr. McFarland recently sold his place near Tulare and bought 160 acres near Waukena. He has for several years kept up regular Register of Merit test work, and has a fine, high-producing herd. The sale will be under the management of California Breeders Sales and Pedigree Company, and Colonel Ben A. Rhoades will be auctioneer.

The Merced County Cow Testing Association was organized late in March.

The Holstein Friesian Association of America offers a trophy or silver cup for the best herd of registered Holsteins at the Butte County Spring Exposition; and 15 per cent cash on the general classification at the State Fair. The first prize winner in the State Fair butter-fat contest will get a trophy or silver cup if a registered Holstein.

On April 1, 1916, the average production of the ten highest cows in the aged class (five years or over) of Guernseys was 18193.4 pounds of milk and 948.98 pounds of butter fat. On April 1 of this year the production of the ten highest cows in the same class is 19056.8 pounds of milk and 976.15 pounds of fat, showing an increase of 863.4 pounds of milk and 27.17 pounds of fat. During the year there has been an increase of 300 records in class A with an increase in fat of 6.27 pounds.

A new world's champion junior four-year Holstein is Wandermere Belle Hengerveld, owned in Michigan. Her record is 42.64 pounds butter from 570 pounds milk in a week.

De Lancy Lewis of San Jose reports three good records for three-year Holsteins: Tulista Johanna Princess, 27.90; Finderne Soldene Fayne Korndyke, 21.25; Miss Wayne of Yuba, 25.33. The Tulista heifer was taken direct from pasture for the test. She produced 98.1 pounds milk in a day and over 100 pounds of butter in the month. She freshened with twin heifers.

E. R. Frey of Byron, who has bred pure-bred Guernsey cattle for a number of years on a small scale, is contemplating the enlargement of his herd.

The Bridgeford Company of Knightsen expect to consign twelve

of their choice registered Holsteins to the Holstein sale to be held at the University Farm at Davis the first week in June. Among the lot will be a two-year heifer, whose four nearest dams average 34 pounds and a yearling heifer out of a 29-pound cow and sired by a 30-pound bull. All of their female offering will be bred to their senior herd sire, King Segis Pontiac Alcartra Abbeckerke.

McAlister & Sons of Chino report the record of K. P. Tola, junior four-year daughter of King of the Pontiacs: 26.94 pounds butter in seven days and 108.64 pounds in thirty days.

Gotshall and Magruder of Ripon have had enough confidence in the pure bred dairy business to establish a herd of registered Holsteins and develop one of the most modern dairy ranches in the southern part of San Joaquin county. During 1916 this firm purchased foundation cows at most of the Holstein sales, selecting animals carrying the blood of King Segis and of King of the Pontiacs whenever possible, they being mostly A. R. O. cows. For a herd sire they purchased King Pontiac Ormsby Segis, by King Pontiac Netherlands Segis and out of Cristeria Overton Mechthilde Fourth, with a record of 31.70 pounds butter and 463 pounds milk. The herd now numbers 35 head, but this will be increased to 100 head.

C. H. Geer of Modesto has completed his third 250-ton silo this season. He finds corn silage and alfalfa a fine ration for the 210 cows he is milking.

The Humboldt County Dairymen's Association is resisting the proposition of buyers of dairy stock for beef, to consider the loss in butchering 54 per cent instead of 50 per cent.

Guy H. Miller of Modesto reports sale of the registered Jersey bull Juanita's Interested Fox, first prize as a junior calf at Sacramento last year and out of the cow Juanita of Venadera, rst in Register of Merit class at 1916 State Fair, to J. H. Holgate of Turlock. He has also recently sold bulls to parties in Winton, Merced county, and at Denair.

E. E. Freeman, Holstein breeder of Modesto, has recently purchased the bull Segis Pontiac De Kol Burke Dutch from A. W. Morris & Sons to use as herd sire on his choice lot of registered females.

PACIFIC DAIRY MACHINERY CO.

56 CLAY STREET

SAN FRANCISCO



GET RID OF LICE

Let your hogs rid themselves of these blood sucking pests and keep free from cholera.

Churns
Coolers
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Supplies
Barn
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New Idea
Hog Oiler
Enormous
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Write for
Full
Particulars

Another California Champion

SIRED BY

Dutchland Sir Pietertje Creamelle



Pauline Inka Dekol Creamelle, Milk
423.4 Pounds, Butter 24.43 Pounds,
Test 4.62 Per Cent, Sr. Yearling.

His ten daughters now in milk have records at 2 years or younger of 20 pounds. The best five average 22.22 pounds, including two State Champions in the Junior 2-year-old class.

A few sons of Dutchland Sir Pietertje Creamelle now ready for service. They will bring up the production of your herd.

WRITE FOR PEDIGREES AND PRICES.

F. STENZEL, San Leandro, Cal.

Breeder of High Test Holsteins.

G. A. Velthoen, who has a small herd of registered Holsteins near Modesto, advises us that he expects to add to his present herd during the present year.

AM GOING EAST AGAIN. Place your order with me now for

Shorthorns and Herefords

SINGLE OR CARLOAD LOTS

(Strictly commission basis.)

R. M. DUNLAP

Desk A, 217 Underwood Bldg.,
SAN FRANCISCO.

TAM WORTHS

(The Bacon Hog)

Largest Herd in the State

DUROC-JERSEYS

Mature Stock and Weanlings of both sexes.
Sure to please.

SWINELAND FARM,

W. O. Pearson, Prop., Woodland, Cal.

REDWOOD TANKS—SILOS.
Thirty-five years in this business in Stockton.—A 500-gallon tank, \$12.00. A tank 6 ft. x 2 1/2 ft., \$10.00. Other tanks equally cheap. I deal direct with the consumer, saving 10% to 25%. All sizes in stock. Clear dry redwood direct from the mill. Write for price today. Latest improved machinery. Doors, Windows, Frames, Mouldings.
E. F. WILSON, STOCKTON, CAL.

RHOADES & RHOADES

Expert Live Stock Auctioneers.

Purebred Stock Sales a Specialty

Sales Conducted in All Parts of Calif.

Ben A. Rhoades, Auctioneer

1501-3-5 So. Main St., Los Angeles, Cal.

M. M. Holdridge, proprietor of the Creamcup herd of registered Holsteins, reports the sale of two registered bulls to Mr. Avilla of Los Banos. Some very creditable records were made in this herd during the early winter months.



Goldie Donald, purebred Hereford heifer, to be sold among others at the D. O. Lively sale, Mayfield, May 3, 1917. Remember the Hereford breeders' meeting at the Palace Hotel, San Francisco, on the evening of May 2.

Innisfall Farm, Alexander & Kellogg, report the sale of two bull calves last week, one out of an imported heifer, to C. J. Kingry of Highland Springs, and the other out of an Eastern cow to A. G. Watkins of Bellots. As there is to be a classification for milking Shorthorns at the Chico Fair in May they will show a representation from their herd there, including their herd bull Glenside Royal, and two imported English cows. Bellvue Daisy, who won the silver cup at the Solano County Fair last year, has just completed her year's record of 8468.7 pounds milk and 321.67 pounds butter fat. In addition to this she suckled her calf for a month before beginning the record. Her heifer calf weighed 880 pounds as a yearling. They have a four-year cow that is now milking 50 pounds a day on dry feed. She has a fine roan bull calf that they will show at the State Fair.

A. B. Humphrey of Escalon reports that he has eight of his registered Guernsey cows on yearly test and that he expects to complete some very creditable records during the next couple of months.

W. J. Hackett of Ceres now has eight of his registered Jersey cows on yearly, semi-official test.

C. D. Hayworth, Jersey breeder of Modesto, has made recent sales as follows: A yearling bull, sired by Polly's Fancy Interest Lad, to O. McGee, Modesto; a nine-months bull, to Henry Knowland, Modesto; and a six-months bull calf to Robt. Rupp of Siskiyou county. Mr. Hayworth now has sixteen Register of Merit cows in his herd.

J. W. Benoit of Modesto, breeder of registered Holsteins, has a fine lot of young heifers sired by his herd bull, El Preda Wayne Colantha. This bull is characterized as the only one living whose dam and sire's dam average 5.1 per cent fat. Through this bull Mr. Benoit feels certain that he will develop a strain of high testing cows.

D. C. Carmode of Bishop, Inyo county, is getting started with registered Ayrshires. His herd sire is Willowmoor Sentinel the Fourth. Three females are also of Willowmoor blood; and the young bull Sierra Peter Pan is sired by Willowmoor Peter Pan the Twenty-sixth.

BEEF, HORSES, SHEEP.

W. E. Premo of Porterville has recently sold 1,000 steers to the Western Meat Company at \$120 per head.

E. H. Murphy of Perkins writes: "We have just shipped seven young Shorthorns to the Little Shasta Valley in Siskiyou county. I went with this stock to see the conditions of that locality and the stock they raise. Cattle raising is the principal industry of the valley. The native grasses, which carpet the floors of the valley, are just starting to grow. This feed grows three to five feet high and makes excellent hay as well as pasture. We are shipping a bred gilt to Nevada and a bull to Edinger & Johnson of Sacramento."

Wealthy livestock men of Colorado are in trouble, being charged with replacing sound horses accepted for war purposes with a cheaper lot, the difference in value being estimated at \$400,000.

CARRUTHERS SHORTHORN OFFERING.

[Written for Pacific Rural Press.]

One of the Shorthorn attractions of the year is promised at Mayfield, May 2, when W. M. Carruthers will hold his first annual auction sale of registered Shorthorns.

With unusual care and judgment Mr. Carruthers has selected in the past two years as choice a lot of foundation stock as can be well gotten together; and it is largely the progeny from this selection that will be offered in his first sale.

Being a strong believer in Scotch-bred Shorthorns, Mr. Carruthers has assembled animals from such great tribes as the Orange Blossoms, Ringmasters, Whitehall Sultans, Nonpa-

rells, and Choice Goods. The mature cows in the offering are all bred and safe in calf to his herd sire, Count Glory, a son of Count Avon, who was by Avondale, and he by Whitehall Sultan, and to Sultan Mayflower, a grandson of Whitehall Sultan, now in use at the University Farm at Davis.

At least four striking young herd headers of straight Scotch families are found among the bull offering, which also includes some two-year old straight Scotch bulls of a useful sort.

But it is in the heifers that one finds the greatest prospects; and it may be honestly said that never have as many choice Scotch heifers been offered to California buyers. With the exception of three head, all of last year's crop of heifers are included in the sale. Of the thirteen head, ten are by Fair Knight, a son of Choice Goods, and the others are by Sultan Mayflower, a son of Sultan Stamp. There are several likely show prospects in the lot; and all hold out great hope for the future. The entire offering is made up of individuals which cannot help but benefit the breed if intelligently cared for.

A NEW CALIFORNIA CHAMPION.

Pauline Inka Dekol Creamelle, a senior yearling Holstein heifer, owned and bred by F. Stenzel of San



Lorenzo, has completed a seven-day official test with a record of 423.4 pounds milk, 24.43 pounds butter, test 4.62 per cent, beating by over a pound all previous State records for the junior two-year old class.

This heifer's dam is Pauline Inka Dekol Kate, who has a record of twenty-six pounds as a four-year old. Her sire is Stenzel's young herd bull, Dutchland Sir Pietertje Creamelle, who was selected for the high test breeding in his pedigree. That he has power to transmit high production is proved by the fact that his ten daughters now in milk have records at two years or younger averaging twenty pounds. The best five of these average 22.22 pounds. They include two California champions, the present title holder and Clothilde Pontiac Creamelle, who last year made 22.52 pounds.

Mr. Stenzel and his manager, J. J. Sullivan, are justified in their expectation that Dutchland Sir Pietertje Creamelle will make Holstein history in California. He already has a record to be proud of.

STANFORD RANCH HOLSTEIN SALE.

Great interest has been aroused among breeders and dairymen by the announcement that the entire herd of 300 pure-bred Holsteins on the Stanford University Ranch at Vina, California, is to be sold at auction, June 5, 6 and 7, with M. H. Tichenor of Palo Alto as sales manager. Recent tests in the herd have developed a number of fine records.

The following statement by Geo. W. Wendt, chief herdsman at Vina, will be of particular interest: "After spending practically all my life among Holstein cattle, among some of the greatest herds in the East as well as the West, and after three years in charge of the Stanford herd, I am prepared to say that it is doubtful if ever before in the history of the breed in this country has a herd of its high standard been placed at public auction. I base my judgment upon my thorough knowledge of their production as well as their quality and individuality. It is what must be expected as a result of thirty-two years of constructive breeding."

During the summer months cows should not be kept in the barnyard over night. They should have a clean place to lie.

All cows should be treated with uniform kindness, and fed and milked at regular times by the same person, if possible.

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FOR
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OF
CATALOGUE

Catalogue of
**SCOTCH PEDIGREED
SHORTHORN CATTLE**
from
CARRUTHERS FARMS
SALE AT CARRUTHERS FARMS,
MAYFIELD, CALIFORNIA.
1 O'Clock Wednesday,
MAY 2, 1917.

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FOR
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CATALOGUE

GREATEST SHORTHORN SALE

ever held in the West from one farm. In this sale will be cows of rarest of Scotch breeding. Such stock can not be bought in the East, as there never before has been Count Avon stock sold at public auction.

There are eight yearling Bulls and Heifers sired by Sultan Mayflower—a bull purchased at the Harding sale by Leslie Smith, to head the Great Meadowlawn herd, which was known all over the United States for its great collection of Shorthorn matrons.

There will be ten Cruickshank Cows in the sale, which will be hard to duplicate in any herd for conformation, smoothness, size and finish.

The yearling heifers and bulls sired by a grandson of Choice Goods are large, smooth and thick, mostly all of Scotch breeding, and ought to please the eye of the most critical judge.

All the cattle are in good flesh, and anyone making a purchase to strengthen their show herds this year will have no trouble to get them in shape by fair time. This is foundation stock, tuberculin tested, and vaccinated for blackleg.

Visitors will be welcome at the farm any time before the sale.

Carruthers Farms

HEARST BLDG., SAN FRANCISCO, or MAYFIELD, CAL.

Col. Carey M. Jones, Auctioneer

Watch announcement for pedigrees next week.

The Board of Trustees of the Leland Stanford Jr. University begs to announce a complete dispersal sale of the Stanford Herd of 300 Registered Holsteins at the Stanford Ranch, Vina, Calif. **June 5, 6 and 7.**

FOR INFORMATION OR CATALOG, ADDRESS

M. H. TICHENOR
SALES MANAGER
PALO ALTO, CAL.

Hauser's Digester Tankage

GIVES GREATEST VALUE FOR LEAST MONEY.

IT MAKES THEM FAT.

Hauser Packing Co.

Los Angeles

Fast Cattle Vaccination.

[Written for Pacific Rural Press.]

Vaccination was under way at the rate of 50 head per hour on the Four C ranch in Inyo County when seen by the writer, March 23.

About 35 steers are first driven from the large corral into a small corral, 28x12 feet. At one end of the small corral, is a gate which opens into a gangway, 28 feet long and two feet wide.

About seven steers are driven into the gangway at one time. At the head of the gangway is a planked door, three feet high with a V in the center to fit the under side of the animal's neck. Directly above is a swinging iron bar with a V upside down, to fit the top of the animal's neck.

As the steer advances, a sliding bar is placed across the narrow

gangway behind him, thus preventing his retreat. When as far as he can go, with his head hanging over the door, the iron bar is brought down over his neck and clamped. Sufficient space has been left in one side of the gangway for the vaccinator's convenience. When vaccinated, the iron is raised, the door opened and the animal allowed to go free.

A similar iron, which is hung on the front or face of the door, with a V in the center to fit the animal's nose, is used in addition to the other for dehorning.

Four men, including the vaccinator, with a little added effort, could easily turn out 60 head per hour. The idea is claimed by Mr. Farrar, the foreman.—H. J. B.

Girl Wins in Hog Contest.

[Written for Pacific Rural Press.]

The Imperial Valley's first annual hog raising contest, held the middle of March, was a very interesting affair. Miss Barbara Leach of Westmoreland carried off first prize with 54 contestants. Miss Leach is a school girl 18 years old, yet she has proved herself the most successful hog raiser in the Imperial Valley. She won both in the profit per hog and in the increase in weight since the contest began. She has shown the older hog raisers of the valley that it does not pay to put a pig on alfalfa and rolled barley alone. She made a profit per hog of \$7.55 by feeding ground milo maize, tankage, and alfalfa. The cost of feeding under this method

per pound of gain was 6 cents. She has been offered 14 cents per pound for her herd of Durocs and has made more than 100 per cent by studying the feeding of hogs. Miss Leach started last year to keep accounts of what it cost to feed per pound of gain. She found that by feeding rolled barley and alfalfa pasture, it cost her 7.6 cents per pound the pig gained, the profit per hog being \$1.95. She next tried rolled barley, coconut meal, and alfalfa. This cost 6.7 cents per pound of gain. The profit on these hogs was \$4.37. Then she tried her present method which put her in the lead as a hog raiser in the Imperial Valley.

More Profit From Same Pasture.

[Written for Pacific Rural Press.]

One of the most serious conditions confronting land owners in most all of the older hill dairy sections along the coast is how best to restore the pasture lands that were once so productive of green feed but which are yearly growing less productive on account of over-pasturing.

It is admitted by those with experience that the problem cannot be solved in one or two years; but that it will require much time and study; and there is nobody more thoroughly convinced of the logic of this statement than J. D. Williams of Bodega, Sonoma county, who is admitted by people in his district to be one of the best farmers as well as one of their most successful dairymen.

Mr. Williams started a good many years ago to conserve the fertility of his pasture lands by reducing rather than increasing the number of cattle carried on a given amount of land. He realized that close feeding of grass during the growing season not only damaged the plants themselves but prevented them from re-seeding the land for future years as well. From early observations he saw that in many cases half the number of cattle on a given piece of land would produce as much or more because the larger number had to exist on the same amount of feed as the smaller number, and as a result were not nourished as they should be.

Pasture on Wornout Grain Land.—But simply being conservative in the number of cows he kept was not alone sufficient to guard against the future. He believed that the continuous cropping of the more level lands to grain and hay must some time wear out the soil; so he introduced a system of pasture rotation on his lower lands that has been highly satisfactory. The first field to receive this treatment was seeded twelve years ago to a mixture of Italian rye grass and clover seed, seeding being done after the first rains of the fall. There were twenty acres in this field, which had quit growing good grain.

The first year after seeding the entire field was allowed to ripen so that it might become better seeded before pasturing, as the stand was rather thin. For the next twelve years that piece was pastured, sometimes heavily, and besides it always grew a good crop of wild hay till 1916, when it was again getting pretty thin. A part of the field was plowed up that year and seeded to oats, which yielded a good crop, and the rest of the field was left to re-seed itself, which it did, with the result that it will produce a heavy growth of grass the coming spring.

Mr. Williams believes that by rotating pasture lands with grain and by spreading the manure with a manure spreader before the heavy winter rains start, most of the hill pastures can be kept producing good crops. But he is also firm in his belief that it is penny wise and pound foolish to overstock pasture under any circumstances.

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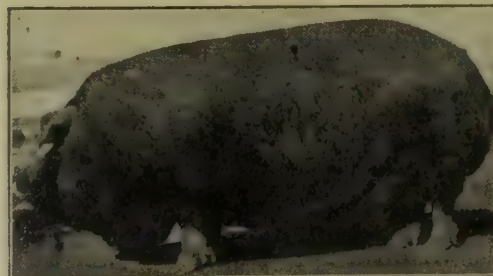
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Veterinary Queries

Thousands of Cows Tuberculin Tested.

To the Editor! What has the State Veterinarian been doing about tuberculin testing under the new law?—Subscriber.

[Answered by State Veterinarian Chas. Keane.]

We are able to give you this information as we compile the work done each month. Consequently the following figures show the work which has been completed since the time the law became effective, October 1, 1916, up to and including February 28, 1917: Total number of animals tuberculin tested, 15,439; total number of reactors, 2,618; total number of premises on which tests were made, 348. When tests are applied in a dairy herd all animals in a herd are tested, including cows which are milking, as well as the dry stock.

The work is running along very smoothly and there is apparently, so far as we can learn, no decided opposition to the enforcement of the tuberculin testing provisions of the law. Unfortunately our facilities are inadequate in as much as the appropriation provided for this work, namely \$10,000, is so small that we can only cover a small amount of the ground. At the present time we have some 7,000 requests on hand for such testing, and strange to say many of these requests come from dairymen who do not have to comply with the tuberculin testing provisions of the law, in other words, from dairymen who sell milk wholesale or who sell cream to creameries. If the Legislature provides us with the appropriation that we are asking to cover all this work properly, we hope to be able to comply with all requests, whether from those who are affected by the tuberculin testing provisions of this law or otherwise, as we feel that it will be a means of showing many dairymen the conditions of their herds, and with the encouragement and assistance that this department can lend them will afford such dairymen the opportunities of cleaning up tuberculosis in their herds at minimum expense.

March 13, Sacramento.

Teats Do Not Give Milk.

[Answered by Dr. H. B. Winttingham, Petaluma, Cal.]

To the Editor: A young cow had her second calf a month ago. Three teats have not given any milk; the fourth is O. K. A veterinarian drew the milk with a tube and we used it for a week. A few days ago her udder seemed to fill and now we get a little from the teats, but it is not milk. We have doctored her all the time—camphor and oil on the bag night and morning. Has good appetite. Udder still caked badly on one side. Would the milk from the one good teat hurt anything if fed.—J. E. P., Suisun.

Do not use this milk. Give two drams potassium iodide in water twice a day.

Horse Thin and Coughing.

[Answered by Dr. H. B. Winttingham, Petaluma, Cal.]

To the Editor: A horse grows thinner all the time and coughs. The discharges from the mouth are very free.—M. H. L., Santee.

Any animal which harbors a disease dangerous to human beings should be destroyed. Have a qualified veterinarian examine this animal. An application to the State Veterinarian should bring results.

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Raising Poultry for Profit

COLONIZE THE SITTING HENS.

[Written for Pacific Rural Press by Susan Swaysgood, Pomona.]

This month the hens will want to set; and if there are several of them, it makes quite a chore to look after them in separate places. Nearly every farm has an old shed or out-building that can be used for this purpose; and if it is fixed up right, a great number of chicks can be hatched with a few good hens. I have hatched as many as 400 chicks with hens, and they are always the best and strongest chicks, better than any incubator that ever was invented. I will give you the dimensions for making a 12-foot incubating box, and if you need a larger one you can add on to it. Now if you happen to have a shed that is 12 feet each way, it can be made to accommodate 20 hens, and 20 good hens can hatch enough chicks to pay for all the trouble of making the box. For a shed 12x12 feet, build a box 18 inches high, 10 feet long, and 8 feet wide, without top or bottom. Run partitions a foot apart the 8-foot way, making compartments 12 inches by 8 feet. Divide these compartments in two, at the center, making them 12 inches by 4 feet. The divisions can be made of wire if liked. This will give you 20 compartments. Nail an inch board 6 inches wide and 10 feet long across the top, 18 inches from each side, tacking it to each partition. Hinge doors to these boards, having the doors 18 inches by 3 feet, except one, which will have to be 18 inches by 4 feet. In this way each door covers three nests, except one which covers four nests. The space in the center, between the two 6-inch boards, may be covered by 2-inch wire netting, laths or strips of boards. This makes the top. The bottom is the ground, which should be clean and a little moist, but not cold and wet.

When you want to set a hen or two, raise up your covers and put your nests in. Use a couple of bricks or stones to keep your nest material from working away. Put a few tobacco stems or a little insect powder in the dust or dirt underneath and if there is any danger of mites or ticks put half a gunny sack in each nest that has been well sprinkled with coal oil. Over this put a shovelful of dirt and a little soft straw; then your eggs. Put feed and water at the other end of each run and dig up the ground so that each hen can dust herself when she gets off to feed. Change the water every day and when the hens are off take a look at the nests to see that there are no broken eggs. This gives a cool, light, quiet place for your hens. If they are put on these nests clean, they will keep clean and hatch the chicks with a minimum of labor.

Give the hens the same chance you would an incubator, test the eggs out and double up. Say you set three hens at one time, test the eggs about the fifth day for white eggs, seventh for brown, and if there are several infertiles, give all the eggs to two hens and reset the best

hen. Mark each nest with the date of setting and date they should hatch; then if memory plays you false, the record won't. If a hen breaks an egg, wash it off the other eggs as soon as discovered and see that none of the egg is left on the hen's feathers, as this may stick to more eggs and be the means or cause of more being broken.

CAUSES OF SMALL EGGS.

[By Susan Swaysgood.]

There are several reasons why hens lay small sized and unsalable eggs. They may be bred from a strain of hens that laid small eggs; and the remedy is to change strains. The next, and most frequent cause, is the too early maturing of the pullets, by feeding a ration that is too carbonaceous. In this case the remedy is to feed the chicks a rational, bone-making diet instead of a fat-making diet. A lot of people are feeding corn-meal and beef-scrap as a mash, and this matures Rhode Island Reds and all the larger breeds too soon before the frame is built. The result is weakness in legs, small eggs, and rather small body. Strange to say, it does not affect the size of body so much as it does the bone and size of egg. Another reason for small eggs is too fat hens. Some hens lay soft shelled eggs in a case of internal fat, others shell the eggs but they are small and almost devoid of yolk. In these cases, give your hens a dose of epsom salts every day for a week and feed a little less fat-making food and these hens will soon be normal.

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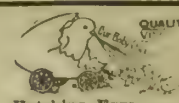
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BABY CHICKS from S. C. White Leghorns from trap-nested hens with records from 192 to 297 eggs. Also S. C. Black Minorca chicks and eggs. J. W. Benoit, Route C, Modesto, Cal.

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EASTMAN'S BRED-TO-LAY Barred Plymouth Rocks—chicks, eggs, cockerels. We hoganize and trapnest. Fairmead Poultry Farm, Fairmead, California. Box P.

SILVER AND GOLDEN PHEASANTS—\$5 pair; eggs, \$2.50 for twelve. Nine Silver Campine pullets, one cockerel. Mrs. R. S. Spaulding, Woodland, Cal.

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HATCHED CHICKS from Barred Rocks, R. I. Reds, White Leghorns. Good stock. Send for circular. G. L. Hawley, Madera, Cal.

CHICKENS, DUCKS, GEES, GUINEAS, Pea Fowl, Pigeons. Wm. A. French, 545 W. Park St., Stockton, Cal.

WHITE PLYMOUTH ROCKS—Hatching eggs from splendid layers. Mrs. J. B. Tupper, Route A, Ceres, Cal.

WANTED—A setting of thoroughbred Brahmas eggs. W. P. Blair, Exeter, Cal.

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MAAMOTH BRONZE TURKEY EGGS—\$3.50 per setting. Toulouse Geese eggs, 25c each. Mrs. M. Coghan, Walnut Creek, Cal.

BRONZE TURKEYS—Young Toms for sale. No more eggs till further notice. Free circular. Albert M. Hart, Clements, Cal.

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PEKIN DUCK EGGS—\$1.00 per setting; Toulouse geese eggs, \$3.00 per doz. L. D. Collins, Denair, Cal.

PEKIN DUCK EGGS—\$1.00 per setting. L. D. Collins, Denair, Cal.

*Mrs. Best's Letter.***LATEST IN KITCHEN FURNISHINGS.**

Dear Friends: A furniture shop lately displayed a kitchen in its windows which had some novel features of which I thought you would like to know. The color scheme was blue and white. It may sound impossible for a kitchen, but was very light and pretty and easily cleaned. The woodwork was white. This is an advantage, I believe, because if enameled it can be washed. On the floor was linoleum of a white field with blue squares in designs. Other linoleum was displayed, too. The inlaid linoleum sells at \$1.25 and up per square yard. It is more expensive, but the color of the design goes clear through, so as it wears the design remains. It pays in the long run to put down this kind in places where it is to be permanent. It also comes in softer colors and prettier designs.

Up from the floor about four feet was put a lighter linoleum of white with blue lines imitating bricks. This finished in a board around the room and from there to the ceiling the space was covered with oil-cloth in all-over patterns of Dutch tiles. Each square outlined a Dutch figure.

The windows had flounced muslin curtains with a short valance across the top.

The ordinary kitchen chair was painted and enameled white, and around the edge of the seat blue squares painted so that there was a blue and white border. An old-fashioned New England chair was also painted white and a small footstool of simple design was there to enable the little ones to lift things from the high oven. The gas stove was enameled white also and the tea kettle, pans and coffee pot also were white enameled with blue trimmings.

Before the war this white ware was easily procurable from strainer to water pitcher, but this last winter has seen a scarcity of it.

On the wall near the stove hung a wooden rack that held white crockery decorated with blue for sugar, salt, tapioca and all the spices. Nice cookie jars and jam pots come in the same ware. When one is outfitting a kitchen this white and blue ware is very attractive and not very much more expensive than the ordinary agateware. Especially for the bride such a kitchen as described would appeal to fit up and own.

There are many new labor-saving inventions on the market now to help make kitchen work easier and more agreeable. A mop or cloth of copper and twine woven together removes the stains from pots with scarcely no effort. A plate scraper with rubber edge is quiet in use and saves the nerves. A metal scraper, an inch broad, removes the burnt particles on the bottom of a sauce pan with ease. And then there are strawberry hullers, which you hold between thumb and forefinger to save staining the hands. Apple corers and potato eye removers, too, lessen labor. Sanitary baking testers come in paper packages to obviate the use of straws from brooms.

THE HOME CIRCLE

There is also a small flat bottomed egg beater which fits into a cup which enables one to beat a single yolk without wasting all of it. Doughnut cutters, too, are shown, from which the center piece, which cuts the hole, may be removed, leaving a round cookie cutter. All these and other novelties lessen the steps in the kitchen.

Rosabella Best.

HOUSECLEANING HELPS.

Draperies that cannot be taken down may be freshened by brushing them with a whisk broom lightly dipped in gasoline.

In washing windows, it is a great improvement to use the powdered article rather than the Bon Ami brick. Shake the powder into a pan of water and then wash the windows. As they dry there will be a fine coating of powder left on them, which is easy to remove and does not scatter and whiten the ledges, as often happens when too much is rubbed on from the brick.

Matting on the floor should be swept with a broom dipped in hot water and then sponged with a flannel cloth dipped in salt and water. Do not allow the matting to become wet, but wipe quickly.

Mahogany, or well-finished oak furniture if scratched and soiled is improved by washing it with warm water and a good white soap, followed by an application of furniture polish. Wash only a small part at a time, dry quickly and rub with the polish before washing more of the surface.

Window shades that are soiled or worn at the bottom are much improved by cutting off the old part and making a new hem for the stick. Lay the shade out on an ironing board and press with a hot iron. Then turn the hem and stitch on the sewing machine. Use a long stitch, so as not to cut the curtain.

THE HABIT OF HAPPINESS.

Among the many things that children should be taught is the habit of being happy. Every mother desires that good trait in her children, but not every mother realizes how largely it lies with her own training to produce it.

The small baby should be cared for in a manner to keep him in a normal condition. Feeding and sleeping should be regular habits and if made comfortable the baby will be happy.

The mother's own manner can do much to develop a serene disposition in the child and care should be taken that the mother's work does not tire her too greatly, or the child will suffer.

As the child grows older, crying or fretting should be discouraged and one way or another should be checked. Pouting or sulking are just disagreeable habits that it is the duty of the mother to stop—not only for her own comfort, but for the later happiness of the child.

As the child grows older, the atmosphere of the home will have its effect upon him—a quiet, harmonious, happy home cannot help but make a child sunny and sweet.

NEW KITCHEN UTENSILS.

A new model laundry basket has compartments at each end to hold clothes pins.

For mixing pie crust there are paddles with raised disks on their surfaces to properly combine the ingredients.

A new flatiron holder is on the market that clamps onto the end of the ironing board.

A glove with a dust cloth attached is expected to appeal to the housewife who is careful of her hands.

There is a new dish-washing machine that can be placed on the sink shelf, that draws its water supply from the water faucet through a rubber tube. It also drains into the sink.

*Floral Department.***CHRYSANTHEMUMS.**

You can begin putting in cuttings of chrysanthemums now, especially of the dwarf growing varieties, such as Major Bounafore, Lady Hopetown, Gockets crimson, Neary Mason, etc.

Do not plant divisions, for you can never get large flowers from them. To get large blooms, the growth should always be soft wood, and by planting divisions you start with a hard-wooded plant. As to the location of a chrysanthemum bed: It should be in an open, sunny position, and sheltered from strong winds. The soil should be enriched with well-rotted manure, as chrysanthemums are very gross feeders. Never grow "mums" in the same location two years running, as they exhaust the soil, and you will have inferior blooms. If you want to grow large single-stemmed flowers, make your bed four feet wide and as long as desired.

Put in the cuttings now in sharp sand, in a warm but shaded situation; a small greenhouse, or a cold frame is an ideal location. In making the cuttings, take the tips, and what is still as good, make one or two eye cuttings; that is, cut off just below a bud and leaf, and just over a bud and leaf cut off the lower leaf. Your cutting should not be over one inch in length; and if the growth is long jointed, one-eye cuttings will do just as well. Put in cuttings so that the top eye is level with the sand. In a short time this eye will develop a shoot, and the cutting will root in from three to four weeks. Do not let them remain long in the sand after rooting, or they will grow spindling. It is advisable to pot them into two-inch pots, and as soon as established plant them in the bed where they are to bloom. Do not leave them in the pots till they get pot-bound, for this checks them and if they receive a check they never make a large flower. If you do not care to pot them, they can be planted in the bed where they are to bloom as soon as rooted, but they should be watered and sprayed when they are set out and shaded for a few days till they get established.

Plant small leaved varieties, such as chrysolord, Bounafore, Alice Day, etc., in rows ten inches apart, and eight inches apart in the row. If you make a cheesecloth house, six feet high, and as wide and long as you require, you can grow as good flowers as can be grown under glass, but my advice is to grow early blooming varieties. Those that flower in October. If you grow the large leaf kinds, such as Mendon, Earl Kitchner, Wm. Turner, etc., plant in rows twelve inches apart and twelve inches apart in the rows. If you do not want to grow single-stem plants, you can pinch them out when they are six inches high and they will throw up from three to six shoots, which you can let flower, in sprays, or you can disbud each shoot and get a good flower. These should be planted farther apart.

"That sermon you preached the other Sunday on Thrift had a great effect on me," said Griggs to his minister. "I went out before the collection."

To a Child Who Inquires

Composed by Olga Petrova.

HOW did you come to me, my Sweet,
From the land of no man knows?
Did Mr. Stork bring you here on his wings?
Were you born in the heart of a rose?

Did an angel fly with you down from the sky?
Were you found in the gooseberry patch?
Did a fairy bring you from fairyland
To my door that was left on a latch?

No! My Darling was born of a wonderful love,
A love that was Daddy's and mine,
A love that was human, but deep and profound,
A love that was almost divine.

Do you remember, Sweetheart, when we went to the Zoo
And we saw that big bear with a grouch
And the tigers and lions and that tall kangaroo
Who carried her babes in a pouch?

Do you remember, I told you she kept them there safe
From the cold and the wind, till they grew
Big enough to take care of themselves, and Dear Heart,
That's just how I first cared for you.

I carried you under my heart, my Sweet,
And I sheltered you safe from alarms,
Till one wonderful day the dear Christ looked down,
And, my darling, you lay in my arms.

The Lost Pan of Candy.

Charlie Gray and his sister Florence stood by the back kitchen window. This window looked out at Bennie Ware's back door, only one could not see the door now because there was a big snowdrift in front of it.

"Where did that pan of candy go, if Bennie Ware didn't take it?" cried Florence.

A few minutes before, she had set out a pan of hot molasses candy to cool on top of that big snowdrift, and now when they looked it was gone.

"I shouldn't wonder a bit if he took it," muttered Charlie. "A fellow that's too lazy to shovel snow away from his back door would be glad to get candy made by other folks, I guess."

"Sh!" whispered Florence, suddenly remembering that Bennie could hear them if he happened to be listening hard, for the two houses were very near together. "I guess he took it in fun and meant to bring it back. Let's wait awhile and see."

They waited and watched the top of the big snowdrift as if they expected to see the lost pan of candy come back to the place where they had left it.

"I know what I'm going to do," said Charlie at last. "I'm going over and tell his mother."

"Oh, Charlie!" Florence opened her eyes wide. "You wouldn't dare, would you? Just suppose he didn't take it!"

"Of course he took it." Charlie was quite sure about it by this time. "He could reach it by just opening the back door, and nobody else has been around."

Charlie looked very fierce as he jammed his cap on his head, but Florence stood looking at him doubtfully.

"The snow is so deep," she said, "you'll get in up to your chin."

"I'll take a shovel with me. I guess I'm not afraid of a little snow."

He got his snow-shovel from behind the door and began digging a trench through the big drift, so as to get to the back door of the Ware house. It was slow work, and after awhile Florence came to help with an old broom. The snow was light and dry, and it would have been no fun if they had not felt so vexed and worried about that lost pan of candy.

"It was going to be the best I'd ever made," said Florence. "And mother told us we could pop corn and roast apples after supper. It would have been as good as a party."

"Somebody's digging to meet us from the other side," whispered Charlie, stopping to listen.

They were half-way through the drift now, but it was still so high that they could not see over the top. They could hear the scraping of a snow-shovel on the other side.

"S'pose it's Ben?" asked Charlie in a whisper. "Maybe he's heard us shoveling and is ashamed of being so lazy, so he's trying to show off what he can do. I'm going to ask him what he's done with that pan of candy."

He had opened his mouth to call out, but Florence put her mitten

over it, and pointed with the other hand to something in the snowdrift right in front of them.

It was the lost pan of candy, all safe and ready to eat. The heat of it had melted the snow away under the pan, and it had kept sinking till it was quite out of sight from the window.

"I'm pretty glad we didn't say anything to Bennie about it," muttered Charlie, "or to his mother, either. Come on, Floss, let's hurry up and meet him before he gets through his side of the drift."

They set the pan of candy in a safe place, and dug away so fast that in a few minutes they could see who was working at the other side of the drift. And it was not Ben, but his mother, looking very hot and tired.

"Thank you ever so much for helping me," she said. "Bennie twisted his ankle this morning and can't stand on it, so I had no one to make a path for me, and Bennie couldn't see over that drift to your window. It's company for him to be able to look over your way."

"Oh, we would have helped before if we had known," cried Florence.

"Say, it's too bad about Ben's ankle," added Charlie, getting very

red in the face. "If I get my ailed, Mrs. Ware, couldn't we just haul him over to our house? We're going to have the kitchen all to ourselves this evening, and here's a pan of candy Floss has put in the snow-bank."

"Ask him," laughed Ben's mother. "I don't believe you'll have to ask twice. My, but it's nice to have such good neighbors."—Mabel S. Merrill in Zion's Herald.

The Only Way to Keep Up.

Philadelphia is to teach geography by moving pictures. That, says the Indianapolis News, is about the only way to keep up with European geography.

Fair List Prices



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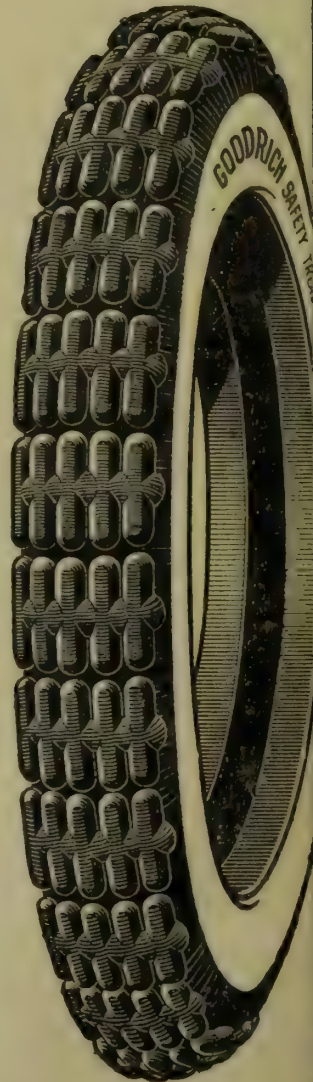
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"Best in the Long Run"

Good Health.

[By H. E. Pastor, M. D.]

Care of Young Children.

The Children's Bureau of the U. S. Department of Labor is issuing a series of weekly articles on the care of young children. This is a subject of important and widespread interest. Much of the illness and suffering among babies commonly attributed to the "second summer," or to teething, is really due to errors in feeding.

The following list shows the day's meals for a baby in his second year:

7 a. m.—Milk, zwieback, toast, or dried bread. 9 a. m.—Orange juice. 10 a. m.—Cereal, cup of milk. 2 p. m.—Broth, meat, vegetable, stale bread, baked apple. 6 p. m.—Cereal, milk, toast or bread. 10 p. m.—Milk (may be omitted).

Milk.—At this time the baby should be taking about one quart of milk in 24 hours; part of this may be poured over the cereal.

Cereals.—Oatmeal should be cooked three hours with a little salt in the water. It should be served without sugar, or with a very little only. The lighter cereals should be cooked at least an hour.

Breads.—Bread for young children must have been thoroughly baked and should be quite dry when used—that is, at least two days old. Tender toast is made by cutting thin slices from such a loaf and allowing them to dry still more, then toasting them to a delicate brown over a quick fire.

Fruit.—The child may have a small portion of baked apple or prunes once a day in addition to his morning feeding of orange juice. The apple should be baked very tender, and all the skin, seeds and hard parts should be removed. Prunes should be very carefully washed, soaked all night, then cooked until very tender with very little sugar.

Meat.—The child may have about a tablespoonful of scraped meat, or a soft-boiled or coddled egg once a day. Beef, boiled or roasted, the tender part of a lamb-chop, or the delicate meat of chicken or fish may be used.

Vegetables.—A small portion of some properly cooked green vegetable, like spinach or tender string beans, may be given. Such vegetables should be fresh. They should be cooked, then drained and mashed or strained through a colander.

Cancer in Drinking Water.

Some time ago we read a statement in the Engineering Record to the effect that cancer is water-borne and will some day be included along with cholera, typhoid and a number of other germ diseases in the list with which the water analyst has to deal, is suggested more strongly than ever before by the investigations on cancer in trout by the director of the State Institute for Malignant Diseases at Buffalo, and by the United States Bureau of Fisheries. Every one of the nineteen hatcheries examined from Maine to Sissons, Calif., had cancer incidence, and the same thing is said to be true of hatcheries in all parts of the world. Dogs drinking the water develop the growths, and so do rats fed on the scrapings from the hatchery troughs. Should filtering and chlorinating the water or

any other chemical water treatment prove beneficial, the fact would be of tremendous import to the water-works field.

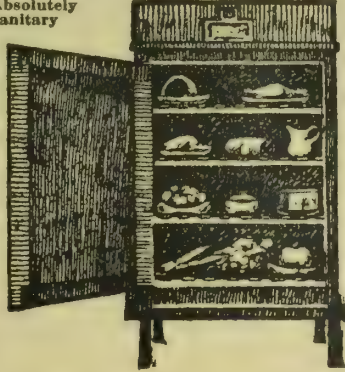
California's Mineral Springs.

Among the resources of California of both actual and potential value are the mineral springs which abound in all parts of the State, says a report of the United States Geological Survey. Streams of pure water issue in large volume from the northern lava fields, but some of the desert springs yield strong brines. Some mountain regions yield springs of ice-cold water in midsummer, and in the same vicinity are pools of vigorously boiling water. Water so corrosive that clothing soon falls to pieces under its action, is common in some localities; in others issue springs of hot, soft water, excellent for laundry use. Several of the more noted springs are mere trickles of pleasant-tasting carbonated water; other and larger springs of more delicious natural "soda water" are at present remote from roads and are known only to the hunter and prospector. Many springs form deposits of salt that are welcomed by cattle and wild animals as "deer licks"; others are a menace to small life because of the purgative salts they contain or of the great amount of carbonic acid gas they give off. The chemical constituents produce notable coloring in many waters, giving in some springs shades of yellow, green or blue, and even milky and inky-black streams.

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31x3 1/2	10.40	2.25	2.50
32x3 1/2	10.95	2.35	2.55
34x3 1/2	12.05	2.40	2.65
36x3 1/2	13.25	2.50	2.90
30x4	14.50	2.95	3.25
31x4	15.25	3.00	3.35
32x4	15.45	3.10	3.45
33x4	16.15	3.25	3.55
34x4	16.45	3.30	3.70
35x4	17.20	3.35	3.80
36x4	17.45	3.45	3.90
34x4 1/2	22.25	4.05	4.50
35x4 1/2	22.95	4.15	4.55
36x4 1/2	23.35	4.30	4.75
37x4 1/2	24.10	4.35	4.85
35x5	26.00	4.95	5.45
36x5	26.35	5.15	5.60
37x5	27.40	5.20	5.70

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SAN FRANCISCO.

San Francisco, April 11, 1917.

WHEAT.

Trading in wheat the past week has been of a very nominal order, due to the scarcity of stock for general offering. Some re-cleaned Sonora wheat went on sale at \$3.75@3.85 per cental, while both California Club and the Northern Red varieties were higher.

Sonora Wheat, re-cleaned.....\$3.75@3.85
Northern Club, none up and.....\$3.25@3.35
California Club, per ctn.....\$3.25@3.35
Northern Red, none offered
Northern Red.....\$3.50@3.55

BARLEY.

While country reports indicate a fair barley crop this year, the situation of the local market during the past week has been the steady and rapid rise of the December option. Spot barley held unchanged in the face of light offerings, but very active business in futures was reported. It is reported that some producers have already contracted their next year's crop at \$1.90@2.00. Many herd owners in the interior have been forced to continue their purchases of feed barley at the present high prices, owing to the slow development of green feed.

Shipping, ctn.....Nominal
Brewing, ctn.....Nominal
Choice feed, ctn.....\$2.50@2.60

OATS.

Buying for feed and shipping purposes put the quotations on oats up again this past week, and local reserves are of the opinion that the end is not yet reached.

Red feed.....\$2.25
White.....\$2.50@2.55

CORN.

The Eastern corn market is so unsettled that no reliable quotations on to arrive goods can be given in this market. Several lots were reported to have been bought at \$3.35@3.50 per cental, although this has not been verified. However, California sacked goods advanced sharply this last week, with Milo maize and Egyptian corn a close second and third.

(First-hand prices on strictly first-class grain, San Francisco.)
Eastern Yellow, ctn., bulk.....Unsettled
California, sacked.....\$3.00@3.10
Milo Maize.....\$2.75@3.00
Egyptian.....\$2.90@3.10

BEANS.

Red kidney beans failed to advance during the past week, this being the only variety to hold steady. There is an especially good call for large and small whites and the local trade looks for a still further advance on these varieties. The East is buying here in large quantities as can be had, there being no big lots left in this market. Several of the brokers here are very active in trying to line up future contracts, this business being said to come from the allied governments. It is known that Great Britain has contracted for a very large supply from this State next season, and there is every reason to believe that they are after more stock. Reports from producing sections indicate that very few of the producers are accepting the present bids, which would indicate that they are alive to the situation.

Bayos, per ctn.....\$ 8.50@ 9.00
Blackeyes.....7.50@ 8.00
Cranberry beans.....10.50@11.00
Horse beans.....8.00@ 8.25
Small Whites (south).....12.50@13.00
Large Whites.....12.50@13.00
Pinks.....10.40@10.60
Limas (south, re-cleaned).....13.25@13.50
Red Kidney.....11.75@12.00
Mexican Reds.....9.00@ 9.25
Tepary beans.....9.00@ 9.25
Garbanzos.....4.75@ 5.25

HAY.

Receipts of hay in this market fell off last week, mainly due to buyers from one section of the country shipping direct to another country section instead of here. Arrivals were 1,711 tons, as compared with 2,063 tons the week before that and 1,683 tons on the preceding week. All grades and varieties of hay have been advanced again and almost daily changes are reported in this market. The pasture situation is the worst seen in some years and even belated rains cannot help in the way that the farmers of this State need. With the cold weather holding back the new crop of hay, little relief from high prices can be expected for some time.

(Price per ton, car lots, San Francisco.)
Wheat, No. 1.....\$23.50@31.00
No. 2.....26.50@28.00
Tame oats.....26.00@29.50
Wild oats.....23.50@27.00
Barley.....25.50@28.00
Alfalfa.....23.00@26.00
Stock hay.....16.00@18.00
Straw, per bale.....1.00@ 1.25

FEEDSTUFFS.

Very sharp advances on feed stuffs have been the general rule this past week, with the exception of a few of the less called for lines. Even these are expected to advance this coming week, as their lower price makes them an attractive buy at present. The heaviest gain was made on cracked corn, which is now commanding the almost prohibitive price of \$65 per ton.

(Per ton, San Francisco.)

Beet Pulp, per ton.....\$33.00@34.00
Alfalfa meal, per ton.....26.50@27.50
Bran, per ton.....40.00@41.00
Oil Cake.....50.00@52.00
Coconut cake or meal.....35.00@36.00
Cracked corn.....64.00@65.00
Middlings.....50.00@52.50
Rolled Barley.....50.00@52.50
Tankage.....47.00@48.00
Rolled oats.....50.00@52.50
Rice middlings.....35.00@36.50

POTATOES, ONIONS, ETC.

New crop vegetables are becoming more and more of a market factor. New Summer squash from the Imperial Valley is now being offered here in a small way at \$3.25@4.00 per twenty-pound box. Green onions are selling at \$1.00@1.25 per lug box and small lot of crystal whites from the Imperial Valley brought 14 cents per pound. Australian stock is again furnishing the bulk of the trade at \$7.00@9.50 per cental. New potatoes command

THE MARKET REPORTS

Figures Given Are Independent and Reliable.
Prices Quoted as Paid to Producers.

as high as 8 cents per pound for very fancy, although the general top is 6 cents. Old potatoes are being shipped in good-sized lots and the quotation on this offering has advanced. Delta celery is bringing up to \$2 per crate on salable stock, with considerable off-grade stock put on sale. Peas have gained a cent under short receipts, with most offering of only fair quality. Asparagus is commanding 4@6 cents per pound, with receipts averaging 5,200 boxes per day.

Asparagus, per lb.....4@6c
Peas, per lb.....2 1/2@3 1/2c
Hubbard squash, per crate.....\$3.25@4.00
Summer squash, per crate.....\$1.00@1.50
Lettuce, crate.....1.25@2.00
Celery, Delta, crate.....None offered
do, Southern, crate.....None offered
Tomatoes, crate.....Not enough to quote
Rhubarb, box.....75c@81.25
Potatoes, ctn, Delta.....\$7.75@9.00
Salinas.....Cleaned up
Oregon.....\$4.00@4.25
New, per lb.....6@8c
Sweets, per lb.....5c
Onions.....\$8.00@15.00
Garlic, lb.....10c

POULTRY.

The past week in the poultry market has been marked by quiet trading, the natural thing to expect following Easter. So far no Eastern stock has been offered, but current receipts have generally cared for the trade here.

Turkeys, live, lb.....22@24c
do, dressed, large, lb.....Nominal
Broilers, 1 1/2 to 1 3/4 lbs.....38@40c
do, under 1 lb.....30@31c
Fryers.....28@30c
Hens, extra, per lb, colored.....22@23c
Small leghorn.....22@23c
Smooth Young Roosters, per lb.....30@32c
lbs. and over.....15@16c
Old Roosters, per lb.....15@16c
do, per lb.....20@22c
Squabs, per lb.....50@60c

Ducks.....24c
Old.....21@22c
Belgian Hares (live).....14@15c

BUTTER.

While quotations on butter closed a cent off from the opening prices, this is only to be expected when the increase of 200,000 pounds in receipts over the preceding week is considered. Present prices are too high to warrant storing and it was necessary that prices should drop to such a level that shipping could be attracted. The only butter in local ice houses at this time is some "short-held" goods intended for government contracts. The East has again been a customer in San Francisco and Northwestern points are also buying fairly freely.

Thurs. Fri. Sat. Mon. Tu. Wed.
Extras.....40 40 40 38 39 39
Prime firsts.....39 39 39 37 38 38 1/2

EGGS.

Last week's receipts of eggs were about the same as for the week before, but a better shipping call was ruling, and prices have been steadily advancing. Storage holdings at present run, in the neighborhood of 38,000 cases, or about the same as for the corresponding date last year. Seattle has again been buying eggs in this market and Los Angeles interests have taken several carloads of storage packed eggs from Petaluma. With quotations on eggs holding steady throughout the entire country, there is every reason to believe that poultrymen of California are to enjoy a prosperous year.

Thurs. Fri. Sat. Mon. Tu. Wed.
Extras.....28 28 28 28 28 29
Extra 1sts.....28 28 28 28 28 29
Extra pullets.....27 27 27 27 27 27 1/2
Ex. 1st pul.....26 1/2 27 27 27 27 1/2 27 1/2

CHEESE.

Slightly lighter receipts, said to be the result of the shipment of four cars direct from the factories to Eastern points, con-

tributed to a firmer cheese market last week. Old style Fancy Flats closed the week a cent higher at 21 1/2 cents and Young Americas fancy added a half cent. Y. A's.....24 1/2c
Fancy Calif. Flats, per lb.....21 1/2c
Monterey Cheese.....17@21c

DECIDUOUS FRUITS.

Deciduous fruit offerings are practically confined to Newtown Pippins, with this variety getting well cleaned out. Present holdings are so light that prices have been advancing, fancy bringing \$1.60@1.75 per box and ordinary grades \$1.00@1.15.

Apples:
Bellflower, box.....Not enough to quote
Newtown, fancy.....\$1.60@1.75
do, ordinary.....\$1.00@1.15

CITRUS FRUITS.

Changes in the citrus fruit list this past week have largely been confined to steady price ranges, with fancy navel oranges, tangerines, lemons and grapefruit the offerings affected.

Oranges:
Navels, fancy, per box.....\$2.65@2.90
do, Choice.....1.80@2.25
Tangerines.....1.75@2.00
Lemons:
Fancy, per box.....\$2.50@3.50
Choice.....2.00@2.75
Lemonettes.....1.75@2.25
Grapefruit, fancy.....2.50@3.00

DRIED FRUITS.

An advance of 1/4@1/2 cents per pound on futures peaches was the principal development of the week in the dried fruit market. There is still a tendency on the part of both buyer and seller to hold back, both anticipating a better market from their viewpoint. Some apricots were contracted for at 15 cents in Orange county.

(Net to growers, bulk basis, f. o. b. shipping point.)

Apples, new crop.....5 1/2@ 6c
Apricots, per lb.....15 @16 1/2c
Figs, black, 1916.....Not enough to quote
do, 1917.....5 1/2@ 6 1/2c
do, white, 1917.....6 @ 6 1/2c
California, 1917.....9 @10 c
Prunes, 1 size basis, 1917.....5 @ 6 c
Prunes, 1916.....5 1/2@ 6 1/2c
Pears.....6 @ 7 1/2c
Peaches, 1917.....6 1/2@ 6 3/4c

BERRIES.

Heavier receipts and a lack of interest on the part of buyers have combined to produce easier prices on strawberries during the past week. The latter condition was mainly the result of the poor quality offerings received here.

Strawberries per crate:
Choice.....\$1.50@1.75
Off-grades.....1.00@1.25
do, per drawer.....75c@1.00

HOPS.

Sacramento.....\$ 6 @9c
Suisun.....7 1/2@9c
Mendocino.....8 @9c

OILS.

Pearl Oil, per gal.....9c
do, cases two 5s.....17c
Headlight, bulk.....10c
do, cases two 5s.....18c
Eocene, bulk.....19c
do, cases two 5s.....19c
Gasoline, bulk.....20c
do, cases two 5s.....25c

LOS ANGELES.

Los Angeles, April 10, 1917.

Receipts of week ending April 10.....301,190
Receipts of past week.....505,500

While the general tone of the market here the past week was firm and last Friday extra on call was bid up to 40c, and this advance maintained on Saturday, this strength was due to a temporary scarcity caused by an accident on the Southern Pacific Valley line. Chicago advanced 1c up to Monday and New York 1c. With the opening of the current week Monday, a number of delayed shipments made the receipts heavy and on call extra sold off 3c and the market closed the same as a week ago. As San Francisco went off 2c and altogether the tone of the market was easier and buyers less anxious for supplies, now that receipts have become normal again. Tuesday brought no change. San Francisco was up 1c, but as the receipts were liberal and the eastern markets unchanged, this had no influence upon the market here.

We quote California extra creamery.....37c
Prime first.....36c
First.....35c

DAILY QUOTATIONS:

1917— Wed. Th. Fri. Sat. Mon. Tu.
Extra.....37 37 40 40 37 27
1916— 29 29 29 29 29 29
Extra.....27 29 29 29 29 29

EGGS.

Receipts (railroads) for week ending April 10, 1917, 3,231 cases.
Receipts (railroads) for week ending April 10, 1916, 4,469 cases.

Not so many coming in the past week and San Francisco was higher. This with a good consumptive demand and lighter production of local eggs than a year ago caused a higher market throughout the week. Extras were bid up 2 1/2c up to Monday, case count 1c and pullets 2c. Case count are now 9c higher than this time last year. Chicago declined 1c during the week and New York 1 1/2@2c. But this had no influence upon the market here. The face of light arrivals. While the local trade took eggs fairly well at the prices, there was but little doing by the cold storage people at the advance.

DAILY QUOTATIONS:

1917— Wed. Th. Fri. Sat. Mon. Tu.
Extra.....29 30 30 30 30 31
Case count.....29 30 30 30 30 31
Pullets.....27 29 29 29 29 29
1916— 27 29 29 29 29 29
Case count.....21 21 21 21 21 21

POULTRY.

This market resembles much the same as a week ago. Light broilers were in better supply, weak and slow sale. Fryers, steady and in good demand. Heavy hens in good demand and firm, not so many coming in. Light hens also steady and moving a little

Special Livestock Market Report.

San Francisco, April 11, 1917.

CATTLE are held high and are hard to get, but grassers will be coming freely within thirty days and the markets may falter, though prices are marked up today. Grass cattle have been coming in from San Luis Obispo county, the best stock, light carloads at least of fed cattle will have come from Tulare county, and four times as many more are expected.

Steers, No. 1.....9 1/2@10c
No. 2.....9 1/4@9 1/2c
Cows and Heifers.....8 3/4@9c
No. 2.....7 1/2@7 3/4c
Bulls and Stags.....6 @ 7c
Calves, light.....9 @9 1/2c
Medium.....8 1/2@9c
Heavy.....7 @8c

HOGS also are marked up, each week seeing a rise above the record prices of the past week. Receipts are about the same, too many light weights, which are not so much desired by the packers. Average condemnations for tuberculosis first three months of 1917 was 4 per cent.

(Prices f. o. b. South San Francisco and shipper stands.) Half the condemnations for tuberculosis. Rough docked 20 pounds, piggy sows 40 pounds, stags 80 pounds.)
100 to 150 lbs.....12 @c
150 to 300 lbs.....14 1/4@14 1/2c
300 to 375 lbs.....13 3/4@14c

SHEEP.—Nothing moving in sheep line. Local prices same as last week. Government reports show that 11,941,366 sheep were slaughtered under Federal inspection in 1916 as compared with 12,211,765 in 1915 and 14,400,000 average of four years preceding. This is partly to save the stock for wool, whose price has gone way up during the past year.

Prime Wethers.....11 1/2@12c
Ewes.....10 @10 1/2c
Lams.....13 @13 1/2c

WOOL.—Market is at a standstill since the Boston operation agreed to do nothing in that line until the Government should signify what is wanted for the armies. They have offered the Government whatever it wants on the basis of prices of April 2. Practically no fleeces are changing hands in California. While our entry into the war might loosen Britain's embargo on Australian wool, this is not counted a very important probability.

Sacramento Valley, spring clip.....40@45c
Mendocino.....Nominal
Cloverdale.....40@42c
San Joaquin, 7 mos.....26c
San Joaquin, year's.....35@40c
Southern, spring clip.....28@30c
Southern, 7 mos.....22@23c
Imperial Valley, 7 mos.....30@35c
Newlands, year's.....35@40c

HIDES.—Tanneries are showing more anxiety to get hides, but are not yet coming up to packers' prices and there is practically no movement.

Los Angeles, April 10, 1917.

CATTLE.—A firm and steady market was had the past week for all good killing steers. A more quiet beef market and the Eastern markets unchanged caused a weaker feeling among buyers, though for what steers and cows that suited they paid steady prices, as the offerings were not heavy. California and Arizona furnished most of the supply and the quality was about as usual for this time of year.

Per cwt. f. o. b. Los Angeles:
Beef steers, 1000 to 1100 lbs.....\$9.50@10.00
Prime cows and heifers.....7.50@8.00
Good cows and heifers.....7.00@7.50

HOGS.—A firm market and fair demand was had the past week. California fur-

nished most of the hogs coming in, and as last week a big part out of the receipts were light weights. Hogs that were being forced to market by the high price of feed and before they were matured. Not many good packing hogs in and the few brought a premium over quotations in sympathy with the high markets East.

Per cwt. f. o. b. Los Angeles:
Heavy, averaging 300-350 lbs., \$11.50@12.00
Mixed, 200@250 lbs.....12.00@13.00
Light, 150-200 lbs.....12.00@13.00
Rough docked 20 pounds, piggy sows 40 pounds and stags 40 per cent.

SHEEP.—While this market the past week showed no change, the demand was hardly so urgent, the high prices inducing lighter killing; the market having quieted down. Lambs are coming in more freely and the high prices caused killers to hold back and do more or less picking around. Heavy sheep continue rather scarce and the market for them fully steady under light offerings.

Per cwt. f. o. b. Los Angeles:
Prime wethers.....\$ 9.00@10.00
Prime ewes.....9.50@10.00
Yearlings.....10.50@11.00
Lambs.....13.00@14.00

CALVES.—Market dull and weak;

a good many being driven to market by the high price of feed. Selling slowly at \$8.50 @ \$9.25 per cwt.

No. Portland, Ore., April 9, 1917.

CATTLE.—Today's receipts of cattle were about 700 head, which included only three loads of good topy beef. The balance of the run was of light medium and ordinary beef and a good supply of stocker and feeder cattle. The market opened briskly, there being a large list of buyers here.

BEEF STEERS.—Prime beef steers are getting to be a scarce article around the yards, only two loads of real fat beef steers being on the market today. There was an excellent demand for all grades and an active and higher market ruled. One load of heavy grain-fed steers brought \$9.75, which was about 20c higher than last week, while a load of good light Idaho steers sold for \$9.75. The top on the day's trade was \$10.00, one bunch from Bend. The big end of the medium to good beef steers brought \$9.00 to \$9.50, while ordinary grades brought from \$8.50 to \$8.75. Several loads of feeding steers brought \$8.40, with stockers from \$7.00 to \$8.00. Prices on all beef steers were mostly 25c higher, with feeding steers selling from 10c to 15c higher.

COWS AND HEIFERS.—There was an excellent demand for the light supply of cows here; the prices were all 15c to 25c higher than last week. Prime cows, which were here only in small bunches, sold at \$8.50, while several loads of good beef cows brought \$8.25; medium grades from \$7.50 to \$8.00.

BULLS.—Bulls were in good supply, with a fairly good demand at steady to higher prices. A number of good heavy bulls brought from \$7.00 to \$7.50; medium heavy ones sold from \$6.50 to \$7.00.

HOGS.—There was a good supply of porkers over 1500 head. Demand was good, and prices, after being at a standstill for over a week, took another spurt to a new record level. The quality of the run was fairly good, although no real topy hogs were included. The best load in the trade brought \$14.65, while the bulk sold from \$14.50 to \$14.60. Trading was quite active.

SHEEP.—There were no sheep received today. Prices remain steady.

better. Turkeys, ducks and roasters continue steady and in fair demand. The high prices in the Central West shutting out shipments from there.

We quote from growers:

Broilers, 1 1/4 to 2 lbs.	30@31c
Fryers, 2 1/2 to 3 lbs.	28c
Hens over 4 lbs.	23@24c
Hens, under 4 lbs.	20@21c
Ducks	22@23c
Geese	18@19c
Roosters, 3 lbs. up (soft bones)	26c
Turkeys, heavy, 12 lbs. and up	29@30c
Turkeys, light	24@25c
Squabs, live, per doz.	\$1.50@3.00
Dressed	3.75@4.85

BEANS.

There is no change to note in this market since our last report. With light stocks and planting yet to be done, holders are firm in their views. Buyers, however, took hold sparingly, as might have been expected at the high prices.

We quote from growers:

Limas	\$13.00@13.50
Large white	12.00@12.50
Small white	12.00@12.50
Pinks	9.50@10.00
Blackeyes	7.50@ 8.00
Tepary	9.00@10.00

HAY.

A very firm market and fair demand was had the past week for most offerings, as the week before the enquiry was mostly from the country and for horse hay, which found ready sale at full quotations. The dairy people continue to use mostly green alfalfa or prices would have been higher. Receipts light; only 16 cars.

We quote f. o. b. Los Angeles:

Barley hay, ton	\$21.00@23.00
Oat hay, ton	22.00@24.00
Alfalfa, northern, ton	20.00@22.00
Alfalfa, local, ton	22.00@23.00
Straw, ton	11.00@12.00

CABBAGE.

The scarcity of good cabbage noted a week ago continues. The season is very backward for new cabbage and all winter cabbage is gone. Shippers are in the market for all good firm heads and are paying as high as \$4.25@4.50 per cwt. to growers. Poorer and less firm heads that depend upon a home market, \$3.50@3.75 per cwt.

BERRIES.

More strawberries in the past week and the quality was very good of most offerings. Imperial Valley and local both on the market. With freer offerings lower prices prevailed, putting them in the reach of a greater number of consumers, hence a more active movement.

We quote from growers:

Poor to choice, per crate of 30 baskets	\$2.50@2.75
Fancy, per case of 30 baskets, case	3.00@3.25

ASPARAGUS.

The market was well supplied the past week and with increased offerings prices ruled lower. Demand fair, however, for all good "grass," Imperial Valley bringing 9@10c per pound; Grand Island 10@12c per pound, and local 8@11c per pound.

Special Citrus Market Report

Los Angeles, April 10, 1917.

Shipments of citrus fruit from Southern California from November 1 to April 8: Oranges 17,324 cars and lemons 2,960 cars. Same time last year: Oranges 14,324 cars and lemons 2,435 cars.

Shipments from Central California from November 1 to April 6: Oranges 4,055 cars and lemons 164 cars. Same time last year: Oranges 4,243 cars and lemons 146 cars.

Shipments from Northern California from November 1 to April 5: Oranges 844 cars and no lemons. Same time last year: Oranges 610 cars and lemons 1 car.

More active shipments and heavier offerings on the eastern markets the past week caused a break in prices of both oranges and lemons. Still prices of all good fruit and the best known brands were fairly good. While the shipments were the heaviest for a long time the trade absorbed them without any serious loss and prices have been averaging higher than a year ago. Locally the situation is much the same as a week ago. All highly colored large oranges were in good demand and brought a little more money. Small sizes, however, were dull and weak. The demand seemed to be mostly for the larger oranges. Local packers were paying 1 1/2@2c per pound in the grove picked for oranges, the latter price for nice big oranges. Grapefruit was quiet, though what selling brought last week's prices 2@2 1/2c per pound in the grove picked. But few tangerines in and they were dull at 1@1 1/2c per pound in the grove picked. Lemons continue to drag. Offerings good and only the best bring 1@1 1/2c per pound in the grove picked. All else have had to be sold for what they would bring.

AUCTION SALES.

New York, April 9.—Forty-nine cars of navel, one car of bloods, six cars mixed navel, bloods, tangerines, St. Michaels and Valencia and four cars lemons sold. Market lower on both oranges and lemons; weather fair, preceded by heavy snowfall. California navel averaged \$1.80 @ \$3.35. Lemons averaged \$2.00@ \$3.35.

RAISIN PRICES NAMED.

Raisin shipments first three months of 1917 were three times as great as same period of 1916. James Madison was not re-elected manager. Opening prices for 1917 layers and clusters same as named after last fall rains. Sunmaid layers, 20-pound box, \$1.50; 6-crown Imperial clusters, 20-pound box, \$2.60; fancy Sunmaid clusters, four 5-pound cartons, per case, \$2.60. Prices f. o. b. California. Biggest advertising campaign planned for raisins. United States exports, seven months ending January, 1915, 18,567,342 pounds; same period, 1916, 58,615,974 pounds; same period, 1917, 38,523,386.

Bloods, halves, averaged \$1.15@ \$1.70 and tangerines averaged, halves, \$1.15@ \$1.70. Boston, April 9.—Thirty-two cars sold. Market slightly lower on both oranges and lemons. California navel averaged \$2.20@ \$3.75. Lemons averaged \$2.85@ \$3.35. Philadelphia, April 9.—Twenty cars sold. Market 10 @ 20c lower on oranges; unchanged on lemons. Snowing. California navel averaged \$1.50@ \$2.90. Lemons averaged \$2.35@ \$3.25.

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WANTED—Capable, energetic man to take charge of our business in California. Must have Ford automobile and \$300 in cash. National Development Company, Bedford, Virginia.

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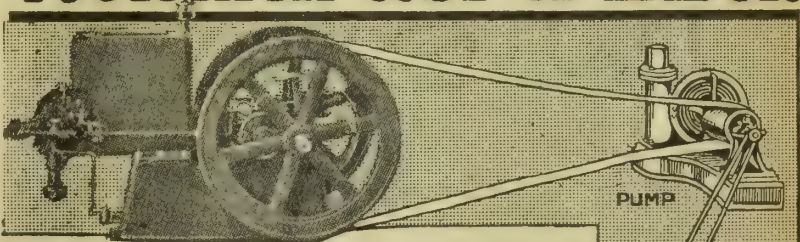
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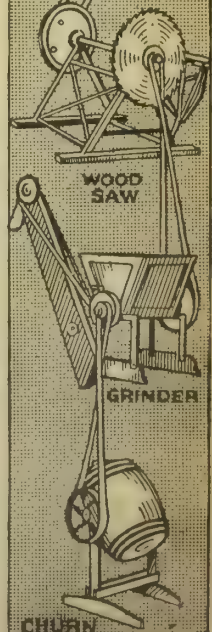
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THE PACIFIC RURAL PRESS

SAN FRANCISCO

APRIL 21, 1917.

LOS ANGELES

Apricot Blossom and Twig Blight and Sour Sap.

[Written for Pacific Rural Press by Prof. R. E. Smith, University of California.]

MANY inquiries are being received regarding the sudden blighting of the blossoms and twigs of apricot trees in the San Francisco Bay region. The trouble is caused by a familiar fungus, the *Monilia*, which is best known as the cause of the so-called Brown Rot of the fruit of apricots, plums, cherries, peaches, and other stone fruits. This rot of the nearly ripe fruit occurs more or less every year throughout the region where the twig blight is now so abundant. One of the commonest effects of brown rot is the production of "mummies": dry, dead fruit which hangs on the tree all winter. In the early spring gray, mold-like spore masses of *Monilia* appear upon the surface of these mummies and cause more or less infection and blighting of the new blossoms. Usually this form of the disease is not abundant, but in certain seasons or certain orchards it develops to an unusual extent, reaching a maximum at times like the present when the fungus grows from the blossoms down into the twigs or even into large limbs, causing a blighting of the fruiting wood and considerable gumming on the twigs and affected branches. *Monilia* is not usually a very active parasite, confining its attacks to the ripe or nearly ripe fruit. The twig blight effect is usually the indirect result of cold weather and frosty nights during the blooming and fruit-setting period. When such weather occurs the blossoms and twigs are either slightly frozen or their resistance is lowered and the fungus is then able to attack the weakened tissue. This year we have had just the right combination to produce this effect, namely, plenty of *Monilia* spores on mummies and blighted twigs of last year, continued cold weather, and enough rain during the blooming period to give the fungus a good chance to develop. The fungous effect has also been complicated with straight frost injury, many orchards having been frozen to a greater or less extent. The amount of *Monilia* twig blight is everywhere directly proportionate to the amount of frost which has occurred in the orchard.

Spray and Remove Mummies.

Knowing the cause of the trouble, the orchardist is next most interested in the question of what to do about it. In such seasons as the present one, it is doubtful if any treatment would be practical in the worst affected orchards, since the fundamental trouble is climatic rather than fungous. It should be understood, however, that the injury is now about at an end, the affected twigs are sending out new growth below the dead portion and from now on the trees will rapidly improve in appearance. Another year, with more normal weather conditions, the trouble probably will not occur at all in most orchards. The experience of various growers has shown the following: No good is accomplished by spraying before the blossoming period. It is too late to spray for this blossom and twig blight after the trees are in full bloom. Apricots may be sprayed without injury at any time while in bloom with lime sulphur of a strength of 1-25 or even stronger. To control the brown rot of the fruit, spraying after the fruit is

half grown must be approached with great caution, as any spray is likely to show on the ripe fruit and injure its sale. The so-called self-boiled lime sulphur is commonly recommended for this purpose, but its use has been attended with more or less injury in this section. The same is true of the various sulphur paste preparations. Apricots may safely be sprayed at the present time with lime sulphur, 1-30. It is still an open question what spray can be safely used later in the season. All mummies should be removed from the orchard and destroyed in the fall and the blighted twigs should be cut out as thoroughly as seems practical. It would also be advisable to spray the trees next spring, just as the first blossoms are opening, with lime sulphur, one gallon to twenty-five of water. These efforts may be expected to give good results in a normal season, although with any such amount of cold weather as has occurred this spring no treatment would do much good.

Whitewash in Fall.

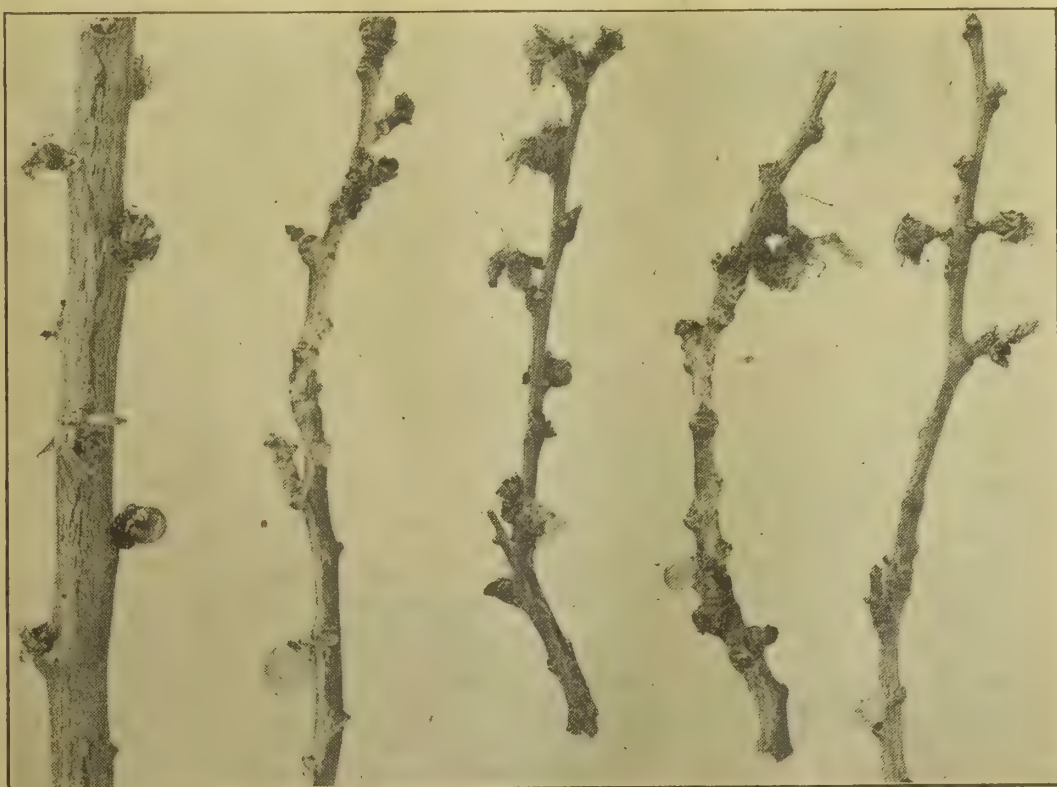
Another effect of cold weather this year is seen in the large amount of so-called "sour sap" and similar troubles in young apricots, peaches, cherries and other kinds of trees. This shows in a failure of the trees to start into growth, more or less gumming in spots or pockets on the trunk with a darkening or dying of the inner bark, especially on the sunny side of the stem, and fermentation of the sap. "Sour sap" takes many peculiar forms and the term includes a variety of troubles, but the prevailing disease in young trees, as just described, is undoubtedly a form of winter injury and a climatic effect. Young walnut trees are also very commonly affected this year, but without gumming or souring as in the stone fruits. It is extremely advisable that the trunks and first branches of all young trees be coated with a thick whitewash about November first, in order to prevent this sort of trouble as much as possible.

The dying and dropping of apricot buds is also prevalent this spring. This is another combined climatic and fungous effect, being usually due to cold weather and an attack of the peach blight fungus, *Coryneum*. Spraying with thick Bordeaux mixture or lime sulphur about November 15 will help to minimize this injury.

Spray Schedule.

The best known treatment for apricots in the San Francisco Bay region or other localities near the coast is as follows: For bearing trees spray with heavy Bordeaux mixture (6-8-50) or lime sulphur (1-12) between November 15 and December 15. The object of this is to prevent infection of the buds with the *Coryneum* (peach blight) fungus and also to clean up, as far as possible, the spores of this fungus and those of the brown rot (*Monilia*). Just before the buds open in the spring a spraying with 1-8 lime sulphur may be advisable, particularly if there is any trouble with scale insects, peach worm, or any of the various forms of shot-hole fungus. Then, just as the first blossoms are open-

(Continued on page 500)



Blossom and twig blight of apricots, which is so prevalent this year in the counties about San Francisco Bay. This is caused by the *Monilia* (brown rot) fungus infecting the blossoms and running down into the twigs. The extensive infection this year is due to the fact that the trees have been much weakened by continued frost; such trees may be expected to recover from now on without recurrence of the trouble another year unless similar frost conditions prevail.

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EDITORIALS

PATRIOTISM.

OUR national share in the great war has given world-wide satisfaction. Rudyard Kipling has written a poem to us. Lloyd George says we have struck a greater line of throne-busting than we did in 1776. The Kaiser says: "Go to it, Sam: nothing you do will interfere with my plans." And so our part in the war seems to please everybody and incommode nobody. It reminds us of another sad event which was just as jolly. A tourist, with a taste for fatal-disease figures, stepped into a funeral which was being held near the highway, nudged one of the weepers, and, pointing to the casket, significantly whispered: "What complaint?" "No complaint at all," the sobbing friend replied: "Everybody perfectly satisfied." And this is surely our national attitude toward this new struggle for the supremacy of democratic principles. Everybody is patriotically behind President Wilson and loyal to his leadership. Even the foremost pacifists have heard a higher cry than peace, when there is no peace. Our Dr. Jordan has hurried home from Eastern peace platforms to get his gun and William Jennings Bryan has gone out on a hot trail after war-like conservation. And the two-fold reason for this universal satisfaction over our entrance upon this dreadful blunder of war is patriotism coupled with the conviction that the way to bring the world out of this gulf of inhumanity, perhaps forever, is to go through and not around it. The stronger the plunge the sooner the crossing: that is the way the American people are going in!

PATERNALISM.

BUT we are not so sure that we ought to be so complaisant over the way agricultural warthings are going. This is our part in the great tumult and we have a right to speak. All we have to look out for is not to get ourselves interned, with no paste-pot and scissors within our reach. And all the complaint we now have to make is that things are going our way so fast by aeroplane that our one-cylinder tin box can hardly keep us in sight of their great wings. Some of our readers have blamed us for doing too much paternalism. They have tried to show us that overhead influence for fair money, fair labor and fair trade for farmers would invertebrate the most independent and individualistic class of our American citizenship and that if we did not stop urging such things we would enserf the very people who have made our country great. This claim did not impress us much at the time and so we kept on, with others, doing our best to secure from financial and political higher-ups recognition of the farmer's right to have government influence and aid toward cheaper money, wider practical education, promotion, protection, and the right to organize to secure a selling-price above the cost of production. In all these things, and others like them, we insisted that Uncle Sam should see to it that his six million farmsteads should

have equal chance with his other nephews, and that farmers should be urged and inspired to organize to secure these things for themselves and make them work out safely and successfully. And we have resolutely claimed and demonstrated that such things would increase initiative and confidence among American farmers and could in no way transform them into a class of jelly-backed peasants. And we have recklessly declared that if such things constituted paternalism, we were for paternalism!

GRANDPATERNALISM.

BUT now we are a little scared lest, by the operation of the agricultural aeroplanes which the preparedness movements have set free, critics who were shocked by our simple and elementary paternalism, as above outlined, may be thrown into fits. For the powers that be of preparedness seem to be disposed to assume positions toward the upstanding independent American farmer which are not the discriminating and inspiring domination of a benevolent and quick-witted national uncle, but the overlordship of a doddering, but foxy, national grandfather—in short, there seems to be some danger that Uncle Sam may become Grandpa Sam!

Never has there been in this country such a talk-fest by near-farmers as during the last fortnight. If a man from Mars should drop on this continent, he would be forced to conclude that this nation stands on the verge of starvation because it has strangely omitted to develop a farming population and now, in a fancied extremity, it must mobilize from all kinds of ignorance and inexperience a multitude to do a farmer's duty to his country! Where is history, which has recorded the full competence in patriotic production of American farmers for a century and a half? Where is oratory, which has exalted the American farmer as the bulwark of the nation in all times of stress? Where is poetry, which has pictured the loyal hearts and the strong arms of men and women on farms as underlying national convictions of right and justice, and independence in material support of national life? All these things seem to have been forgotten and there has arisen all over the country a hubbub of grandpaternalism, urging not that Uncle Sam in his proper capacity should go on with his beneficent work of commanding that his farming nephews have a fair chance against imposition by the financial, manufacturing and commercial systems which have grown up during recent years, but imploring Grandpa Sam to look upon his farming offspring as feeble-minded and negligible and to create new methods and agencies of food production, which any person experienced in farming must consider as either impossible of immediate operation or permanently vain and unproductive.

MOBILIZATION.

WE are, of course, not trying to impeach the interest and spirit which prompt the current outcry for mobilization of fancied capabilities of food production, for this interest and spirit are genuinely patriotic and fundamental in our national strength. Our claim is that they are unconsciously unjust to the insight and capacity of the agricultural industry of the country and they worship notions and agencies which they mistakenly believe to be capable and practicable. They are half-truths and therefore most likely to deceive the unwise and unwary. The numbers of propositions which are burning wires and loading mail sacks are too great for even an attempt at a category. Their nature can, however, be indicated by a few references. The proposition to mobilize agricultural labor by accepting farm work as a patriotic service equal to military enlistment is sound and true, but it is linked with the mobilization of inexperienced people to be marched into the country and to be endowed by the government with materials and machinery to grow crops of which they know nothing—which is foolishness. To help wise and thrifty farmers to emerge from a burden of debt, at interest rates which are unwarranted and incapable of payment, is a long step toward national

competence, but to stake a throng of people who have only the physical semblance of farmers in the number of their arms and legs is silly grandpaternalism, and the more you mobilize of such the worse for the national strength. To help those who know land and the uses of it to bring larger areas under crop immediately, if the judgment of such men is that they can come through with it, will increase desirable production, but to exhort average persons to farm vacant lots in a town or to take up sections of desert land, is to invite either small or large catastrophes, as the cases may be. All these fallacies which are now being so widely exploited proceed upon the ancient error that the most important thing of the farm is the land. Adam thought so when he lived in the garden: he changed his mind when he homesteaded outside. The most important thing on the farm is the farmer.

AGITATION.

IN spite of the restrictions which we place upon the current agitation of the subject of food production, it will in the main accomplish its purpose, but not in the ways so glowingly anticipated. Though its exhortations are largely actuated by lack of confidence in the Lord God and in his chosen servant, for this line of activity, the American farmer, the harvest will come in largely increased volume. The data upon which shortage of food supplies for home use and export are predicated, are largely unwarranted. Departures from the steady increase of food production are but seasonal accidents, except in animal deficiencies which cannot be so soon recovered. The alarming condition of winter wheat reported last month has probably already been fully met by improved weather conditions and increased sowing of spring wheat. Prediction of shortage in summer crops, which will not be planted until next month or later, is gratuitous nonsense, if not actually impious, for the Lord's promise of seed time and harvest no crop statistician has a right to discount. Nor has any agitator, even through honest patriotic feeling, a right to take the ground that the American farmer is not sufficiently onto his job to get all the crops he can for the high prices which will prevail. It is perhaps the disrespect to the alert and capable farming industry of this country which nettles us most in the copious current discussion of food production. All concede that ample food supply is the principal thing in the present emergency and yet, so far as we have noticed, no notable assemblies of actual farmers have been called to resolve what can and should be done and how to do it. We have seen no note of action by national agricultural organizations, of which there are several very large and influential ones in this country, to set forth the patriotic and practicable effort which their constituencies should make. All we get by wire or mail are proclamations by near-farmers and non-farmers outlining public policies and duties which, if they could be achieved, would put the legitimate and immensely capacious farming industry out of business. But of course they cannot be carried out because they are largely visionary and fallacious. Two things which will work automatically, doing their own mobilization and agitation, are these: 1. Present prices are a spur to production to the limit of capacity. 2. Present prices are a check upon consumption to the limit of endurance. And there you have the right and left flanks of the food forces of the country!

THE PRESIDENT'S APPEAL.

AFTER being buffeted by the winds and waves of false farming doctrines, it is a great joy to hear the voice of the only one who is now in authority among us and whom all the world, except our mistaken enemies, now calls great and sincere and a friend of mankind. In his appeal to all classes to embrace patriotic duties, President Wilson thus presents a genuine agricultural exhortation:

I take the liberty of addressing this word to the farmers of the country, and to all who work on the farms: The supreme need of our own Nation and of the nations with which we are co-operating is an abundance of supplies, and especially of foodstuffs. The importance of an adequate food

supply, especially for the present year, is super-
relative. Without abundant food, alike for the
armies and the peoples now at war, the whole
great enterprise upon which we have embarked
will break down and fail. The world's food re-
serves are low. Not only during the present
emergency, but for some time after peace shall
have come, both our own people and a large pro-
portion of the people of Europe must rely upon
the harvests in America.

Upon the farmers of this country, therefore, in
large measure, rest the fate of the war and
the fate of the nations. May the nation not
count upon them to omit no step that will in-

crease the production of their land, that will
bring about the most effectual co-operation in the
sale and distribution of their food products?

The time is short. It is of the most impera-
tive importance that everything possible be done,
and done immediately, to make sure of large har-
vests. I call upon young men and old alike and
upon the able-bodied boys of the land to accept
and act upon this duty—to turn in hosts to
the farms and make certain that no pains and
no labor is lacking in this great matter.

Such an appeal needs no effort at enforce-
ment. It places the farm and the farmer in
proper relation to patriotic public service.

Winter-Growing Cover Crops.

To the Editor: My thought for this fall is to
either sow vetch or barley in my young orchard,
harrowing this in and letting it stand in the
spring just as long as possible before plowing
under. Or, possibly earlier in the season, plow
some ridges and then let the growth continue
until a proper height and irrigate and turn it
all under. I would like your opinion on this.—
J. C. A., Stockton.

Your plan for winter-growing cover crops is
one which we are almost continually urging in
these columns with much detail of successful
practice. Rye is, however, often better than
barley to grow with vetch because it is a surer
winter-grower and more likely to go straight
ahead even if the soil gets very cold and wet.
But do not let the crop grow too late in the
spring or you will lose too much moisture and
get the ground into bad shape, which will worry
you all summer.

By
the Editor

QUERIES AND REPLIES

Inquirer Must
Give Full Name
and Address

Cucurbits for Intercropping.

To the Editor: I have two small orchards; one
has trees planted in 1915, the other trees planted
this spring. The ground is in good condition,
level, and could be irrigated. I have been think-
ing of growing pumpkins in both pieces. Would
this take from the soil any vitality that other-
wise would go into the trees? I do not want to
in any way stunt the growth or development of
the trees.—Planter, Stockton.

The cucurbits as a class (pumpkins, squashes,
melons, etc.) are perhaps the most innocent of
injury to trees and soil of all the intercrops which
can be grown in young orchards. What they
take from the soil (except water) is practically
negligible and probably largely returned by their
own litter. Their use of water is very large, but
they partially atone for it by reducing loss by
evaporation through the sun-shade which they
spread over the surface. But the profit in growing
them is limited by their low selling value, which
also limits the distance they can be profitably
hailed. In a young orchard they are also ob-
jectionable because they make it almost impos-
sible to keep track of gophers, when these pests
are abundant, and some trees are almost sure to
be lost by them. Of course, if you have stock
to which the crop can be profitably fed, the in-
ducement to take chances with it is greatly in-
creased.

Feed from Rough Lowland.

To the Editor: I wish to grow cow or "hog-
off" feed of some kind on several acres of rich,
moist bottom land with considerable fallen tree
growth, with some open spaces for sunlight and
not much brush. I have no time to clear at pres-
ent. Would beets or pie-melons be likely to do
or what would you suggest for a try?—R. D. K.,
Tehama county.

If you cannot get in to cultivate, we doubt if
you could ever find your beets and pie-melons in
the mass of man-high weeds which such wild river
bottom is apt to send up. And if the land is
likely to do that, and there is not too much shade,
you have a gambling chance of smothering the
weeds by scratching in a broadcasting of "gyp"
corn or Sudan grass in the hope that it will
smother the weeds. In places where you can cul-
tivate the weeds out as they start and where
there is sunlight enough, you could get some tre-
mendous stock beets and pumpkins. But between
the shade and the weeds the situation does not
look very promising to us except as a park for
stock to lie in the shade and fight flies. If any
reader knows better let him go to it as part of
the preparedness program to which we invited
all to contribute last week.

Strawberry Aphis.

To the Editor: My strawberries, which are just
beginning to bloom freely, are covered with some
kind of aphis. Will they injure them? If so,
what can I do for them?—W. D. C., Stevinson.

Although the strawberry aphis cannot be
counted one of our great pests, it is capable of
distressing the plants considerably—especially
early in the season before its natural enemies,
lady birds, etc., get really busy. It should be
checked by spraying with kerosene emulsion or
tobacco extract, properly diluted, using a nozzle
which can be pushed under the foliage to shoot
a fine spray from below. If this is done early, as
soon as the pest appears, the chance of reducing
it is greatly increased. It will also be necessary,
probably, to repeat the treatment.

Poisoning Johnson Grass.

To the Editor: Noting mention, in your issue
of April 7, of the use of arsenite of soda for
Johnson grass, I wish to ask if this may be used in
a two-year-old orchard? I have perhaps an
acre of it in one place and a few scattered patches
in a 12-acre peach orchard. I have weed-cut
some years, but in rush of other work have not
succeeded in destroying the grass.—H. D., Marys-
ville.

We mentioned it in connection with an inquiry
for cleaning ditch banks, but we did not com-
mend it, because of the danger of killing other
plants to which it might be carried by water.
The same warning applies with greater force to
land set with fruit trees. There is no doubt of
its killing Johnson grass if enough is applied to
wet the ground deeply, but it will also kill all
other plants rooting in the same ground—trees
and all. Besides, arsenic compounds remain in
the soil for a long time and may kill the land
for years. It is a good weed-killer for walks
or roadways which are to remain clean, but not
for land which is expected to grow things.

Blister Mite of the Pear.

To the Editor: I am sending two diseased pear
shoots, from trees three years from bud. These
trees grew well the first year. Last year I no-
ticed the spots on the leaves, but most of the
trees made a good growth. This year they are
much worse and have swellings on top of shoots
as you can see by sample. What is the cause and
the cure?—S. L. P., Cordelia.

The raised patches or spots on the under sides
of your pear leaves are caused by the "blister
mite." The swellings of the twigs are not caused
by the insect. They seem natural to the pear;
at least, they have never been accounted for as
a diseased condition or the work of a pest. The
best treatment for the blister mite is spraying
with lime-sulphur when you see the buds swelling
and before green color appears. The female mites
hibernate under the bud scales and come out as
the swelling of the buds lifts them, and spraying
then cuts off their progeny. It is now too late
for such effective treatment. You may get some
of the pests by blowing fine sulphur on the damp
foliage.

Covering Pruning Cuts.

To the Editor: I planted young apricot trees
in February. They seem to be growing all right,
but several of them have started to split at the
pruning cut. What is the proper thing to do
with them?—A Subscriber, Los Altos.

The little sketch seems to indicate that you
may have left a little too long a stub above the
bud from which you wished to get growth. If so,
cut again nearer—say one-quarter of an inch
above the shoot—and cover the wound with graft-
ing wax or a little thick paint which will not
run down the bark. This will prevent checking
and the wound will soon bark over.

OUR READERS INVITED TO CRITICISE.

Here is your chance to talk back at our
editors! You may propose your ideas on
agricultural subjects, air your grievances,
criticise Pacific Rural Press articles, or say
anything you want to within the law. Just
tell it in less than 200 words and we will
print it without assuming responsibility.
We want the page devoted to this to be a
free expression of our readers' minds. Send
us your tummyaches or the remedies for
other people's.

Planting Dormant Potato Seed.

To the Editor: About February 15 I planted
40 sacks of "best seed potatoes"—at least that
was what I ordered. They are coming up only
now and then a hill. The ground was in perfect
condition and I begin to think they must be cold
storage or frozen before they sent them to me.
It's a big loss to me and I wish you would explain
the cause of it.—Planter, Sacramento.

Whether the seed potatoes were actually frosted
by too low a temperature in storage or not, we
cannot tell from the pieces which you send after
lying in the ground since February 15. It is,
however, clear from the condition of the eyes,
which can still be seen, that the seed was not
in proper condition for planting. Whether the
seed comes from cellars or from commercial cold
storage, it should be exposed to light and heat
for two weeks or so before planting to start
the eyes into green sprouts, or at least to start
them a little, before planting. This is always
desirable and especially necessary when planting
early when the ground is cold. Planting too soon
after storage is probably the trouble.

The Black Peach Aphis.

To the Editor: I am sending a peach twig in-
fested with small bugs. Are these the tree louse?
What is a good remedy to control these bugs?
They are spreading from tree to tree. I would
like also to know how to kill black aphis on small
poplars and rose bushes.—L. C. N., Kingsburg.

You have the black aphis of the peach, which
is a particularly bad pest because it attacks the
roots as well as the foliage. Spray at once and
repeat the treatment several times probably, using
one pint of 40 per cent nicotine or "tobacco ex-
tract" and one pound of laundry soap to 100 gal-
lons of water. Make a little basin around the
root crown and pour in enough of the same dope
to soak well down among the main roots. The
lice on the rose and the poplar are not the same
as on the peach, but you can use the same spray.
In the case of the rose and poplar, however, you
need not treat the roots.

Probably Not Ants.

To the Editor: We are bothered by red ants
eating up eggplants and other vegetables when
they are first planted out. Is there a simple rem-
edy?—W. S. C., Lindsay.

It is not usual for ants to eat living plants.
They generally visit them to get honey dew from
plant lice, etc. Such injury is generally done by
flea-beetles, which are about as hard to see as
fleas are, for they are about as good jumpers.
Mix equal parts of lead arsenate powder and
flour, put in a cheesecloth bag and shake over
the plants till they look dusty. Do it when
there is no wind and do not breathe the dust.

California Weather Record

The following rainfall and temperature record is fur-
nished the PACIFIC RURAL PRESS by the United States
Department of Agriculture Weather Bureau at San Fran-
cisco for the week ending at 5 p. m., April 17, 1917:

STATIONS—	Rainfall Data.		Temperature	
	Past Week.	Seasonal To Date.	Normal To Date.	Max'm. Min'm.
Eureka	1.74	29.47	41.05	62 34
Red Bluff .....	.60	16.80	22.51	64 32
Sacramento .....	.14	12.39	18.20	66 38
San Francisco .....	.25	15.69	20.71	60 42
San Jose .....	.08	12.35	15.58	66 36
Fresno .....	.03	6.89	8.50	74 38
Independence .....	..	..	..	..
San Luis Obispo .....	.10	22.54	18.60	70 38
Los Angeles .....	.38	14.97	14.74	72 42
San Diego .....	.98	9.74	9.29	66 46

Blackberries and Intercrops Profitable.

[Written for Pacific Rural Press.]

The waste of high-priced land by getting only half of the crops it is capable of producing is what makes many farmers sell out and begin anew at other work. The man who gets the same profit from half the acreage has less interest to pay on his investment and gets more for his own time. H. Harris of Kern county is one who has come to realize this by joyful experience.

A few years ago he came to Kern county as a lifetime stock grower. He invested his money in a little piece of fruit land, hoping to improve it and sell, to get money enough to go into livestock farming on a larger scale than had been possible before.

Livestock farming for him has lost its glamour since he has done so well with fruit and vegetables. He is glad other people have livestock, because he has used many tons of stable manure on his 12½ acres of deep, sandy, loamy, decomposed granite soil.

Income \$2,500 from 12½ Acres.

Last year he took \$2,500 from the place, including about \$100 from young apricots, \$100 from young peaches, \$582.95 from blackberries and \$300 from strawberries. Grapes and blackberries were considered his best paying crops; but he also grew potatoes, tomatoes, other vegetables, chickens, and fruit.

Blackberries Paid Best.

Mr. Harris has both Crandalls and Mammoths on 2½ acres in the open. Mammoths were planted on an acre a year ago last spring, this variety being preferred because the Crandalls are just ripening when Mammoths have passed. The earliest varieties pay best, for they are sold fresh on the Bakersfield market every morning. Crandalls are alternate bearers for him also.

The highest price received last year was \$1.65 per tray of fifteen pint boxes. The lowest was 75 cents. Mr. Harris has been able to sell his fresh berries at 15 to 25 cents more per tray than those shipped in from Los Angeles. He has been working the home market for five years and is there himself every morning for six months of the year. Monday morning being the principal market day, Mr. Harris misses the Sunday leisure he would like, for he must get ready on Sunday for next morning's rush. The work requires three or four helpers all summer.

March and April are the best months for planting, according to Mr. Harris; but if you are not fixed to water them, better not plant at all. The ground is well manured, plowed deep, and worked down fine. Rooted tips are planted about three inches deep, preferably six feet apart in rows eight feet apart. They are watered at once, and again every two weeks all summer and sometimes oftener, for the roots should be encouraged to go deep.

The water lasts twice as long if you harrow and then cultivate after each irrigation, as if you neglect the harrowing. The soil is too wet two days after irrigation to cultivate, but the harrow loosens the surface and prevents much evaporation until the ground is dry enough to cultivate. There is nothing else to do the first

season; but during the winter, after planting, the vines are wound around a wire about three feet high, fastened on posts about three rods apart. A good crop is obtained in the second season, and twice as many the third season.

During ripening, which lasts about six weeks following June 1, the vines are irrigated at least once per week. Water is applied successively during the night to rows picked the preceding day. A furrow each side of the row is all that is needed; and this permits picking the day after irrigation, in emergencies. New vines are growing while the crop is being picked. For this reason and to avoid possible disease spreading from old canes to new ones, the old canes are cut off at the ground with pruning shears as soon as the crop is off. This enables the pruners to take out the twisted mass of old vines without injuring the young ones, as it would if they were allowed to intermingle till winter.

Apricot Blossom and Twig Blight and Sour Sap.

(Continued from first page.)

ing, a spraying with lime sulphur 1-25 may be of value in preventing the blossom and twig blight caused by Monilia, although in most cases this infection seems to be dependent upon frost injury. For spraying later in the season to prevent brown rot of the fruit, we do not yet feel safe in making any recommendation, since the apricot in our climate seems to be extremely susceptible to sprays at this time, and, furthermore, any injury to its appearance makes the fruit unsatisfactory to the canner and dryer. With young trees, that is those from one to five years of age, the great amount of winter injury which has taken place in the last two or three seasons and which shows itself in the form of sour sap and gumming, should receive the careful consideration of every grower. We believe that a heavy coating of whitewash applied about November 15 and renewed, if necessary, during the winter, is the best preventive of this trouble. It is also true in many cases that trees which have made an exceptionally vigorous growth on account of moist soil or late irrigation are especially susceptible to this. On the other hand, trees which have been weakened by neglect may also be affected. Both conditions should be guarded against as much as possible. What has been said about apricots in this connection applies equally well to prunes, cherries, walnuts and other trees, even including pears and apples.

WHITEWASH THAT WILL STICK.

We gave recently the recipe for a whitewash used by a grower at Yucaipa. The Placer Farm Bureau Monthly says that the following mixture has remained in the trees on the Frank Jordan place throughout the winter: 5 pounds rock lime (fresh); one-half pound salt; one-fourth pound sulphur.

While the lime is slacking add the salt and sulphur. If rabbits have access to the young orchard add 2 ounces of bitter aloes to the whitewash.

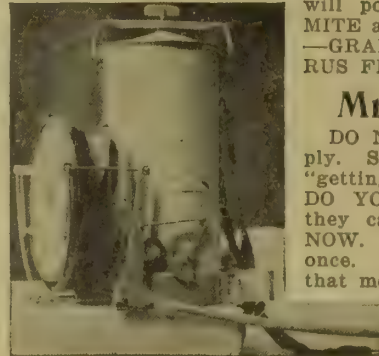
Be On Your Guard

RED SPIDER and MILDEW are active NOW. Every bit of your CROP will be needed THIS YEAR. Are you doing all YOU can to save it?

"A Puff in Time Saves the Vine"

DRY SULPHUR applied with

The American Beauty Dust Sprayer



will positively destroy RED SPIDER, MITE and MILDEW on vines and trees—GRAPE, PRUNE, ALMOND, CITRUS FRUITS, etc.

Mr. Orange Grower

DO NOT let your red spiders multiply. Save time, expense, and fruit by "getting them" before they "get you." DO YOU KNOW how much damage they cause in YOUR groves? DUST NOW. Get an American Beauty at once. The BEST DUST SPRAYER that money can buy.

FOR SALE BY ALL PROGRESSIVE DEALERS. If YOUR dealer cannot supply you, send us \$11.00 for a

vineyard size, or \$13.50 for an orchard size machine, and we will send you an AMERICAN BEAUTY DUST SPRAYER, all charges paid. Try it a week. If it is not entirely satisfactory, return it at our expense, and we will cheerfully refund your money. Send for circular and price list today.

WE FULLY GUARANTEE EVERY MACHINE

THE CALIFORNIA SPRAYER CO.

6029 PASADENA AVE., LOS ANGELES, CAL.

REEDLEY, FRESNO CO.

SEATTLE, WASH.



Perforated Tree Protector

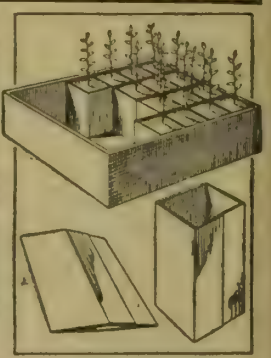
that will keep Squirrels, Rabbits and Gophers from barking your trees and give perfect protection from hot sun, sandstorms, barking in cultivation, etc. Tell us your pest and we will tell you what kind of a wrap to use. We make a number of kinds and can save every tree for you from pests.

Collapsible Planting Pots

These pots are bottomless. This allows you to plant pot and plant, never disturbing your plant nor stopping its growth in transplanting a single hour.

For starting early vegetables, such as Tomatoes, Cabbage, Eggplant, Cauliflower, Cucumbers, Cantaloupes and Squash; also for propagating Rose Cuttings, Geraniums, Eucalyptus and Conifers. It's the only practical pot on the market today for propagating work. Write us for samples of either Pots or Protectors. Tell us which you are interested in.

THE EXPAN PROTECTOR CO.,
935 E. Central Ave., Redlands, Cal.



CITRUS TREES

Planted from the famous San Dimas Nurseries, have produced the most famous groves.

We have the largest Citrus Nurseries in the world, and plant for the most exacting growers from Tehama to San Diego and Imperial counties. We assume entire charge of developing and planting for non-residents. Irrigation systems installed.

SATISFACTION GUARANTEED.

LONE HILL CITRUS ASSOCIATION

W. B. AMES, Pres.

NURSERY DEPT., SAN DIMAS, CAL.

O. W. AMES, Sec'y.

BUD SELECTION THRIFTY TREES

"Safety First"

Our buds for our Citrus Stock were selected from Pollard's Twenty-five Year Orchard, which are as prolific and true to type a grove as found in California. We guarantee all trees to be true to name and absolutely untouched by frost.

POLLARD & MARTIN

NORTH WHITTIER HEIGHTS CITRUS NURSERIES,
PUENTE, CALIFORNIA

TREE "THE BOSS" PROTECTOR



Made of Yucca Palm.

Is cheap, durable and quickly put on the tree. It prevents rabbits from destroying your trees. A sure protection against frosts, sunburn, grasshoppers, or dry winds. Can be easily removed, will last for years. Send for samples.

Prices Per 1000

10 in. long, 7 in. wide	\$10.00
12 in. long, 7 in. wide	11.00
14 in. long, 7 in. wide	12.00
16 in. long, 7 in. wide	13.50
18 in. long, 7 in. wide	15.00
24 in. long, 7 in. wide	18.00
30 in. long, 7 in. wide	21.00

YUCCA MANUFACTURING CO.,
1380 Willow St., Los Angeles, Cal.

BAKER'S TRACELESS HARNESS



Best plow rig. NO WHIFFLETREES NO TRACES.

Highest farm harness.

Indispensable in the orchard with special fitness for

all low down work. You can hitch closer to your

load, plow and cultivate close to the row and save

all the worry to man and team. No weight of

whiffletrees for man to lug. Everything clear behind

team. Use our outfit and save your trees. Highest

endorsement of farmers and fruit growers.

Write now.

B. F. BAKER CO., Numb.

1220 MAIN ST., BURNETT HILLS, N. Y.

Dewey Strong & Townsend

PATENTS

911 Crocker Bldg., S. F.

Circular containing 100 mechanical

movements mailed free.

Peach Statistics for Sutter County

[Written for Pacific Rural Press.]

We present below a table of acreage and age of different varieties of peaches in Sutter county, carefully compiled by a reliable authority last winter. It will be seen that drying peaches are not popular there; but clings have been planted rather heavily. A considerable drop

is noted in the acreage planted a year ago. Such tables, accurately compiled, would throw much light on the future of the peach industry if they covered the peach producing sections. Of the total 4,309 acres in peaches, a good bit over half are four years old or less:

PEACH VARIETIES, AGE, AND ACREAGE.												
Variety.		Years Old and Acreage.										
		1	2	3	4	5	6	7	8	9	10	11 12
Phillips	.....	75	240	412	176	138	77	53	87	94	115	37 105
Tuscans	.....	159	360	289	333	214	178	88	115	67	77	16 123
Midsummers	.....	79	82	46	12	24	11	15	12	20	9	8 77
St. Johns	.....	70	79	23	..	..	23	..	..	..	..	..
Houss	.....	41	102	39	20	..	..	20	..	..	..	..
Walton	.....	60	7	..	..	..	..	..	..	..	..	..
Muir	.....	..	..	..	8	21	8	24	36	49	32	29 65
Totals	.....	513	853	935	591	107	137	200	250	230	233	90 370

Tanglefoot for Mites and Red Spiders

[Written for Pacific Rural Press.]

Tree tanglefoot in a wide strip around the trunks is recommended by J. B. Hundley of Yucaipa to keep the brown mites (bryobia pratensis), often called red spiders, off from the deciduous trees they infest.

"I have seen tanglefoot bands on which there were four or five layers of bryobia and others crawling over the tops of them," says Mr. Hundley. These mites generally hatch out on the trees also, where they feed on the young leaves, and of course they must be treated with sulphur, as tanglefoot would not catch them.

Farm Adviser J. W. Mills of Solano county points out that common wild morning glory is a great breeding host for both this and the real six-spotted red spiders. This and other weeds and grasses may be the breeding places of the mites observed by Mr. Hundley. At any rate, tanglefoot is cheaper than mites on the trees and should be applied early where there is danger of infestation.

DON'T LET PEACH APHIDS RUIN CROP.

[Written for Pacific Rural Press.]

At this season, black peach aphids are emerging from their winter quarters in the ground and climbing peach trees to feed on the young leaves and fruit, especially low on the trees. They curl the leaves and spoil fruit for market. Then it is too late to save anything but the remains. The adults are shiny black, but the young are more numerous and are brownish. Spray with nicotine sulphate, one pound per 200 gallons of water, to which has been added ten pounds of liquefied fish oil soap, or one gallon of cresol soap, to make it spread. The earlier this is done the more fruit will be saved and the more bugs can be reached before the leaves curl over them.

WATERING TERRACED ORANGE TREES.

[Written for Pacific Rural Press.]

Last summer, while Manager W. N. Barlow of the H. H. Ford orange ranch in San Bernardino county was in the East, the men used lots of water, but it didn't work. There are sixty-five acres of trees planted at the edge of steep terraces. These trees were dry and water was scarce when Mr. Barlow returned early in July. Two furrows were plowed above each row pretty close to the trees and water run through them slowly. The soil is decomposed granite, in which the water soaks down rather than sideways; so the rest of the terrace was not easily cultivated after the irrigation. The trees were in good shape by the end of July. When the flats were plowed this spring, the unirrigated ground was still hard and tough "like rubber."

Lemons are excellent in the treatment of low fevers, biliousness, rheumatism, liver complaint, and coughs. Lemonade will relieve the feverish thirst in sickness.

Security Orchard Ladder

(of course it costs more)

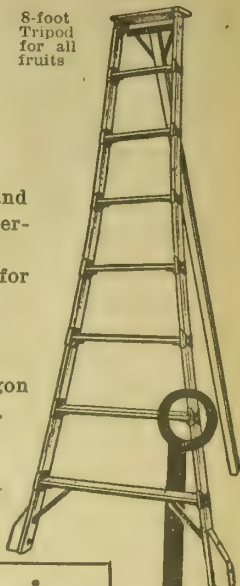
Galvanized sheet steel riveted to step and machine-wrapped around the stile adds super-strength where strength is most essential.

Step mortises eliminated. No chance for weakening under any man's weight.

RIGID—SAFE—SECURE

All lumber is clear, straight-grain Oregon pine—another factor of safety and economy.

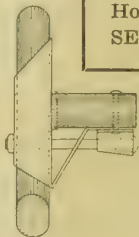
8-foot Tripod for all fruits



SAVES TIME-LABOR-MONEY.

Patterson (Maker) Coming to see you personally

Will soon be in your district to demonstrate to you why it is MONEY IN YOUR POCKET to pay more for SECURITY ORCHARD LADDERS instead of less for the dangerous, wabby kind. Hold your ladder orders until you have seen the SECURITY. Send the coupon today.



See the JOINT—that's the POINT

Coupon—Sign it NOW

PATTERSON
82 FRANKLIN ST., OAKLAND, CAL.
COME SEE ME

Name.....

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PRP4217

You'll never have to drive a nail into any SECURITY joint. Stile reinforcement assures absolute rigidity ALWAYS.

Tree Protectors

That Really Protect



Quickly and easily put on. Will stay.

Fitted with galvanized wire ties.

If you want better protectors for less money write us for sample and prices.

Patent applied for.

Angelo & Son

Bay and Mason Sts.,
SAN FRANCISCO.

Fertilizer Quality

When you buy a ton of fertilizer remember you are buying what is in the goods and not merely two thousand pounds.

When a smelter buys a ton of gold ore he insists on knowing the number of ounces of gold it contains, and you should know the amount of active Nitrogen, Nitrate of Soda, the gold of the fertilizer.

Write for Books

DR. WILLIAM S. MYERS
25 Madison Avenue, New York

WAR IS DECLARED

Maximum Crops are Needed.

Use WESTROBAC to
Inoculate your BEANS for larger crops.

WRITE US FOR PARTICULARS.

Western Soil Bacteria Company

442 Sansome St., San Francisco

Quality and Quantity of Production

Our trees are successful because of the exacting methods practiced in their production. In the growing of our Citrus trees the highest standard of nursery practices secures to the planter vigor of growth, superior merit of production and guaranty of trueness to name.

WRITE US.

50,000 Valencia, Navel Oranges, Eureka Lemon Trees

WALKER & HUBBARD NURSERY,

First Nat'l Bank Bldg.

San Fernando, Cal.

Much to Learn, University Farm Picnic.

[Written for Pacific Rural Press.]

Five thousand persons attended the University Farm Picnic in 1915. Over 15,000 attended in 1916. The student body met visitors at the gates and showed them whatever on the farm they wanted to see. Every department had exhibits illustrating the best things learned during the previous years. Men in charge answered visitors' questions. That's what they were there for. There was all kinds of entertainment and fine speaking, too.

On April 28, 1917, the University Farm faculty and students will welcome all comers to a picnic the equal of which has not been seen before, using all their past experience to make this the best ever.

Just ask the fellow that jumps aboard your rig at the gate to take you where are the experiments you are most interested in. Don't miss anything. Get there at 8 a. m.

The following items of special interest are clipped from the program as printed in the "University Farm Agricola":

8 a. m. to 6 p. m.—Children's Playground open with attendant in charge.

8-11 a. m.—Visitors received by Reception Committee and shown points of interest on the Farm.

10 a. m.—Stock Judging, Pavilion—Gold, silver, and bronze medals awarded. Classes of horses, hogs, dairy and beef cattle. Address by well-known judge.

10 a. m.—Demonstrations for Visiting Agriculturists—All experiment plots open to inspection and demonstrations given. All stock barns and stock on display with attendants present explaining the essential points of that particular division. The entire Farm an "open house."

11 a. m.—Speaking—Governor Stephens; Senator A. H. Breed; Jack Hunsaker, A. S. U. F. Representative; K. A. Ryerson, A. S. U. C. Representative; Dean H. E. Van Norman, presiding. Davis Band.

12 to 1 p. m.—Lunch—Visitors should bring lunch; coffee and cream free.

1 p. m.—Women's Entertainment—Auditorium Building—Lectures, demonstrations, discussions, problems in home economics, card parties, exhibitions, etc.

3 p. m.—Parade—Greatest livestock parade in the West. Each division to be represented by a float. To form at Dairy Barn and circle around the athletic field in front of the Governor's reviewing stand and park for thirty minutes on field, so students in charge of floats can explain the essential points of that division which he represents.

6 p. m.—Open air cafeteria near dining hall.

8 to 12 p. m.—Entertainment.

Tractor demonstrations and illustrations of the effect of speed on plowing, best methods and uses of water, feeding and care of livestock, poultry, and orchard trees, preparation of seed bed—anything you care to ask about.

FIELD CROP SUGGESTIONS.

After his five acres of oat hay are cut, G. D. Mead of Stanislaus County waters the ground, plows it, and raises a crop of casabas or beans.

E. O. McClure of Santa Ana grew 20 acres of barley last winter which was mowed and fed green this spring to his purebred Holsteins; and a crop of beans is now enriching the ground while promising to enrich its owner.

It will soon be time to plant Sudan grass.

It is now time to test seed corn. Ground wasted by poor stands due to poor seed used by some farmers would pay the wages of a man or two.

A family garden will give much better vegetables than can be bought at many places.

It will pay to pay a high price for fresh, pure viable seed rather than to be "penny wise."

The area devoted to the cultivation of tobacco in the United States in 1915 was 1,368,400 acres. The production of tobacco was 1,060,587,000 pounds, and the farm value on December 1, 1915, \$96,041,000.

SELF-OPENING GATE.

To the Editor: Please give a description of a self-opening gate for farm use that could be made on the farm.—H. H. P., Sebastopol.

Who of our subscribers has one that is not patented?

Thirty-five fig growers met at Ceres last Saturday and agreed not to contract their fruit until after the next meeting, June 9.

We are facing a world wide food shortage. For the sake of the hungry world as well as for the good of your bank account you ought to make every foot of your land produce its utmost. You can't possibly do this without fertilizing. Germany's crop failures for the past two years have been largely due to her inability to secure proper fertilizer materials.

GOLD BEAR FERTILIZERS

Are made from Animal products that contain the elements necessary to meet California soil conditions and crop requirements.

PURE ANIMAL MATTER
AMMONIATES



FOR CALIFORNIA SOILS

Remember that fertilizing is not an expense but an investment that will bring big, sure, and quick returns.

Let us help you make your land produce the biggest and best crops possible.

Address

Fertilizer Department

WESTERN MEAT COMPANY

San Francisco, California

THE CUNNINGHAM LAND ROLLER AND PULVERIZER



Spalding-Robbins Disc Plow Co.

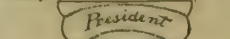
Makes a Perfect Seed Bed—Stops Evaporation—Preserves Moisture—The Best Clod Crusher ever made for Farmer, Orchardist, Vineyardist, Nurseryman and Seedsman.

Made in All Sizes. Write for Circular. Manufactured and Sold Exclusively by 625 Market St., SAN FRANCISCO

The Give-and-Take-is Free-and-Easy

President
Suspenders
for comfort

and long service. The "give and take" feature adjusts with every movement of the body freely and easily.



Dealers everywhere sell Presidents at 50c. Ask for them by name. Look for "President" on the buckle. Accept no others—WE refund your money—if they don't please you. PRESIDENT SUSPENDER CO. Shirley, Mass.

Plant Your POTATO Land When Crop is off to

RHUBARB

If planted then you can expect BIG PROFITS by fall or early winter. OTHERS MAKING \$1,000 PER ACRE ANNUALLY—SO CAN YOU. Don't put it off any longer. April-May-June positively best months to plant. WRITE

J. B. WAGNER

"Rhubarb Specialist"

PASADENA,

CALIF.

SEND NO MONEY

A can of lightning exterminator for Gopher and Squirrels sent on a guarantee.

Santa Ana Compounding Co. SANTA ANA, CALIF.

EUCALYPTUS

We have yet a limited stock and invite inquiries as to price and variety.

W. A. T. STRATTON,

Petaluma,

California



CHUBBUCK'S IDEAL GOPHER TRAP

Larger than runway; jaws pull rodent in; catches large or small gopher and holds it. Farmers say it's worth dozen other makes. Big Siles. Price 50c. If not at your dealer's will send it to you postpaid; 2 for 95c; 6 for \$2.70; 12 for \$5.10. Money back if you are not satisfied. Free circular. E. J. Chubbuck Co., Dept. B, San Francisco, Cal.

start a home Garden!
with **Germain's**
PROVEN SEEDS

and you'll reap a rich harvest of crisp, luscious, succulent, nutritious vegetables—and cut your grocery bill down one-third to one-half.

Take no chances with doubtful seeds—plant Germain's proven seeds and you will obtain definite, certain results. Germain's seeds are specially adapted to California soil and climatic conditions.

Germain Seed & Plant Co.
326-328-330 So. Spring St.
Los Angeles

FIGS **MAMME**
and
PROFICHI
FOR SALE
THOS. H. LYNCH
FRESNO, CAL.

Box 302, R. R. B.,

What Kind of Foodstuffs to Grow.

[Written for Pacific Rural Press.]

President Wilson has called on the farmers of America to produce all of the foodstuffs possible. He has called on the wives of all men and the cooks of the cities not to waste any, for we must not only feed ourselves, but we must supply the European nations which face the possibility of starvation like Belgium. He has asked all middlemen to forego unusual profits.

As there seems an assured market for food products, it is scarcely necessary to urge farmers to make the most of it. The main question is concerning what kinds of foodstuffs should be planted at this late time of year.

To answer this question, a survey is being made in the two weeks beginning April 16 of the crop conditions, possibility of increased acreages, livestock conditions, etc. This survey is a succession of hearings in all food-producing counties of the State by members of the College of Agriculture, State and County Horticultural Commissioners, other State officers, and U. S. Department of Agriculture investigators. Each forenoon a limited number of the best posted men in each district are asked to advise the board of inquirers in that district. In the afternoons the State food and resources are discussed in open meetings.

Inquiries to be held after date of this issue are: April 23, San Francisco, Crescent City, Del Norte county, Placerville, Fresno and Susanville, Lassen county; April 24, Auburn, Hanford, Haywards and San Diego; April 25, Grass Valley, Visalia, Martinez and Los Angeles; April 26, Marysville, Bakersfield and San Bernardino; April 27, Fairfield and Imperial.

Meanwhile, Dean Thos. F. Hunt of the College of Agriculture has pointed out from tables prepared by Prof. M. E. Jaffa certain significant facts. The table shows "the value at the point of consumption of suitable foods for the average family of five persons, based on present prices."

The maximum per family is totaled at \$650.55 or \$0.356 per person per day. Over half of this is classified as "protein foods," milk, meat, eggs, and beans. Meat is nearly a third of the total. Milk is over one-eighth of the total, eggs a little less, and beans \$2.40 out of the \$650.55. Flour, cereals, macaroni, rice, and potatoes total less than the milk and slightly less than the vegetables and fruit.

The lesson is that unless Americans radically change their food habits, by far the greatest demand will be for meat and milk. This means not only careful breeding and rearing of animals, but, as Dean Hunt points out, the planting of greatly increased acreage of the sorghum grains and Sudan grass. He also points out that "about one-third of all the land plowed in the United States every year is planted to Indian corn. An acre of Indian corn has nearly twice the value of an acre of wheat for human consumption. Broadly speaking, Indian corn is used for the production of butter and animal fats."

California has proved her ability to raise Indian corn in the river bottoms and on the coast hills, not only for grain but for silage to keep our animals producing meat and dairy products when other feeds are less available.

SUPERS, DRONES AND SWARMING.

In answering a beginner as to when he must put on supers, and what to do about drones, and how to prevent swarming, the "Western Honey Bee" says:

"Supers for surplus honey should be placed on hives as soon as the bees begin to 'whiten the combs'—that is, as soon as new wax is being secreted, which indicates a free honey-flow.

"There is nothing which a beginner can do in regard to drones or to prevent swarming. Better let them swarm and hive the swarm, putting it in a new hive on the old stand, removing the old hive to a new place."

Ask the Man Who Has Used It

Nitrate of Soda leaves no mineral acid residues which may destroy neutral soil conditions. It does not require time to be Nitrated as do all other forms of Nitrogen. There is no risk of loss by Nitration, since it is delivered to growers already Nitrated. No matter how cold the season may be, time lost in Nitrating other forms of Nitrogen in your soil is wholly saved.

DR. WM. S. MYERS

Chilean Nitrate Propaganda

25 Madison Avenue New York

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AGRICULTURAL ENGINEERS

Agricultural Investigation, Drainage, Legal Engineering and Water Right Reports. Alkali and Marsh Land Reclamation. Appraisal of Irrigation Systems. Management and Development of Lands. Ranches and Irrigation Projects. Soil Surveys.

58 SUTTER ST., SAN FRANCISCO, CAL.

Kill Squirrels Gophers

The only exterminator that is 100% efficient and guarantees results or money back is

KILMOL
SQUIRLGOPHENE

Used and endorsed by biggest and most successful ranch owners. Prepared waste balls saturated with KILMOL give best results.

New formula of U. S. Gov't Poisoned Barley is effective in dry weather.

Your dealer carries Kilmol, U. S. Gov't Poisoned Barley & Waste Balls.

WASTE BALLS \$6.00 PER THOUSAND

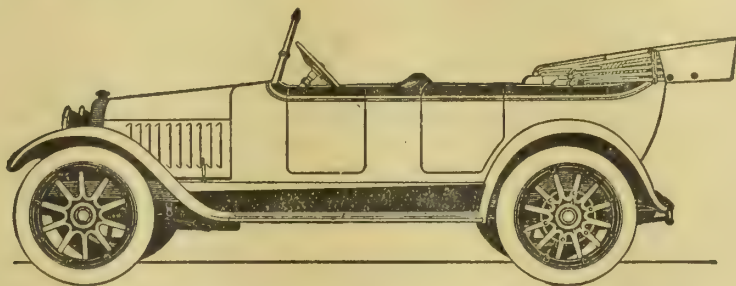
Cheaper than you can make them

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1170 Sutter St. San Francisco

Bush Car Delivered Free

Ride in a Bush Car. Pay for it out of your commissions on sales, my agents are making money. Shipments are prompt. Bush Cars guaranteed or money back. Write at once for my 48-page catalog and all particulars. Address J. H. Bush, Pres. Dept. 4-IN.

BUSH MOTOR COMPANY, Bush Temple, Chicago, Illinois



Chalmers 7-Passenger Touring Car—Price \$1350 Detroit

Daily You Will Find New Charms in This Chalmers

Some cars are noted for their comfort. Others are distinguished for their beauty. Others, for the strength of their chassis. But the Chalmers is an all around car. It has power, comfort, beauty, strength. All four.

Comfort

Picture a 122-inch wheelbase. With a front seat 41 inches wide, and a tonneau that extends from front to rear more than the reach of the average man.

Power

Imagine an engine that weighs 550 pounds. And turns up 45 horse-power. One horse-power for every 12 pounds of weight. Which with a total car weight of 3005 pounds means power ease on the hill. One horse-power for every 67 pounds of car weight.

Strength

Then turn over in your mind the extreme strength there must be in a car that is largely built of drop forgings, chrome nickel steel,

Lynite aluminum, crucible nickel steel and carbon steel.

All expensive metals. But placed in the Chalmers chassis for a specific purpose—to make it rugged and strong, though light in weight.

Such quality makes for durability and economy. For a thing made of good materials, always is well made.

Beauty

And a car made of the kind of materials you find everywhere in the Chalmers would be indeed incomplete without beauty and distinctiveness of lines.

See the high narrow radiator, the double cowl, the sweeping body lines, the finish that denotes hours of patience and care. And provides beauty, not for a day, nor for a month, but for years.

All the above means quality. The kind of quality you need in the car you buy and the kind of quality you GET in the Chalmers.

Touring Car, 7-passenger . \$1350	Touring Sedan, 7-passenger \$1850	Limousine, 7-passenger . 2550
Touring Car, 5-passenger . 1250	Roadster, 3-passenger . 1250	Town Car, 7-passenger . 2550

(All prices f. o. b. Detroit.)



Chalmers Motor Company
Detroit, Michigan

Mechanical Power on the Farm

Users of tractors, engines, pumping plants, motor trucks, automobiles, electric motors, and other mechanical farm power are invited to make this department an exchange of their experiences and troubles.

MORE TRACTORS AND MACHINERY TO REPLACE WAR DEMANDS FOR MEN.

[Written for Pacific Rural Press.]

Have you had trouble getting satisfactory farm help and keeping the good workers? You will have more trouble from now on. Every tunnel on the railroads has two guards; every manufacturing plant is adding to its force enough guards to reasonably insure safety from plotters. Men have little trouble these times finding easier jobs than working for someone else on a farm. Every man who joins the army and navy makes it easier for the others to get what is generally considered a better job than being a hired man and sleeping out. Every horse used in the cavalry and every pack mule reduces the home supply.

We must face the facts and protect ourselves. When harvest comes, we must know that we have power to run our machines and arrangements made so that we require the fewest men possible to do the work. In the orchards and even the vineyards, we must get power in a compact form by which one man may do as much cultivation as several now do.

For Our Dairies, we need to provide mechanical power to cut our corn in the field and even haul it to the silage cutters. Instead of several men and teams with pitchforks to load and unload manure, we need ma-

nure spreaders and arrangements for loading them without the armstrong work which may be unavailable; and we need power to haul big loads to the field and distribute them, not in big chunks, but in a smooth layer over the fields so the manure may be readily available for bigger crops.

On Wet Bean Lands, we need power that we can depend on to get the land plowed and worked down fine at the earliest moment after the soil is fit. Even among potatoes and corn, the cultivation done two or more rows at a time, may save an extra man.

In Hot Weather, with mechanical power, we can keep on working without trouble with humanitarians. A shade over the operator of a tractor raises no condemnation as it often does over the driver of horses which might get too hot. Instead of feeding extra teams to shift in for the hard work and the night work, we can keep the tractor going if we take care of it.

With the war making labor and workstock scarcer and more expensive, those who have wanted tractors but thought they could not afford them, can now see easily where they cannot afford to be without one on a farm of ten acres or more.

Reliable tractors are now made in California or shipped over the mountains to us, of all sizes which have proved economical on all sized farms.

Like the automobile, the question in buying a tractor is not any longer whether its engine and transmission will stand the strains they are guaranteed for. The questions now are along the finer points of operation, convenient appliances, easy turning, and best size for individual needs.

As time goes on, we will find that we can use tractors in a multitude of ways that now seem inconvenient, for we will have to adapt operations to that need. Then we probably will find that we have really reduced the costs of production, however unwillingly we may have been forced to it.

The man without enough money to buy a tractor, if a farm owner may borrow from the Federal Land Bank at 5 per cent interest, enough money to buy tractors and labor-saving machinery. If a renter with a good reputation for industry and headwork, he can get his landlord to furnish the security for implements by which payment of the rent will be made more sure.

F. T. Robson of Berkeley has just placed an order for a 30-foot 12-inch Type C. H. C. Layne & Bowler turbine pump to be direct connected to a 15 h. p. motor for his ranch at Davis.

The Bean Spray Pump Co. offered their plant to the Government for any purposes required, and have been wondering whether to go after more orders for their tractors, spray pumps, and irrigating pumps.


Layne & Bowler PUMPS

EVERY Western rancher KNOWS that from his standpoint this is going to be the most prosperous year in the history of the country IF his water supply does not fail. Have you fully prepared to bring your crop thru with the greatest success? Make sure your irrigation facilities will not fail you at the critical time by installing a Layne & Bowler Pump. Don't wait. Prepare now. Our Catalog No. 25 gives full details. Ask for it.

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900 Santa Fe Ave., LOS ANGELES

Let The World's Largest Water Developers Solve Your Pumping Problems



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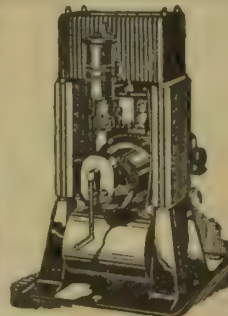
ELECTRIC APPLIANCES in the household, not only add to the convenience of all members of the family, but they are economical and time-savers. ELECTRIC APPLIANCES include CHAFING DISHES, COFFEE PERCOLATORS, VACUUM CLEANERS, ELECTRIC IRONS, and every other appliance that is needed in the modern home, not forgetting ELECTRIC FANS.

We carry these appliances in many of our branch offices, and will be glad to have you call and inspect them. Where we do not carry them we will be just as glad to give you our expert advice.

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Branches in all principal cities and towns of North Central California.



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GASOLINE-ELECTRIC UNIT
LIGHTING SYSTEM

Electricity for Farm Homes

At one-third cost of juice from Power Company (this includes interest on cost of plant). It is the simplest and most economical plant on the market.

No Batteries—No Switchboard—No Rheostat

Will operate 50 lights 7½ hours for 11c. Will also operate electric fans, irons, small motors, etc. If your buildings are not wired, send us plans and we will give you full instructions so that you can wire them yourselves. Material furnished at lowest cost.

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ELECTRICAL ENGINEER.

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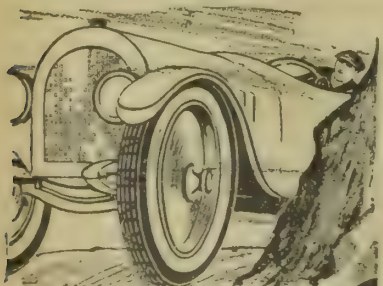
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Pacific Pipe Co.

MAIN AND HOWARD STREET,

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NORWALK TIRES

Irrespective of cost, these are positively the greatest mileage-givers on the market, we honestly believe.

While guaranteed for as high as 7500 miles, they invariably deliver from 10,000 to 20,000 miles of perfect service. Use them and reduce your tire cost. Ask for folder.

Factory Distributors:

Lichtenberger-Ferguson Co.

Cor. Pico and Hope Sts.,
Los Angeles
1211 Van Ness Avenue,
San Francisco

ELECTRIC EQUIPPED MILK HOUSE.

[Written for Pacific Rural Press.]

Probably no better use can be made of the tank house on the average dairy than to utilize it for a milk room, provided it is located conveniently to the dairy barn.

On the Holstein breeding ranch of Gotshall and Magruder at Ripon the lower part of the tank house was finished inside with cement plaster to a height of about five feet, and the balance of the walls and ceiling plastered with ordinary lime plaster. A well drained concrete floor was laid; and an opening two feet wide extended along one entire side wall. A shelf two feet wide runs along the inside wall next to this opening for airing utensils, the opening being screened, and also equipped with board doors that can be fastened from the outside in rainy weather. The outside door and window are also screened to prevent flies.

The milk room is equipped with a separator and galvanized iron washing trough, steam for which is furnished by a small boiler that is located in a lean-to shed that has been added to the back of the tank house. Electric power is used for pumping and a small motor is used to run the separator. The room above the milk room is used for hired help; and above that is located the large water tank, allowing utilization of all the building for useful purposes.

MOTOR FOR COACHELLA IRRIGATION.

[Written for Pacific Rural Press.]

A wonderful alfalfa yield was secured by A. H. Smith on 45 acres of Peruvian in Coachella Valley where nothing would grow in summer without pump water. No other irrigation is available; but with a 35 h. p. motor costing \$5.70 per ten hours' run he gets 125 inches of water from the centrifugal pump. This covers five acres in a ten-hour day, penetrating the sandy silt two feet deep, as he has learned by digging after irrigation many times.

The well is 12 inches across at the top, and 700 feet deep. Water generally rises within 35 feet of the surface and pumps down not over 32 feet. The entire stream could be turned into one of the checks, which were 30x660 feet, and would run through in 30 to 40 minutes, but it is divided into two checks to soak the soil deeper. Even with such a stream, in July and August it is hard to give enough water and the alfalfa is more or less stunted by the heat. Weekly irrigation is needed, but the alfalfa gets only two irrigations per cutting.

POWER NOTES.

It is reported that one California tractor company cleared 100 per cent on its investment of \$1,000,000 last year.

Even a track type tractor is not proof against quicksand as evidenced by the big one in Merced County which had sunk until only the top, on one side, showed above ground. It was pulled out by another tractor.

To keep down the upkeep expense

of a car, have it thoroughly overhauled once or twice a season by someone who is thoroughly competent.

Bills in the legislature propose: Uniformed inspectors to enforce the State laws on the highways; red lights and flags on trailers; cars in the country must not be over eight feet wide; description of motor to be put on back of registration certificate to help prevent theft; restrictions on truck loads per inch tire width; lights must focus not over 42 inches above the road 75 feet

ahead; no racing on highways; no stop for repairs, etc., without pulling off to the side; no livestock on the highways except with attendants; taking another's car for a joy ride made a felony; accidents to be reported to nearest police head-

quarters; no baggage on left side of automobiles; protection at railway crossings; no defacement or alteration of identification marks of vehicles; no more than 10,000 pounds per load on a paved highway except where one article exceeds this, etc.

MAKE BIG MONEY PULLING STUMPS



Pull the stumps from your fields and replace them with big crops. Don't pay taxes on idle land.

The Hercules All Steel Triple Power Stump Puller

Pulls an acre of stumps a day. Pulls biggest stump in 5 minutes. Guaranteed against breakage for 3 years. 30 days free trial. Send name for book, free—and special low-price offer. Address: Hercules Mfg. Company, 912 25th St. Centerville, Iowa, U. S. A.

\$1150 F. o. b. Racine
Mitchell Junior—a 40-h. p. Six 120-inch Wheelbase

Mitchell
SIXES

\$1460 F. o. b. Racine
7-Passenger—48 Horsepower 127-inch Wheelbase

Twice as Strong To Give You a Lifetime Car

Here is a new reason for getting a Mitchell to drive on country roads.

In the past three years, John W. Bate has doubled our margins of safety. Now every important part—by test—has 100 per cent over-strength.

Over 440 parts are built of toughened steel. All safety parts are oversize. Parts which get a major strain are built of Chrome-Vanadium.

Gears are tested for 50,000 pounds per tooth. The springs we use—Bate cantilevers—have never yet been broken.

Several Bate-built Mitchells have already run over 200,000 miles. So it is quite unlikely that a man will live to wear a Mitchell out.

Extra Features

That over-strength, in our opinion, is the chief Mitchell extra. But there are many others.

There are 31 features in the

Mitchell which nearly all cars omit. Things like a power tire pump, a dashboard engine primer, ball-bearing steering gear, etc.

And this year's cars have 24 per cent added luxury—all paid for by savings in our new body plant. The Mitchell is now the luxury car of its class.

All Extras Free

All these extras come free in Mitchell cars. They are paid for by factory savings.

John W. Bate has spent millions of dollars in building and equipping this model plant.

TWO SIZES

Mitchell—a roomy, 7-passenger Six, with 127-inch wheelbase and a highly developed 48-horsepower motor.

Price \$1460, f. o. b. Racine

Mitchell Junior—a 5-passenger Six on similar lines with 120-inch wheelbase and a 40-horsepower motor— $\frac{1}{2}$ -inch smaller bore.

Price \$1150, f. o. b. Racine

Also six styles of enclosed and convertible bodies. Also new Club Roadster.

It covers 45 acres. The one aim has been to build this one type of car economically.

His methods save us on this year's output at least \$4,000,000. And all that saving goes into extra values.

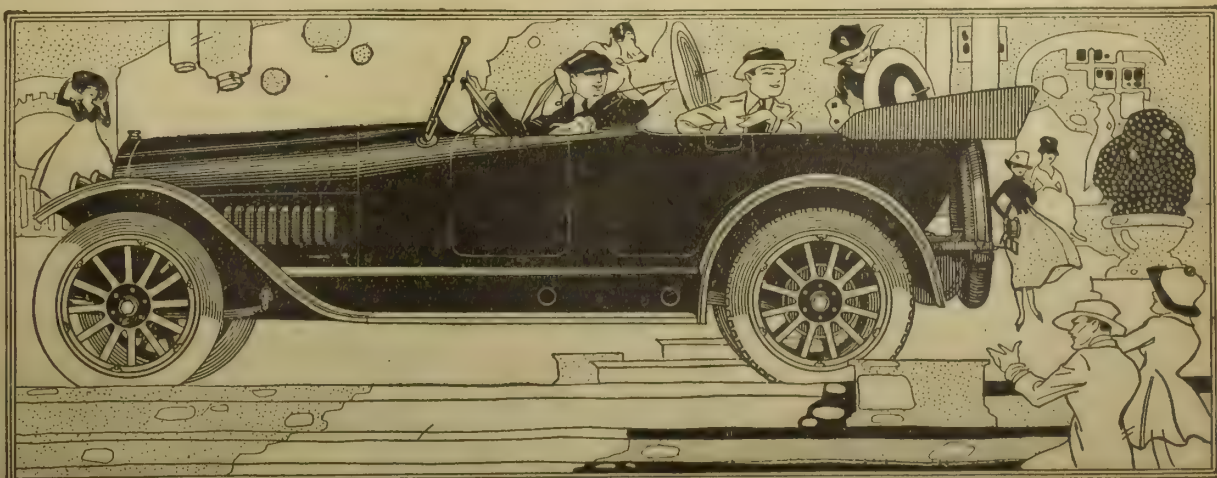
The result is extra features, extra beauty, extra strength. Cars built in other ways can't give them.

One Size—\$1150

Note that Mitchell Junior, with 120-inch wheelbase, sells for \$1150, f. o. b. Racine. You never saw such value in a fine car. Even this smaller car has nearly all our extras.

Go see these new models. See what these extras mean. You will not then want a car without them. If you don't know the nearest Mitchell dealer, ask us for his name.

MITCHELL MOTORS COMPANY, Inc.
 Racine, Wis., U. S. A.



General Agricultural Review

Field Crops.

Potatoes were quoted on the wharf in San Francisco early this week at \$5 per cental.

A government report says that the winter wheat crop is 50,000,000 bushels below last year's yield.

The Southeastern States are draining the Pacific Coast mills of their flour supply, and wheat futures are soaring in consequence.

Yolo county signalized April 10 as squirrel extermination day. Five hundred pounds of poisoned wheat was distributed among the farmers.

Millers are beginning to increase their prices on all grades of cleaned rice. Southern markets are reported firm.

A large area in the vicinity of Gridley, Butte county, is already planted to rice. In some of the fields the water was turned on last week.

Hay promises to be a scarce article this summer in the San Joaquin Valley. Some farmers are cutting their alfalfa prematurely in order to get feed for their stock.

The Turlock Merchants and Growers' Association will install an extensive bean cleaning plant in time for the 1917 crop. It will have a capacity of 1,500 bags per day.

A small shipment of new silver skin onions was in Los Angeles the past week from the Imperial Valley. They sold in a limited way at \$10 per cwt.

It is said the pool of the California Lima Bean Growers' Association will close May 10. After that date no more growers will be taken in for the 1917 season.

A few boxes of new summer squash was on the Los Angeles market in the past week from the Imperial Valley. They sold at \$3 per crate of four baskets.

Beet thinning is being actively prosecuted in the Oxnard district. The beets are said to be growing fine and the prospects are for a good crop.

A sale of 1,000 bags of Butte county rice was effected recently at \$3.45. The rice was very high grade, of the Waterbune variety, and the price obtained is said to be unprecedented.

The offering of buyers to contract lima beans of the new crop for 10½ cents per pound in Orange county, it is thought, will cause growers to put in a big acreage. Planting will commence May 1.

One hundred thousand tomato plants were shipped to Oxnard last week to be planted in that district to supply tomatoes for a new cannery that is now being erected at Hueneme.

Wholesalers announce an advance in price in all varieties of beans, the prices ranging from 10 to 16 cents per pound. Consumers will pay anywhere between 15 and 20 cents hereafter.

While the consumption of barley in California is estimated normally at 30,000 tons a month, it is believed there are less than 10,000 tons of barley stock in the State at the present time.

In many sections of California rice is largely replacing wheat and other grains as a stock feed. Wheat is bringing around 3 cents a pound, while rice, in the paddy, or husk, sells as low as 1½ to 1¾ cents.

Although the onion crop of Texas is two weeks later this season than usual, that State is beginning to send out shipments to relieve the country-wide shortage of the savory bulbs, which will send down prices.

Hay and other feedstuffs have been rising rapidly in price during the past month, and the end of the upward movement is not in sight. There has been a jump of about \$9 a ton in wheat hay.

It is reported from El Centro that many thousand acres of alfalfa will be plowed up in the Imperial Valley, and planted to cotton owing to the high price of cotton. The acreage of milo maize it is said, will also be large.

Reports from Redlands say that last Monday's rain there was .55 inch and did much good, as the ground was too dry to plow. Farming operations will now go forward. Another rain this week helped the growing crops.

The State Commissioner of Horticulture says that in both the lower and upper regions of the San Joaquin Valley grain crops are beginning to suffer. Except on river-bottom lands, the barley harvest promises to be light.

Early this spring a doctor in the Imperial Valley sowed peas in his grapefruit orchard, intending to use them as a cover crop. A chance buyer bought the pea crop at a good figure. The stripped vines will be turned under to serve the original purpose of supplying a fertilizer.

A badly needed shower was had throughout southern California Monday of last week, doing much good, as but little rain was had during March. Crops were badly in need of moisture and the rain will greatly help both the staple crops and vegetables.

In the Arroyo Grande Valley, near Salinas, large fields of horse beans are badly infested with aphids. The cost of \$7 per acre for spraying, the remedy recommended by County Horticultural Commissioner Christensen to combat the pest, will not be borne by some of the farmers.

A number of farmers along the Sacramento river are contracting with the representative of a large New York seed jobbing house to grow seed to supply the seed shortage. Since the outbreak of the war little or no seed has been received from Europe, heretofore the main source of supply.

The high prices now paid for Egyptian cotton is attracting attention to the possibility of growing this staple in the San Joaquin and Sacramento Valleys, says the U. S. Department of Agriculture. The success of cotton growers in the Imperial and Colorado valleys and the Palo Verde district seems to warrant the experiment.

Approximately 13,000 crates of onions were included in the cargo of the steamer Sierra, which arrived in San Francisco from Australia last week. This is the second and heaviest shipment to arrive this season and is to be followed by other large shipments. A portion of the shipments were sold ahead at prices ranging from \$5 to \$7 per cental. Practically all of the remaining amount was sold at \$7 to \$8 per cental before it was unloaded from the steamer, subject to inspection and delivery.

Deciduous Fruits.

Orange county Horticultural Commissioner Bishop says the apricot crop promises to be a big one.

Already 99 per cent of the Japanese prune and apricot growers have joined the Prune and Apricot Growers' Association.

An advance in the price of dried peaches, ranging from one-quarter to one-half cent per pound, was announced April 10 by J. F. Niswander, vice-president and general manager of the California Peach Growers' Association, Inc. Eastern trade is buying heavily of new peeled peaches.

State Commissioner of Horticulture G. H. Hecke has warned all

Heap big mileage!

Rubber!

Real rubber—none of that puttyfied, near-rubber look to Savage Tires.

The tough, grips-the-road tread—the resilient, shock-absorbing cushion—the strong, yet flexible, never-crack sidewall—

Every rubber part of Savage Tires is made of live rubber, the finest for the purpose that money can buy.

Stock always fresh. Sold from factory to you through our own distributors—the middleman's profit put into higher quality.

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SAN DIEGO	936 SECOND STREET

SAVAGE GRAFINITE TUBES

The only tubes that have graphite vulcanized into the surface. Prevents deterioration, sticking, friction and heating. Makes soapstone unnecessary. Lengthens the life of the tubes.

THE SAVAGE TIRE

county commissioners to guard against a serious insect pest infecting the Japanese persimmon. The insect is a new species of codling moth. The larvae of the moth feed on the fruit of the persimmon.

Howell D. Melvin, chairman of the finance committee of the Prune and Apricot Growers, has kept in close touch with the operations of the prune and apricot growers and feels sure that the organization will be able to secure its 75 per cent of the entire acreage by May 1. But the \$10,000 pledged must be raised. The money is being used as fast as it is taken in.

Citrus and Semi-Tropical.

The fig growers of Stanislaus county are well organized. Ceres has just added a branch with a membership of 35.

The California Ripe Olive Company intends to operate its Oroville plant on tomatoes throughout the coming summer.

J. A. Langan has sold his nineteen-acre orange grove, known as Victoria Hill, overlooking the Victoria golf links, Riverside, for \$40,000. The purchasers are E. B. Blinn and F. H. Gilchrist of Pasadena.

Congressman Randall has introduced a bill in Congress to amend the Underwood tariff law so as to increase the import duty on lemons and other citrus fruits from one-half to one cent a pound. Our citrus growers fear that after the war they may suffer from competition with cheap Sicilian and Italian lemons under the present half-cent tariff rate.

There are 5,027 acres of almonds in San Luis Obispo county, bearing and non-bearing.

At the last meeting of the Live Oak and Pennington Almond Growers' Association W. E. McMurry was elected president, H. Schidler secretary, and L. A. Ballard delegate.

The first loquats of the season made their appearance on the Los Angeles market last week from Orange county. They were a very nice lot. Fancy sold at 12c per pound and the small at 5c per pound.

News comes from San Bernardino of the successful shipping of two cars of oranges by the San Bernardino County Fruit Exchange to England. The fruit sold at \$6.37 per box and netted \$3.85 per box f. o. b.

Grapes and Berries.

No general manager has yet been selected by the directors of the California Associated Raisin Company.

Alameda county shipped the first chest of ten drawers of strawberries of the new season to San Francisco, April 5. They sold quickly at \$1 per drawer.

The ninth annual California Raisin Day Festival will be celebrated at Fresno April 30. Elaborate preparations are being made to establish a new record for enthusiasm and attendance. Governor William D. Stephens has promised to be present and Mayor Rolph of San Francisco has been invited. Excursions to Fresno are being arranged for from many of the larger cities of the State, and large delegations are expected to take part in the festivities.

The decisive defeat in the State Assembly last week of the Rominger liquor bill, which sought to eliminate the saloon and strong drink in this State, but which essayed to protect our grape-growing interests by permitting the consumption of light wines at the family table and in hotels and restaurants, makes the passage of any form of regulative liquor measure by the present Legislature very doubtful.

The first strawberries of the season were shipped from Florin to Sacramento last week. Their ultimate destination is Portland, Ore.

The Florin district grows the bulk of the berries shipped to the Northwest.

Opening prices for the 1917 crop of layer and cluster raisins, as announced by the directors of the California Associated Raisin Company, are 3/4c higher than the opening prices in 1916, but equal to the 1916 prices as established following the rains last October.

Reports from San Bernardino say that by a unanimous vote the landholders of Victor Valley have determined to form an irrigation district embracing 30,000 acres of land north of the San Bernardino Mountains for a reclamation project costing \$2,000,000.



Kills Prairie Dogs, Ground Squirrels, G. Hogs, Pocket Gophers. Saves alfalfa. Experimental stations approve 1400 tablets, P. P. \$1.25. War-ranted. Mole Tablets, 75c. Ask Druggist or send direct. Booklet Free. Ft. Dodge Chem. Co., Ft. Dodge, Ia

High Cost of Feed Reduced by our System

Write for catalogues, testimonials and information about the

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It is an honest machine and we have a system that will give you results. Write today.

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Friction

Is the Problem Solved in

Hudson Super-Six

This is to give you a clear understanding of what the Super-Six motor means.

This is why it holds unquestioned the leading place in Motordom. Why it won all the worth-while records. Why it stopped the trend toward Eights and Twelves. And why it gave supremacy—perhaps forever—to this new type of a Six.

What Friction Does

Motion causes friction. You know this in farm machinery. It is friction that finally destroys it.

In a high-speed motor the vibration makes friction a big problem. A large part of the power is consumed by it. The motor's endurance is limited.

So the chief problem in motor car engineering has been the reduction of friction.

Sixes Disappointed

The Six-type was adopted to lessen this vibration. The Light Six, with small bore, was made to lessen it further. But the highest attainment in a Light Six proved a disappointment. Motor friction was not reduced as engineers had hoped.

So some leading makers, including the Hudson, started tests with Eights and Twelves. It was hoped that twin motors, set at angles, would solve the friction problem.

Then Came This

That was in 1915. Many engineers thought the Six type was doomed. That the V-types would displace it, as they had in certain cars.

But in that year Hudson engineers invented the Super-Six. In December, 1915, we were granted patents on it.

Tests proved that this invention added 80 per cent to the efficiency of the Six. And it did that solely by reducing friction beyond any other type.

All Records Won

Last year, in a hundred tests, the Super-Six won all the stock-car records which can prove a motor's value. It won the records for speed, for hill-climbing, for quick acceleration and endurance.

It broke the 24-hour endurance record by 32 per cent. It twice broke the transcontinental record in one continuous 7000-mile round trip.

So, in performance and endurance, the Super-Six has no rival. And that is due to the fact that friction is reduced almost to nil.

The Economy Car

This endurance will probably double the life of the Hudson car. The reduction of friction saves immense power waste.

In addition, we this year add to the Hudson a wonderful gasoline saver.

So the Hudson Super-Six means economy to you. It means a daily saving—in the long run, a very big saving.

It means pride in your car. The Super-Six owner knows that he rules the road. And, in beauty and luxury, the car stands out as a master-piece in any crowd.

You can have all this, and still save money, because of the Super-Six economies. These are things to consider well when you buy a car to keep.

If you don't know the nearest Hudson dealer, ask us for his name. Let him show you all the ways in which this master car excels.



Phaeton, 7-passenger, \$1650
Roadster, 2-passenger, 1915
Cabriolet, 3-passenger, 1915

Touring Sedan . . . \$2175
Limousine . . . 2925
(All prices f. o. b. Detroit)

Town Car \$2925
Town Car Landaulet . . 3025
Limousine Landaulet . . 3025

HUDSON MOTOR CAR COMPANY, DETROIT, MICHIGAN

Age and Color Test for Butterfat

To the Editor: Does bluish looking milk indicate low percentage of butter fat? Will a cow increase the percentage of fat in her milk as she gets older?—A. H. G., Reno, Nev.

[Answered by Authorities.]

R. S. Roy, Marin County Cow Testing Association:—Bluishness indicates low butter fat. Milk usually continues to grow richer as the cow advances in age.

I. M. Bomberger, Sec'y Cow Testing Dept. Stanislaus Farm Bureau:—Yellow milk is generally richer than bluish-white milk, because the breeds which on the average yield the highest percentage of butter fat happen to produce yellow butter fat. When the source of milk is not known, the color test is of little value. Three per cent Guernsey milk would usually be more yellow than a Holstein cow's milk testing higher. If you should remove half the skim milk from a Holstein's milk, leaving the balance twice as rich as usual, the color would be affected very slightly. An elephant's milk is said to be bluer than any cow's milk; yet it contains 11 per cent fat. I have found that some heifers give poorer milk the first and second lactation period, but am not sure it was because they were younger.

Allen Thompson, Sec'y Tulare Cow Testing Association:—From my personal experience in testing, I find that color is not a sure sign of high or low fat content. I think that the age of a cow has nothing to do with the fat content of her milk. However, a cow's milk is richer late in her lactation period.

E. A. Kirk, Sec'y Glenn County Farm Bureau:—We believe that bluish color of milk indicates low fat content. One of the leading creamery operators of this county says emphatically, "Yes."

B. Kaehler, Tester Orland Cow Testing Dept.:—Bluish looking milk right after it is drawn from the cow, indicates a low test, but the cow may produce much fat if she gives much milk. Yellowish or highly colored milk does not always indicate high fat percentage. After a cow has reached the age of maximum milk flow, the flow diminishes at an increasing rate, but there is no extraordinary change in the test.

Geo. C. Kreutzer, Kern County Farm Adviser:—Bluish milk indicates that the test is not high, so far as our experience goes; but it may not indicate that it is extremely

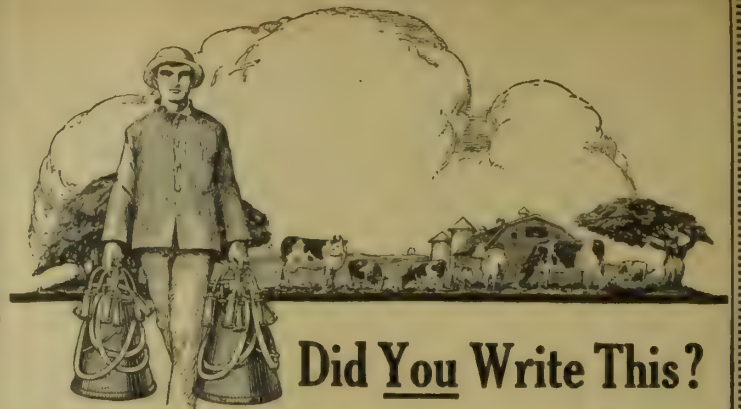
low. It is our opinion that cows produce the greatest amount of butter fat when they are in their prime—namely the third and fourth lactation periods.

W. B. Hopkins, Sec'y Napa-Petaluma Cow Testing Association:—If milk is blue, it would be a good idea to have it tested by Babcock test. Feed has considerable to do with the color of milk. Milk from green clover fed cows will show a richer color than from dry hay or mill-fed cows, although the percentage of fat may be the same. Milk from the average Holstein cow is usually rather blue in color, especially when the cow is on dry feed, but the percentage of fat may be up to the required standard. The Jersey cow will under the same conditions give a richer colored milk and usually it is actually richer in fat, but not as much as the color might indicate. Cows on official test for a number of years in succession have shown a slight variation from year to year; but in my opinion the variation is as likely to be less as more. It seems pretty well established that nature fixes the percentage of fat for each cow and that nothing materially changes this percentage except ill health or insufficient feeding.

S. F. Bonner, Sec'y Gridley Cow Testing Association:—In a large percentage of cases, in my opinion, bluish milk does indicate a scarcity of fat. However, Holstein cows' milk sometimes looks bluish when it tests rather high for the breed. This I think can be attributed to the small fat globules and the tendency of this breed to produce white fat. From our records, it seems that the fat per cent decreases rather slowly as the cow grows older after the third or fourth lactation period. The first and second tests are generally quite a bit higher, if the heifer is in very good condition, than if she freshened poor.

J. D. Williams, Sec'y Bodega-Sonoma Cow Testing Association:—The first man I asked, replied that he knew two men, each of whom had a cow giving blue milk. They tested it to settle an argument. One tested 6 per cent and the other over 5 per cent butter fat. I will pick some cows that give bluish milk and notice their records after our tester's next visit.

Charles Klint, Tester, Tulare Cow Testing Association:—Milk may be bluish from various causes, one be-



Did You Write This?

Here is an Empire advertisement written by Empire users—not a line of it from us—just statements from a few of their letters to us. If you did not help write it, it will pay you to read it; if you did help, you have already been paid in the satisfaction and service you are getting out of your machine.

"With an EMPIRE Milking Machine any boy who can start an engine can do the milking better than any hired man can do it by hand; we would need to keep an extra man if we did not have the machine; I milk 19 cows in 45 minutes, thus saving myself some three or four hours a day; I would quit the dairy business before I would go back to hand milking; cows like



The best recommendations for Empire Milkers that we have seen have come from users. They will interest you. Send for our illustrated pamphlet "What Dairymen Say."

better than they do the average hired man. It pays to install an EMPIRE Milker even for a small herd; it means less time for milking and more time for other things; it does not tire the men nor the cows; gives the biggest results with the smallest expense; labor cost is cut one-third; a boy and a girl do work that used to cost \$120 a month; a fourteen year old boy uses it on our Registered Holsteins—we use it on our highest tests."

Let us tell you ALL the benefits they offer you. Write for Catalog 45—and also ask for information regarding EMPIRE Cream Separators, Gasoline Engines and Electric Plants.

EMPIRE CREAM SEPARATOR COMPANY

Bloomfield, New Jersey

Chicago—Denver—Portland, Ore.—Montreal—Toronto—Winnipeg, Canada

MAMMOTH HOLSTEIN AUCTION

Six miles south of Modesto on the Crows Landing Road, on

225 HEAD APRIL 27, 1917 225 HEAD

On the above date I will sell the complete dairy and dairy equipment of Rufe Moore, consisting of 225 head of Holstein cattle, as follows:

I REGISTERED HOLSTEIN BULL; 85 MILCH COWS; 100 HEAD OF HEIFERS, FROM 1 TO 2 YEARS OLD; 40 HEAD OF HEIFERS, FROM CALVES TO YEARLINGS; 70 HEAD OF HOGS, ALL SIZES; 10 HEAD OF GOOD YOUNG HORSES.

Dairymen, these are an extra choice lot of cattle. Mr. Moore has been in the dairy business for the past eight years and has always bred for the best, having bred to nothing but registered bulls from the L. A. Hall herd of San Jose.

There will be a fine barbecue dinner served with Spanish beans and all the fixings.

Positively not an animal of this herd will be sold before date of sale. There will be no fake bids or by-bidding. Come early and get a few of these choice cattle.

Mr. Moore is past eighty years old and is retiring from the business.

SALE BEGINS PROMPTLY AT 10:30 A. M. TERMS CASH.

COL. CY N. CLARK, Modesto, Auctioneer

RUFÉ MOORE, Owner

FRANK HATCH, Clerk

Do You Want Long Distance Backing?

We have a son of the California State Champion three-year-old for sale. Born October, 1915; Sired by PRINCE ALCARTRA KORNDYKE, whose dam is TILLY ALCARTRA.

The Dam of this young bull is not a fifty-lb. cow, but she has to her credit 21,208 lbs. milk and 860 lbs. butter in one year, which is the largest record ever made in California by a Junior three-year-old.

If you are in the market for a bull, it will pay you to visit our ranch and see what we have to offer—at prices that will surprise you.

J. S. GIBSON CO., Box 97, Williams, Cal.

"THE NAME GIBSON INSURES QUALITY."

D. O. LIVELY STOCK FARM'S FIRST ANNUAL SALE of Registered Hereford Cattle

Will be held under the auspices of the AMERICAN HEREFORD CATTLE BREEDERS ASSOCIATION at Mayfield, California.

Thursday MAY 3, 1917

The offering will be made up of sixty-five head—twenty bulls and forty-five females. A splendid opportunity to start a purebred herd.

WRITE FOR CATALOG

D. O. LIVELY STOCK FARM, 215 Hobart Bldg., San Francisco

ing bacteria of bluish color present in great numbers. Milk may be blue from lack of fat, but I do not believe anybody can make a set rule to that effect. That would be as inconsistent as to say that highly colored milk is always rich in fat. This is not the case. Certain feeds (carrots for instance) would more

or less determine the color of the milk. The highly colored Guernsey milk gets its yellow hue from a color secretion rather than from the fat content. As a rule, a mature cow will have a better average yearly test than she will as a heifer.

Raise Calves from Tubercular Cows

[By State Veterinarian Chas. Keane.]

It is an established fact that only exceptionally are calves affected with tuberculosis at birth, and consequently, if removed from the dams in the first days of life, raised by themselves, and fed food that is free from contamination with tubercle bacilli, such as milk heated to the boiling point, such calves will grow to adult life and remain free from tuberculosis. No matter how badly infected the milking herd is, a new, clean, tuberculosis-free foundation can be built up from the calves with very little trouble or expense if the following simple rules are closely observed:

1. Provide a place on the ranch, or elsewhere, entirely segregated from where the balance of the herd is kept, where calves can be raised. The calves should be removed from the dams within five days after birth and taken to this place.
2. Before milk is fed to such calves, it should be heated to the boiling point.
3. Such calves should be carefully tuberculin tested several times in the first two years of life in order to guard against the possibility of

a calf which was tuberculous at birth remaining in the calf herd long enough to become a spreader.

Not only will the observance of the above rules result in the early establishment of a foundation for a tuberculosis-free herd, but other diseases, such as abortion and allied calf diseases, may be brought under control as well.

The control and eradication of both bovine and swine tuberculosis by feeding milk, which has been sufficiently heated to destroy any tubercle bacilli it might contain, is so simple and in many instances would be so inexpensive that it is hard to understand why dairymen do not take advantage of this method of raising a new healthy foundation, as well as protecting swine from tubercular infection of bovine origin.

The State Veterinarian of California is willing and desirous of discussing this at length with all dairymen of the State who care to give the matter serious consideration; and to such dairymen the State offers its services, such as tuberculin testing, etc., without any expense or condition whatever.

Weedy Silage Made Good Feed

[Written for Pacific Rural Press.]

Instead of morning glory, pig weed, and wild mustard depreciating the value of corn silage, when cut green and put into the silo with corn, it makes the silage more palatable and nutritious.

At least, that was the experience of A. E. Slater of Contra Costa county last year, who planted Indian corn on low land which overflows and on which the corn did not grow very high. The patch was badly infested with the above weeds; and, as the corn was short, the entire field was cut with a mower and pitched onto the wagon.

When feeding was started, it was observed that the cows preferred the mixed silage to straight corn silage

which had been previously fed, and also milked better on it. Mr. Slater also siloed a small patch of barley; but the cows did not relish it so much nor did they produce so heavily on it.

Because of the additional supply provided by the silo Mr. Slater was one of the few dairymen in his district who had feed till grass started in the spring; and this in spite of the fact that he was stocked up unusually heavy.

Select a cow whose flank is arched high at the side of the udder. Stand behind the cow and see that there is no flesh between her hind legs almost up to the roots of the tail.

Paicines Ranch Co.



SAN FRANCISCO,

Offers for sale a select lot of weanling registered bulls, sired by such bulls as FOND LAVENDER, COLLEGE COUNT 3rd, Bessie's Council and WHITEHALL OF ORANGE. For prices and particulars apply to

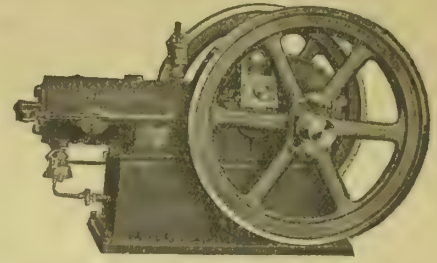
DAVID J. STOLLERY

320 Sharon Bldg.,

CALIFORNIA

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The Best Gas Engine to Buy



WHEN selecting a gas engine, the most important thing is to get a good engine. There is no economy in buying an engine that is going to require frequent repairs and that is likely to balk just at the time you need most to use it.

The wise man considers service, reliability and durability first, and price second. Selected on this basis, the ALPHA is the logical engine to choose, because it is the simplest and most durable in construction and the most reliable in operation. It runs smoothly and powerfully on a minimum consumption of either gasoline or kerosene, and operates on a simple rotary magneto without the use of any batteries.

It is so simple that a woman or a boy can start and operate it, and the sensitive governor, which acts the instant there is the slightest variation in the load, insures steady running without any waste of fuel.

Before you put any money into a gas engine, investigate the ALPHA—and remember that the man who buys the best is never sorry.

Sizes 1½ to 28 H. P. Stationary, Semi-Portable or Portable Style. Hopper or Tank Cooled Cylinder. SEND FOR COMPLETE DESCRIPTIVE CATALOG

De Laval Dairy Supply Co.

SAN FRANCISCO, CAL.

DeLaval Cream Separators, Ideal Green Feed Silos, Acme Feed Cutters, Viking Rotary Pumps. Everything for the Dairy.

CATALOGUE OF ANY OF OUR LINES MAILED ON REQUEST.

INTRODUCING SUPREME GLISTA PIETJE "King of High Testers"



DOES HE LOOK GOOD TO YOU?

4½% FAT

His dam, her full sister, grandam and great-grandam, dams of maternal sire, grandsire, and great grandsire, dams of paternal sire, grandsire and great grandsire have records which average for the 9 head 4.501 per cent fat.

DAM—Glista Eglantine, a two times 32 pound cow, whose full sister twice made over 32 pounds and the last time 36 pounds, daughter of a 31 pound cow and of the great bull Prince Ybma Spofford 6th, the only bull in the world with 75 per cent of his daughters 30 pound cows.

SIRE—Woodcrest Pietje Ormsby, 22 A. R. O. daughters, son of Pauline Ormsby, 827.3 pounds butter in one year, and of Pietje 22d's Woodcrest Lad, best son of Pietje 22d, 31.6 pounds in 7 days, and 566.68 pounds in 6 months, World's Record. He is a brother of the World's Record Holder, Junior 4-year-old.

FOR SALE: Some of his bull calves out of A. R. O. dams. Heifers: Also some finely bred heifers, 300 to pick from. All our mature cows have A. R. O. records.

HENDERSON COMPANY

Sacramento Bank Bldg.,

SACRAMENTO, CAL.

Cattle Feed For Sale

I have both wild feed and hay to be sold together, and fed out by owner. Write me at once for prices, etc.

JAS. McCORD,

Hanford, Cal.

Live Stock and Dairy Notes

Livestock breeders all over the State are invited to send on postal cards, notes regarding their sales, State and County Fair intentions, new stock, etc.

The Dairy.

Gotschall & Macgruder of Ripon state that they expect to officially test four of their registered Holstein heifers during the next month, one of the lot, a daughter of the King of the Pontiacs, being an especially good prospect. They now have 35 head of registered Holsteins.

Theo. D. Tintinger of Park City, Montana, one of the contributors to the D. O. Lively stock farm sale of registered Herefords to be held on May 3, writes that in Corrector Donald he is offering as good a bull as there is in America. Carlos Mischief is an exceptionally good one, as is also Carlos 2nd and Fairfax Model.

A sale of unusual attractiveness will be conducted by the California Breeders' Sales and Pedigree Company for Stalder Bros. on their Rosamond Farm at Riverside, Cal., on Tuesday, May 22. Sixty head of registered Holsteins will be sold, including cows with official records up to over 28 pounds butter in 7 days, a large number of cows and heifers bred to a 34-pound sire, and 15 granddaughters of Prince Gelsche Walker and Aralia De Kol. There will also be sold 17 head of well-bred, high-class Percheron stallions, mares, and colts, and 20 head of grade Holstein and Jersey heifers. Col. Ben A. Rhoades will act as auctioneer.

The catalogue of the registered Hereford cattle sale on the D. O. Lively stock farm at Mayfield on May 3d is coming off the press and is being sent out to those who have requested it.

Beef.

R. M. Dunlap advises us that among his other orders for purebred beef cattle on his present trip East are three Shorthorn herd sires and 10 registered range bulls for the Paicines Co. Mr. David J. Stollery placed the order.

It is said that W. E. Premo, manager of the Porterville Alfalfa Company and Prosperity Company's ranches, has contracted to deliver within the next thirty days 1,000 corral fed beef steers at \$120 per head.

Sheep and Goats.

It is announced that a herd of Toggenburg milch goats will be displayed to the 15,000 visitors expected at the University Farm picnic at Davis on Saturday, April 28.

The lamb crop in the Calipatria section of the Imperial Valley is said to be large. The crop is estimated to be 12,000. A trainload of milk lambs, it is said, will shortly be shipped to Chicago.

Swine and Swine Men.

Elmer Lamb reports sales of pure bred Durocs as follows: Two gilts to M. C. DeFraga of Bolinas; three gilts to C. B. Crawford, Wasco; and a boar to Fraser Brothers of Well-ton, Arizona.

The record hog sale has recently been made by A. B. Humphrey of Escalon. He sold to a Pennsylvania breeder the P. P. I. E. grand champion Berkshire boar, Grand Leader II, with twenty sons and daughters, for \$4500. The boar brought \$3000.

The two-year Duroc boar, Crimson Monarch II, at the head of the De Vilbiss herd of registered Durocs in Stanislaus county, has developed into an outstanding aged boar weighing 800 pounds in his working clothes at two years. He is siring some choice pigs.

The Whitehall Estates Company at Tracy have recently sold twelve Percheron fillies for Hawaiian Island shipment. They now have close to sixty Berkshire brood sows.

Miscellaneous.

On account of the great diversity of the interests of the trustees of the Leland Stanford Jr. University, they have decided to concentrate the resources of the university and thus make administration safer and easier. The sale of the entire herd of purebred registered Holstein cattle on the university ranch at Vina will be the first move under this new policy. More than 300 head will be sold at the ranch on June 5, 6, and 7, under the direction of M. H. Tichenor as sales manager.

The Turlock Irrigation District will stop raising melons and grow foodstuffs if necessary during the period of our war with Germany.

California's development of water power now ranks second to that of New York only.

Dairy Cow Competition Entries Close May 1.

Dairymen and breeders of dairy cattle are reminded that entries in the State Dairy Cow Competition will close on May 1. The object of this competition, which is being conducted by the College of Agriculture of the University of California, is to improve the dairy herds of the State by stimulating the interest in production tests of the cows. Nearly 100 prizes, varying in value from \$300 to \$10 each, are offered for records of production. More than one-half of this amount will be awarded for records of production by grade and common cows only. It is worth the effort of any dairyman who owns good cows to enter these in the competition. Members of cow-testing associations may compete for the prizes offered for yearly herd records without extra expense, and at greatly decreased cost for prizes for individual cows and groups of cows in their herds. The complete list of prizes, with copy of the rules governing the competition, will be found in Circular 153 of the College of Agriculture.

A Promising Sale.

R. M. Dunlap tells us, after a visit to W. M. Carruthers' stock farm at Mayfield, that, having seen the Shorthorns to be sold at the farm May 2, he found an exceptionally useful lot of cattle. Strong young bulls of good, serviceable ages are included in the sale. Everything is in good, strong breeding condition. He also visited James McDonnell, manager at the Ormondale stock farm at Palo Alto, where he reports everything looking fine. Their Golden Goods bull is proving himself a great sire. McDonnell is contributing an extra choice red bull, about 20 months old, to the Carruthers sale. Cattlemen should encourage sales of this sort by being on hand.

BASSETT'S POLAND CHINAS



For many years at widely separated show rings, under many different judges of varying type ideals, my Poland Chinas have been consistent prize-winners. My herd is large and I cull closely. The animals sent out as breeders are the very tops of a large number. I KNOW that my kind of Poland China is a profitable farmer's hog, for I send carloads of them to the packer every year—uniform in size, high in quality, quickly and economically matured and finished.

Young stock, \$30 Up.
M. BASSETT,
Box 1, Hanford, Cal.

GRAND CHAMPION SOW,
P. P. I. E., 1915; Sacramento, 1916.

DIGESTER TANKAGE

Send for Sensible folder on feeding hogs
WESTERN MEAT COMPANY

Animal Food Dept.

704 Townsend St.,

San Francisco

REGISTERED SHORTHORNS

REGISTERED BERK SHIRES

HOPLAND STOCK FARM

Hopland, Cal.

RANGE BULLS, BOARS AND GILTS

San Francisco Office,

1216 Flood Building

Hauser's Digester Tankage

GIVES GREATEST VALUE FOR LEAST MONEY.

IT MAKES THEM FAT.

Hauser Packing Co.

Los Angeles

BULLS = Shorthorns = HEIFERS

REGISTERED AND TUBERCULIN TESTED.

Animals of either sex ready to deliver in car lots or singly.

H. L. & E. H. MURPHY,

Perkins, Cal



"Good to the Last Drop"

Raise Your Calves on Blatchford's Calf Meal and Sell the Milk

More calves have been raised on Blatchford's Calf Meal than on all other milk substitutes combined.

100 lbs. makes 100 gallons of milk substitute, costing only one-third as much as milk.

Prevents scouring and insures the early maturity of sleek, handsome calves.

It is steam-cooked and no trouble to prepare or use.

Write for Pamphlet "How to Raise Calves Cheaply and Successfully with Little or No Milk." At dealers, or Coulson Poultry & Stock Food Co., Inc., Petaluma.

Hog Cholera Serum

I represent one of the greatest Government Inspected Hog Cholera Serum Plants in the whole country.

NO BETTER SERUM MADE.

An ounce of prevention is worth a pound of cure. Find out about this serum today. Price Right.

For particulars address

CARRUTHERS FARMS,
MAYFIELD, CALIF.

DAIRY COWS

REGISTERED BEEF BULLS
PUREBRED HOGS

Large or small lots. Any order executed.

GEO. P. ROBINSON CO.
426 J Street,
Travelers Hotel Building, Sacramento.
LIVESTOCK BROKERS

Nevada county Supervisors have made the necessary provisions for a Farm Bureau and Farm Adviser.

WORLD'S CHAMPION POLAND CHINA HERD



SUPERBA 220623,

Grand Champion P. P. I. E.
Over 100 of his sons and daughters.
All ages. Priced to sell.

ROUGH'S GREENFIELDS

Arlington Station, Riverside, Cal.

AM GOING EAST AGAIN. Place your order with me now for

Shorthorns and Herefords
SINGLE OR CARLOAD LOTS
(Strictly commission basis.)

R. M. DUNLAP

Desk A, 217 Underwood Bldg.,
SAN FRANCISCO.

TAM WORTHS

(The Bacon Hog)

Largest Herd in the State

DUROC-JERSEYS

Mature Stock and Weanlings of both sexes.
Sure to please.

SWINLAND FARM,
W. O. Pearson, Prop. Woodland, Cal.

GLOBE
A-1

BRAND

Cottonseed Meal and Nut Cake

45% Protein and Fat

Every dollar spent for A-1 Cottonseed Meal replaces \$2.00 to \$3.00 worth of grain or other concentrated feeds.

Efficiency and profit demand you use A-1 Cottonseed Meal in your feeding rations.

Feed Dairy Cows, Horses, Poultry, Fatten Cattle and Sheep.

Write us for circular and information. Sold by

GLOBE MILLS, Los Angeles

San Francisco Colton
San Diego El Centro
Portland Salt Lake

GREAT SCOTCH SHORTHORN SALE

46 head of Pedigreed Shorthorn Cattle to be sold at Carruthers Farms, Mayfield, Cal., Wednesday, May 2d, 1917, at 1:00 p. m.

An unusual surprise awaits the Short-horn Breeders of the country at the CARRUTHERS FARMS SHORT-HORN SALE, May Second, 1917. This great consignment represents splendid blending blood lines and mating individuals for the improvement of the breed. For individuality and breeding they will be hard to duplicate.

The breeder in the market for show animals, who recognizes the individual worth of the cattle themselves and who appreciates their future value, and who wants to buy profit producers and backs his judgment in selecting animals that will prove good investments, will find at our 1917 sale precisely what he has set head and heart on getting.

Below will be found the Pedigrees of a few of the Top Animals in the Sale:

ORANGE BLOSSOM GIRL 196283

Cow. Red; Calved March 8, 1912.

DAM	SIRE
Orange Alice 2d V65-746	Missie's Duke 5th 377043.
Lady Orange Blossom.	King Gloster 155470.
Princess Orange Blossom	Canute 106716.
3d.	Golden Chief 75063.
Princess Orange Blossom	Golden Prince 75068.
Orange Blossom of Cedar	Gen. Garfield 41958.
9th.	Duke of Richmond 21525.
Orange Blossom of Cedar	
2d.	
Imp. Orange Blossom 18th.	

ROOKWOOD URY 211776

Cow. Roan; Calved May 27, 1914.

DAM	SIRE
Muriel 2d 28971.	Count Avon 334946.
Muriel.	Bayton Magnet 206699.
Edna.	Royal Marcher 180644.
Ury 25th.	Prime Minister 129038.
Ury 24th.	Burgenmaster's Gloster
Ury 16th.	101998.
Ury 12th.	General Booth 112078.
Imp. Ury Alias Ury 7th.	Sir Charles 89470.
	Statesman 1st 77977.

MAYFLOWER 473085

Cow. Roan; Calved Sept. 27, 1915.

DAM	SIRE
Marion C 3d 51330.	Sultan Mayflower 402251.
Imp. Marion.	Lord Mistletoe 228949.

LADY DOROTHEA 10th 115649 and Calf

Cow. Red; Calved April 26, 1911.

DAM	SIRE
Lady Dorothea 6th 35666.	Superbus 224710.
Trout Creek Beauty.	March Knight 188105.
Dorothea, tracing to Imp.	Klondike of Baltimore
Louisa.	140510.

RUBY QUEEN 211777 and Bull Calf

Cow. Roan; Calved June 4, 1914.

DAM	SIRE
Ruby Bud 2d V67-1070.	Count Avon 334946.
Ruby of Cargill.	Golden Hero 177752.
Imp. Ruby of Brahan.	Royal Victor 164701.

ORANGE MARY 217831 and Calf

Cow. Red; Calved Jan. 11, 1913.

DAM	SIRE
Missie Orange Bud 173597.	Peri Butterfly 228867.
Orange Lassie Gloster.	Missie's Duke 5th 377043.
Canute's Orange Lassie.	King Gloster 155470.
Princess Orange Blossom.	Canute 106716.
Orange Blossom of Cedar	Golden Prince 75068.
9th.	Gen. Garfield 41958.
Orange Blossom of Cedar	Duke of Richmond 21525.
2d.	
Imp. Orange Blossom 18th.	

MAYFIELD VICTORIA

Cow. Red; Calved April 24, 1916.

DAM	SIRE
Victoria 55th 230204.	Fair Knight 329053.
Victoria of Riverside	Missie's Duke 5th 377043.
V48-301.	Saxon Knight 110108.
Monroe Victoria.	Canute 106716.
Glen Victoria 5th.	Prince President 77023.
9th Linwood Victoria.	Thistle Top 83876.
Victoria 52d.	Viscount 18507.
Imp. Victoria 51st.	



Count Glory, Main Herd Bull at Carruthers Farms.



Rookwood Ury, a Great Show Cow.



Mayflower, a Top Senior Yearling Heifer.

RIVERSIDE GRACE FOURTH

Cow. Roan; Calved July 19, 1916.

DAM	SIRE
Wild Grace 3d.	Fair Knight 329053.
Wild Grace 2d.	King Gloster 155470.
Wild Grace.	Wren 128527.
Graceland.	Aclam of Hilltop 117803.
Imp. Generosity	Royal Duke of Pleasant
	Ridge 36889.

LADY FOXGLOVE 4th

Cow. Red; Calved June 10, 1916.

DAM	SIRE
Cherry Grove Foxglove 3d.	Fair Knight 329053.
Foxglove 2d.	Scotch Cup 121056.
Imp. Foxglove.	Imp. Sussex 100999.

MAYFIELD LIL

Cow. Roan; Calved June 20, 1916.

DAM	SIRE
Scotch Lil 8th.	Fair Knight 329053.
Scotch Lil.	Missie's Duke 5th 377043.
Queen Lil.	Scotch Cup 121056.
Edna.	Statesman 105632.
Epaulette.	Double Gloster 85526.
Imp. Evangeline 4th.	Golden Signet 92577.

CREATION 446141

Bull. Red; Calved Aug. 3, 1914.

DAM	SIRE
Rosa Orange Blossom 7th	Fair Knight 32053.
196301.	Missie's Duke 5th 377043.
Orange Blossom of River-	Canute 106716.
dale 5th.	Pr. President 2d 116890.
Orange Blossom of	Duke of Kent 2d 41796.
Meadow Lawn 3d.	Orange Blossom's Breats'e
Orange Blossom of Cedar	42283.
15th.	
Orange Blossom of Cedar	
5th.	
Imp. Orange Blossom 18th.	

GOLDEN MASTER 414755

Bull. Roan; Calved Aug. 26, 1913.

DAM	SIRE
Imp. Duchess 6384.	Ringmaster 307894.
Imp. Dalmeny Duchess	Minotaur of Dalmeny
5th.	243995.

MAYFIELD KNIGHT

Bull. Red; Calved Mar. 1, 1916.

DAM	SIRE
Scotch Lil 9th 230203.	Plainview's Prince 340446.
Scotch Lil V49-859.	Fair Knight 329053.
Queen Lil.	Scotch Cup 121056.
Edna.	Statesman 105632.
Epaulette.	Double Gloster 59926.
Imp. Evangeline 4th.	Golden Signet 92777.

LORD VALENTINE 2d 446156

Bull. Red; Calved Apr. 9, 1914.

DAM	SIRE
Orange Lassie Gloster	Plainview's Prince 340446.
V65-746.	King Gloster 155470.
Canute's Orange Lassie.	Canute 106716.
Princess Orange Blossom.	Golden Prince 75068.
Orange Blossom of Cedar	Gen. Garfield 41958.
9th.	Duke of Richmond 21525.
Orange Blossom of Cedar	
2d.	
Imp. Orange Blossom 18th.	

California is short of females of Short-horn blood—fully 9 out of 10 purebred bulls in the State have been imported from the East. The cows offered in this sale will produce purebred stock of as high quality as any to be found on earth. The bulls to be sold are of the quality and type to head your herd. All of the stock, with fitting, will make show animals.

GET ONE OF THOSE 9 RED BULLS

Plan to attend this Sale at Mayfield, May 2d, at 1 p. m. Write us or wire if you are coming, or for further information. Terms of sale cash, unless other arrangements are made before the sale.

Col. Carey M. Jones, Auctioneer

W. M. Carruthers, Mayfield, Cal.

Cows and Hogs Pay for Tree Growing

While hogs and dairy cows are a practical solution of permanent agriculture by themselves, they may also be used advantageously in a development scheme where fruit is the ultimate hope, and a good example of this may be seen on the New England-California Corporation's ranch in the southern part of San Joaquin county. The development plan of this ranch consists of planting most of the 400 acres bottom land, as well as the 300 acres of high land, to pears, almonds and olives, there being 45 acres in pears and 145 acres in almonds and olives at this time.

To make some profitable use of the land while the orchards are coming into bearing, the upland orchards were leveled and checked for alfalfa before planting, the trees being planted on the levees. Irrigation water was provided from the river which adjoins the ranch on one side by the installation of an electrically driven pump and a reservoir. The alfalfa grown between the young trees in this fashion sup-

plies more than enough hay for the dairy, which will consist of 90 head before the end of the present season.

To supplement the feed supply for the dairy, Indian corn is grown on the lower lands not yet planted to orchards, and this is used for silage making purposes in two silos. In this way the roughage grown is turned off the ranch at a good figure. But the dairy also contributes to the 1,500 head of hogs now on the place, as the skim milk is profitably fed to the brood sows and pigs.

The hogs also utilize wild feed and summer grain crops that are grown on the vacant lower lands, the latter crops being used to properly finish all hogs before they are marketed.

In this manner the dairy cows and hogs, while nowhere near paying the cost of development work, are expected to pay all expenses in bringing the orchards into bearing after land leveling, checking and planting are completed.

Steaming Ground Rice for Hogs

[Written for Pacific Rural Press.]

Rice can be fed more profitably and in larger quantities to hogs if it is steamed or cooked than if fed dry according to the experience of the Tweede Ranch and Land Co. of Glenn county, who first experimented with rice as a hog feed early in 1916 and who finished 100 Berkshires for the market the past winter.

The first experiment was made with eight hogs on a ration of ground rice and rolled barley. The rice was added to the ration gradually to accustom the hogs to it. When the quantity of rice had been increased to one-half of the grain ration the pigs' stomachs seemed to be upset, and they were not doing well.

After this trouble arose, the grain ration was steam cooked in a galvanized iron trough, with steam from a small boiler. In this form the hogs seemed to do better and more rice was added till the ration was two-thirds rice and one-third

barley. The hogs were finally turned off at about nine months, averaging 255 pounds.

Convinced of the value of ground rice, Mr. Tweede last fall decided to finish 100 head on it. As this is written, the lot have been on feed three and a half months, the ration comprising ground rice, barley, and alfalfa meal. To begin with, this lot was also fed on dry grain; but like the first lot, did not do well when rice constituted the major portion of the ration. According to Mr. Tweede they began to do poorly when seven-tenths rice and three-tenths barley was fed.

Because of this additional experience a larger boiler has been secured; and in the future, all rice will be thoroughly steamed before feeding.

Mr. Tweede has used the ground steamed rice with alfalfa meal as the sole ration for his brood sows and states that results so far have been entirely satisfactory.

Modern Draft Horse Barn

[Written for Pacific Rural Press.]

One of the most practical as well as one of the most sightly barns for a draft horse breeder that has ever been built in the State is the one just being completed on the Danville ranch of Easton & Ward, purebred Shire breeders. The barn is square shaped, with a large open court in the center that provides an exercising track, concrete watering troughs, hitching racks, and two plots of lawns ornamented with evergreen trees and shrubbery.

Twenty-two box stalls all opening into this court constitute the capacity of the barn, together with office and harness room. Above the stalls are hay mow and granary, chutes from the hay mow leading into each stall to simplify feeding. All hay

is put into the mow from the back end of the barn as well as straw and grain. Space is also provided for chopped hay, and rooms have been fitted up for the attendants, overlooking the entire court.

Six paddocks will be provided adjacent to the barn on the back and end of the building to provide exercising space for the horses while held for sale and being prepared for shows.

Reduce the number of fruit pits on your orchard before they start to harden.

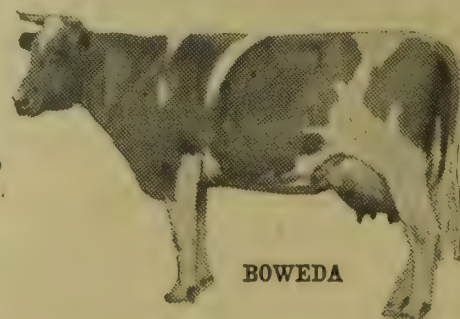
Mysterious cutting off of leaves on trees and vines is usually the night work of cut worms. Poisoned bran gets them.

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40 A. R. O. COWS ARE TO BE SOLD
and many others that will make as good or better records.

Also in the herd are 40 daughters of King of the Pontiacs 14th, 84332, that great show bull and best individual son of King of the Pontiacs; 20 heifer calves of Segis DeKol Pontiac Burke, 140339, all great prospects; 40 daughters of Dutchland Colantha Sir Ormsby, 55055, a great son of Colantha Johanna Lad, all making good records; Genesee Lad, 90356, and 45 very promising daughters.

The herd has been tuberculin tested recently, and is also free from abortion.

This sale offers unequalled opportunities to the advanced breeder, the beginner, the dairyman.

Special Trains between Chico and Vina each day of Sale.

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Information

M. H. Tichenor
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Our Durocs are of the big type, with big bone, well-arched backs and carrying good hams.

We have a few head of service boars, now ready for service, solid red in color and out of prize-winning animals.

Every Animal Positively Guaranteed

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Shorthorn Bulls for Sale, sired by such noted bulls as King Lancaster, Knights Perfection, Greenwood Knight and Greenwood King. Nearly all offsprings of the famous King Edward.

These Bulls are conceded to be the best offering ever made from the Hillcrest Stock Farm.

For Particulars Apply

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Proprietor
Davis, California

VETERINARY QUERIES

[Answered by Dr. H. B. Witheringham, Petaluma, Cal.]

[Subscribers wishing an immediate reply should send money order for \$1.00. No charge for questions answered through this department. Name and address of subscriber must accompany each query.]

Peculiar Horse Disease.

To the Editor: A neighbor lost two horses, one five years old, first symptoms stiffness of all muscles, very nervous, chilly, no fever, bowels and kidneys regular. Third day commenced swelling on each side of the neck and over the windpipe, not clear down to breast nor clear up to the jaws. Swelling very hard. Strong liniments and blisters took no effect. On fourth and fifth days the horse seemed enough better to turn out to grass. In grazing, would turn his head uphill. After the sixth day, seemed very sore over the lungs, but that left in a couple of days. All this time his appetite was good, would lie down regularly and get up easily. On the sixth day the swelling broke inwardly and discharged very freely from the mouth and nose, a white foamy substance, not of matterly color at anytime. After this swelling broke, the horse could not swallow either food or water. He would chew feed and try to swallow; but it would put him in terrible agony and he would cough the feed and water out of the mouth and nose. He died the ninth day very weak, but didn't seem to choke or swell or stiffen up, nor to be in much pain. The second horse would stand with hind feet placed far forward, head high and set back, very chilly, legs and ears warm, no fever, good appetite, bowels and kidneys regular, neck and whole body stiff as if slightly paralyzed, could walk uphill very well, but not down hill. In five or six days he swelled on both sides of the neck with soreness. No swelling elsewhere. Stiffer and less use of legs every day. About eighth day would stand with right front leg extended under body and would drag the toe when walking. Not lame, but losing use of the leg. Then began to stand with hind feet forward. In 10 or 12 days would drag both front feet and the right hind foot. Could lie down and get up alright until the fourteenth day, then couldn't lie down and could scarcely walk. Could turn to the left easier than to the right all the time. Appetite, bowels and kidneys always good. Temperature normal. Never lost flesh. Swelling on neck very sore. Never coughed. Mouth and nose clear. Eyes bright. Very nervous. Fell dead on the nineteenth day. Mouth and tongue very blue as soon as he fell, and neck and head swelled immediately and he stiffened at once.—C. T., Union.

As near as can be determined from the description given these animals were suffering from a Streptothrix infection. In the writer's hands an autogenous vaccine in conjunction with stimulants and free opening of the abscess has given fair results.

Horse's Eyes Water.

To the Editor: A healthy three-year horse got watery eyes in hot weather, but they were all right

when cool weather came. Last summer I was told he had "wolf teeth." A veterinarian pulled them, yet the horse's eyes have been watering slightly and forming a little dark scab all winter.—P. A., Lodi.

The trouble is due to an infection of the eyes. Place a few drops of a 25 per cent solution of Argyrol in the eyes twice daily.

Colt Sweeneyed.

To the Editor: A three-year colt was sweeneyed two months ago. Has not been worked since. Shoulder shrinking away. Can it be cured? How long will it take?—H. H., Linden.

An injection hypodermically of rectified oil of turpentine, consisting of a few drops, in eight or ten places over the shrunken area works wonders. The animal is to be kept at work while under treatment, which may have to be repeated two or three times.

Irregular Heat Periods.

To the Editor: A 2½-year heifer dropped her calf in October. The first three months she came in heat at the proper time. Delayed breeding owing to her age. About eight weeks ago let bull serve her and now she comes in heat every week. Has some discharge. Seems all right every other way.—G. W., Willows.

This heifer has cystic ovaries. Call in your veterinarian, and he will break down these cysts by manipulating the ovaries.

Loose Lump in Teat.

To the Editor: A good cow has a small lump in one teat. It moves up and down when milking. Milk from this teat is somewhat stringy; but after about two weeks is all right.—G. U., Santa Rosa.

This is a teat tumor and will eventually render that quarter useless. It is possible at times to remove these surgically in particular cases.

Lice on Mules.

I have a band of horses and mules and they all have lice. Is there any thing I could feed them to kill the lice? Saw in one of your issues to mix coal oil, soap and water and wash them with that. My mules are wild and not halter broke. That would be a pretty hard undertaking as they are pretty light on their hind feet at times.—J. S., San Lucas.

Run them into a chute such as we have described recently for beef cattle; and apply the wash. You can't feed them anything to kill the lice without killing the animals also.



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LIKE everything else in the Hercules line, the Halters are made to last, to give good service, to wear

well, and always to be relied upon in an emergency.

Those Jumbo Rivets have a quality all their own. The heavy halter is oak-tanned in California, the source of the best harness leather.

They are so strong we could almost afford to offer to pay for a new horse, in the event that one of these Halters broke; but we will give you a new halter if one breaks under ordinary usage.

Ask your dealer for Hercules Halters.

When a dealer offers you a Hercules Harness, Horse Collar, or Saddle, he is offering you **THE BEST THERE IS**

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Let your hogs rid themselves of these blood sucking pests and keep free from cholera.

Churns

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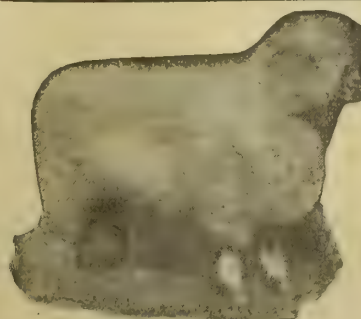
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WINNINGS P. P. I. E., 1915.

Aged Ram, First and Second. Yearling Ram, First. Ram Lamb, First, Second, and Third. Champion Ram. Yearling Ewe, Second. Ewe Lamb, Second and Third. Get of Sire, First. Pen of three Lambs, bred by Exhibitor, First and Fourth. Pen of Four Rams, bred by Exhibitor, First and Fourth. Flock, any age, Second. Flock, any age, bred by Exhibitor, Second. Flock, one year old, First. Flock, one year old, bred by Exhibitor, First. Flock under one year, First. Flock under one year, bred by Exhibitor, First. Produce of Ewe, First, Second and Third. Premier Championship for Breeder. Premier Championship for Exhibitor. A total, including American Shropshire Specials, of 15 Firsts, 9 Seconds, and 6 Championships. Purebred Registered Rams and Ewes. Individuals or Carload Lots. BISHOP BROS., Agents. SAN RAMON, Contra Costa County, California.



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For large litters of husky, hustling pigs; for rapid gains on inexpensive feeds; and for easy fattening. They bring top prices on all the big markets because of uniformity, high quality meat and least shrinkage. Send today for free booklet "Berkshire Hogs." It points the way to more hog money.

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The Quality Holstein Sale

The Spring Consignment Sale scheduled to be held at University Farm, Davis, during Farmers' Week, has been transferred to

State Fair Grounds, Sacramento, May 31

This sale will contain some of the greatest breeding animals ever offered to buyers of registered Holstein-Friesians in any sales ring. Detailed announcements will appear in later issues.

Write for catalog now.

California Breeders' Sales and Pedigree Company
C. L. Hughes, Sales Manager. Sacramento, Cal.

Fast Grading of Hogs Into Six Sizes

[Written for Pacific Rural Press.]

It is usually a series of circumstances rather than a single thing that allows one to "top the hog market"; and while breeding and feeding may be logically called the most important, proper grading of hogs before fattening and again before shipping has a good deal to do with getting the top price.

On the Stanford University's ranch at Durham, Butte county, Superintendent J. F. Van Loben Sells attaches so much importance to this feature of the ranch's hog operations that he has constructed a grading chute which permits grad-

ing into six different sizes as fast as the hogs can be driven into the chute.

The entrance to this chute is V shaped with a gate at both ends so that the hogs may be held in the temporary corral, both gates swinging toward the center, which permits crowding the hogs into the chute.

The chute proper is two feet wide and is located with large feed lots on each side. Small gates just large enough to admit a good sized hog open off from the chute into these lots. These gates swing toward the lot and away from the chute. At the same point in the chute another small gate is located which permits entire closing of the chute at that place.

As the hogs are driven through the chute they are segregated by the use of the gates into different lots of equal size so that a mixed lot may be brought in from the fields and quickly and easily graded. According to Managing Foreman F. C. Franklin, a little practice makes it easy for an ordinary person to separate with very close precision; and this work makes for better prices, as it makes a flat price per pound for the buyer a safe proposition.

SATISFACTORY BARN FLOOR.

[Written for Pacific Rural Press.]

The floor construction of modern dairy barns is a feature that demands more than ordinary consideration because of the difficulty in remodeling them.

On the Stephens Dairy, near Mission San Jose, a barn having a capacity of four strings was erected two years ago; and has since proved entirely practicable in everyday use.

A cross section view of this floor would show a 10-foot feeding alley down the center of the barn, with a 21-inch manger on either side. The distance between manger and gutter is five feet, large cows being used. The gutter is 16 inches wide, being six inches high on the front and four inches high on the back, with a six-foot passageway between it and the outside wall.

Both the stall floor and the back passageway drain to the gutter; and the entire floor and gutter slopes toward the end of the barn one foot to the hundred. This allows good drainage for liquid manure and washings and with a 16-inch gutter, a wide broom can be used to good advantage in sweeping down the solids. Steel stanchions, feed and manure carriers complete the sanitary and convenient features of the barn, the concrete silos and feed barn being located at one end of the building so that all feed is stored outside of the milking quarters.

Always keep two rings in the bull's nose so that when one breaks he can be safely handled until the broken one can be replaced. Fasten a strong, light chain to the ring and make it long enough so that the other end will drag on the ground two feet behind his fore feet. This keeps him under constant discipline.



15 Granddaughters of Prince Gelsche Walker, Sire of the new 34-pound Junior four-year-old California champion! 20 Well-Bred Heifers and A. R. O. Cows in Calf to a 34-pound grandson of King of the Pontiacs!

These are a few of the good ones that we will sell for

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TUESDAY, May 22, 1917

when a total offering will consist of

60 Registered Holsteins

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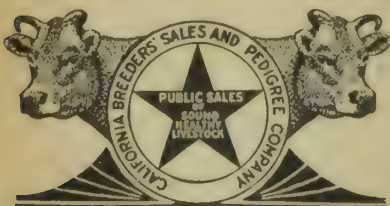
60 Grade Holstein and Jersey Heifers.

This is one of the best offerings ever made in southern California, and they will be sold absolutely without reserve or limit.

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SACRAMENTO, CALIFORNIA
Auctioneer—Col. Ben A. Rhoades



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You can buy the cows and heifers to help solve such problems in the

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60—HEAD—60

Thursday, May 17, 1917, Tulare, Calif. On the above date, at Mr. C. G. McFarland's new farm, 12 miles from Tulare, we will sell his entire herd of registered Jerseys at public auction, absolutely without reserve or limit, including

16 REGISTER OF MERIT COWS of unusually good breeding and pleasing type, 13 of which, with records already finished,

AVERAGE 516 POUNDS, 85 PER CENT BUTTER.

And this average includes some 2-year-olds and several under mature age. The offering will also include a number of choice young

BULLS OUT OF R. M. DAMS, just the sort that should be used in a high-class dairy herd, and some are entitled to places in high-class registered breeding herds.

Everything over six months old tuberculin tested.

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POLAND CHINAS—Three extra fine boars, one large and two medium type. W. Bernstein, Hanford, Cal.

REGISTERED POLAND-CHINAS and Duroc Jerseys. Cholera immune for life. T. H. Beckman, Lodi, Cal.

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CRAWFORD'S CALIFORNIA CHINAS are prolific and profitable. Can fill your order for weanlings, either sex, for \$15.00 each. J. A. Crawshaw, Hanford, Cal.

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BOARS of serviceable age all sold. We have a few choice gilts bred to John Henry; an exceedingly choice boar. Also have a fine lot of Fall pigs, either sex. Bar N Ranch, E. A. Noves & Son, Props., Sutter, Calif.

LARGE NUMBER of excellent young boars ready for immediate service. Weanlings of either sex. Sired by Joker, first prize boar at Wisconsin State Fair, 1915. Sows and gilts, sired by Iowa Wonder and bred to Joker and Sunnydale's Chief. For prices and further information write Geo. A. Smith, Corcoran, Cal.

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JUNIOR CHAMPION BOAR for sale. Branton's Longfellow, 166579, of big bone, short neck, great length and depth. Oak Grove Dairy Farm, Woodland, Cal.

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BERKSHIRES—I have one of the best herds on the Pacific Coast, including Grand Champion Sow, Reserve Grand Champion Boar under one year, Third Aged Boar, etc. Frank A. Brush, Santa Rosa, Cal.

REGISTERED BERKSHIRES—Progeny of Improver B. Young stock now ready for sale. Start your herd with breed and strain of established reputation for California conditions. Geo. G. Meckfessel, Berlin, Cal.

CHOLERA IMMUNE BERKSHIRES—A few choice gilts, large enough to breed for Fall litters. Also Fall boars at attractive prices. Several have strong line of best imported blood. Young pigs \$15 and \$20 each. All registered. Quality stock at utility prices. W. H. Waugh, Riverside, Cal.

GRAPEWOOD FARM BERKSHIRES—World's Fair Grand Champion Grand Leader. 2nd heads our herd, not only himself a champion, but the sire of Champions. At the 1916 California State Fair his daughters won first in all of the senior sow classes, including the Grand Champion Sow. At the 1916 Oregon State Fair a Grand Leader sow was Junior Champion. We are offering a number of choice boars of exceptional breeding and are also looking for orders for Fall pigs. A. E. Humphrey, Escalon, San Joaquin Co., Cal.

Duroc-Jerseys.

REGISTERED DUROCS—Either sex at all times. W. P. Harvey, Gridley, Cal.

BIG TYPE DUROCS—Quick maturing. Easy keeping. Frederick M. Johnson, Napa, Cal.

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DUROC-JERSEY REGISTERED HOGS—River Bend Farm, St. Helena, Cal.

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WINTON DUROC-JERSEY FARM, Winton, Cal.—High-class purebred hogs, both sexes, any age.

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CRILEY'S BALANCED HOG FEED—the cheapest feed to fatten hogs. Write Geo. E. Criley Co., Inc., Live Stock Supplies, 631-637 Brannan St., San Francisco.

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LARGE YORKSHIRES—The ideal hog for the progressive farmer. Young stock for sale. A. L. Tubbs Co., Calistoga, Cal.

Chester Whites.

BILLIKEN HERD OF CHESTER WHITES—The type that is ready for the market in less than seven months. The easy feeders and big producers; sold out of bred gilts and service boars; October farrows to offer as follows: 8 boar pigs and 18 sow pigs; these are from 6 different litters and 3 different sires. Order now before these are all sold. Description and prices on application. C. B. Cunningham, Mills, Cal.

REGISTERED IMPROVED CHESTER Whites—Grizzly Bear Ranch, East Auburn, Cal.

Essex.

LITTLE BLACK ESSEX—New crop nearly ripe. A few fine youngsters left. L. W. Millsp, Yolo, Cal.

Hampshires.

BELLA VISTA HAMPSHIRE SWINE—From prize-winning stock. J. W. Henderson, First National, Berkeley.

Tamworths.

BEAVER LODGE TAMWORTHES—Service boars. Write for prices and pedigrees. A. G. Lane, Amsterdam, Cal.

DAIRY CATTLE.

Holsteins.

A. E. O. HERD OF HOLSTEINS—Alex. Whaley, Tulare, Calif.

BREEDER OF HOLSTEIN-FRIESIAN CATTLE—Dr. Ben Stetson, Napa, Cal.

REGISTERED HOLSTEIN CATTLE—E. E. Freeman, Route B, Modesto, Cal.

REGISTERED HOLSTEIN BULLS for sale. Sunnybrook Ranch, Willits, Cal.

REGISTERED HOLSTEIN-FRIESIAN CATTLE—J. M. Campbell, Escalon, Cal.

REGISTERED HOLSTEIN BULLS for sale. C. L. Morse, Route B, Modesto, Cal.

CHOICE HOLSTEIN bulls for sale. No females. Millbrae Dairy, Millbrae, Cal.

GOTSHALL & MAGRUDER—Breeders of Registered Holstein-Friesians. Ripon, Cal.

BREEDERS OF REGISTERED HOLSTEIN CATTLE—McAlister & Sons, Chino, Cal.

REGISTERED HOLSTEIN BULLS, \$50 to \$150. Glorieta Stock Farm, Woodland, Cal.

CREAMCUP HERD—Registered Holsteins; Pontiac bull calves. M. Holdridge, Modesto, Cal.

REGISTERED HOLSTEINS—A. W. Morris & Son, Corp., Importers and Breeders, Woodland, Cal.

BREEDERS OF REGISTERED HOLSTEIN cattle and Berkshire pigs. Whittier State School, Whittier, Cal.

THE HENDERSON CO.—Breeders and importers. Registered Holsteins. Sacramento Bank Bldg., Sacramento.

TWO SERVICEABLE SONS of Colantha Sir Pontiac Aagie for sale. Moorland Farm, E. W. Abbott, Milpitas, Cal.

FOR SALE—Two registered Holstein cows with A. R. O. records. Write for particulars. J. W. Benoit, Route C, Modesto, Cal.

PACKWOOD FARM HOLSTEINS—Fine young bulls of serviceable age out of tested A. R. O. cows. W. F. Mitchell, Visalia.

J. H. HARLAN, WOODLAND, CAL.—Breeder of Registered Holsteins. Sold out at present. Watch for announcement on King Valdesa.

THE MCCLLOUD RIVER LUMBER CO., McCloud, Cal.—High-class thoroughbred Holstein bulls for sale. Write for prices and pedigrees.

TULARE GUERNSEY AND HOLSTEIN Farm is offering young bulls of both breeds. Excellent breeding. Prices reasonable. W. J. Higdon, Tulare, Cal.

FOR SALE—Carload or less, full-blood, unregistered, tuberculin-tested cows and heifers. 3-year-old Holstein bull from registered sire and dam. All in fine condition. R. S. Burrough, Cloverdale, Cal.

FOR SALE—Two registered cows, one with record 24.58. Sister to other one made 23.10 as a two-year-old. Both bred to a 30-lb. sire. Geo. Koumas, Modesto.

REGISTERED HOLSTEINS—Grandsons of King Segis and of world's record cow Cream-elle Vale. Will build up the production and value of your herd. Write or call and see them. F. H. Stenzel, San Lorenzo, Cal.

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Jerseys.

JERSEY BULLS from Register of Merit cows. C. D. Hayworth, Modesto, Cal.

REGISTERED JERSEYS—Young bulls and bull calves. T. B. Purvine, Petaluma, Cal.

YOUNG REGISTERED JERSEY BULL Calves at reasonable prices. O. J. Ames, Oakdale.

JERSEY BULLS—Sons of Gertie's Lad and Gertie's Son's Victor. A. A. Jenkins, Tulare, Cal.

BREEDER OF REGISTERED JERSEY Cattle—Duroc Swine. Young stock for sale. W. J. Hackett, Ceres, Cal.

CHOICE REGISTERED JERSEY FEMALES—Fresh and Springers. Breeding and individuality the very best. McLouth, Orland, Cal.

REGISTERED GUERNSEY BULL—No. 24342 from A. R. and imported stock. Write for prices and pedigree. A. G. Lane, Amsterdam, Cal.

JERSEY BULLS AND BULL CALVES—Sons and grandsons of 2 and 3-lbs. cows. None better. Cheap for quality. N. H. Locke, Lockeford, Cal.

VENADERA HERD OF JERSEYS offers calves from Register of Merit Cows with official yearly records. Write for list of bulls. Guy H. Miller, Route 1, Modesto, Cal.

Guernseys.

BELLA VISTA GUERNSEYS—Males from A. R. dams, \$100 up. J. W. Henderson, 1st National, Berkeley.

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Ayrshires.

AYRSHIRES—Registered; all ages. E. B. McFarland, 412 Claus Spreckels Bldg., San Francisco.

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BEEF CATTLE.

SHORTHORNS—Fair Oaks Ranch, Willits, Cal.

SHORTHORNS—Carruthers Farms, Mayfield, Cal.

GEORGE WATTS—Breeder registered Herefords. Bishop, Cal.

SIMON NEWMAN CO., Breeders of Registered Herefords, Newman, Cal.

REGISTERED HEREFORDS—H. H. Gable, Diamond G Ranch, Esparto, Cal.

HOPLAND STOCK FARM—Registered Shorthorns. Prices on application. Hopland, Cal.

INNISFAIR DAIRY SHORTHORNS—Registered young bulls for sale. Alexander & Kellogg, Suisun, Cal.

REGISTERED AND UNREGISTERED—Shorthorn bulls for sale. Paicines Ranch Co., 320 Sharon Bldg., San Francisco.

BREEDERS OF REGISTERED SHORTHORNS—Milk strain. Choice young stock for sale. John Lynch Ranch, Box 321, Petaluma.

REGISTERED YEARLING SHORTHORN Bulls—Heavy-boned, thick-matted Scotch and Scotch-topped breeding. Ormondale Co., Route 1, Redwood City, Cal.

D. O. LIVELY STOCK FARM, INC., 216 Hobart Bldg., San Francisco, breeders of Hereford cattle. A few choice heifers for sale. We buy and sell livestock on commission. Farm at Mayfield, Cal.

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FOR SALE—10,000 Shropshire-Merino crossbred yearling ewes in lots to suit. Also 200 purebred Shropshire yearling rams. Address Miller & Lux, Incorporated, San Francisco, Cal.

F. A. MECHAM ESTATE, Petaluma, Cal.—Breeders and Importers of Shropshire, Rambouillet and American Merinos, both sexes. Also Red Faced cattle. Take electric car at Petaluma or Santa Rosa for Live Oak Ranch.

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REGISTERED SHIRES—Black Hawk Stock Farm, Importers and Breeders. Easton & Ward, Proprietors, Burlingame, Cal.

MISCELLANEOUS.

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Raising Poultry for Profit

RAISING CHICKS IN HEN HOUSES.

[By Susan Swaysgood, Pomona, Cal.]

A lady asked me the other day if she could not raise her little chicks in one part of her hen house. I told her "No." She would not raise enough to cause her any heavy feed bills. But, she is going to try. It simply can't be done, because the older fowls are just as poisonous to baby chicks as is something entirely foreign to them. It has been tried time and again. The fact that one lot of chicks will not grow and thrive on the same piece of land that has had one brood raised on it that season seems to show that ground over which old hens have run will not raise baby chicks. Unless the runs are dug up and planted to something green, you cannot expect to raise a succession of broods on the same runs. Put your chicks as far away from the hen houses as possible and give them a fair chance, they will pay you back in dollars and cents, also in satisfaction, for we all like to have good results from our labors.

Turkeys may still be set.—This has been a late spring, very few turkeys have been hatched and everybody complains that their hens will not sit; but according to the season we can run these things a little later than usual. I would not be a bit afraid to keep right on hatching, for we have not begun to have any summer weather yet. But this month will see hens getting broody and for two whole months every egg can be set.

HATCH ALL YOU CAN.

[Written for Pacific Rural Press by Mrs. Susan Swaysgood, Pomona.]

This year all kinds of live poultry are scarce, so this is the time to hatch every egg you can, especially of the large breeds. They make a good family meal; and a restaurant or hotel man can serve quite a few patrons a dinner from a good big Rock or Orpington. Hatch the brown eggs at this season in preference to the white and make money out of your poultry. Those who think feed is too high, and will not venture to hatch, will miss it; because if they have a little patch of land they can easily provide a good portion of the feed that will serve to raise the chicks. And the man or woman who can help to increase the food of the country is doing more for it, really than if they were in the front ranks of the fighters. I went out of business, as I supposed, but in the face of this shortage I feel it would be criminal not to raise a few chickens; and the other day I started an incubator. Just could not help it. All preaching and no practicing, does not agree with me.

QUESTIONS ANSWERED.

Poultry Feed Weight.—Sometimes we are asked about how much a measure of feed will weigh. These are the average weights: 1 quart of middlings weighs 1 pound; 1 quart shorts, 1 pound; 1 quart bran, ¾ pound; 1 quart alfalfa meal, ¾ pound; 1 quart rolled barley, 1 ½

pounds; 1 quart wheat, 2 pounds; 1 quart corn, 2 pounds; 1 quart crushed oyster shell, 3 pounds; 1 quart beef scraps, 1 ¾ pounds; 1 quart unshelled oats, 1 pound; 1 quart kaffir corn, 1 ¾ pounds.

Why Do Hens Set.—What causes both Leghorn and Orpington hens to want to set frequently? What do they require in their food to prevent it?—Mrs. I. R. A., Lincoln.

[Answered by Susan Swaysgood.]

It is not caused so much by feed as by heredity. Leghorns do not usually set until fall or late summer; but with Orpingtons, it is very natural to sit now. All you can do is to give less starchy foods (such as corn meal, middlings, etc.) and feed more green feed and animal food such as beef scrap. Green feed is cooling and does not let the blood get heated up.

Turkeys' Crops Sour.—I raised nine turkey hens last year. A month ago one of them sickened and wouldn't eat. I gave her a corn meal-milk mash and a little oil. When she died, ten days later, the contents of her crop were very sour, mostly water and a little grain. Two more hens are sickening. I feed Egyptian corn, keep them in a large pen partly covered with trees, and let them out part of each day. They have clean drinking water. Droppings of the sick turkey were very green and thin. Tell me also how much corn these turkeys should have three times a day.—Mrs. J. R., Healdsburg.

[Answered by Susan Swaysgood.]

Give each one a pill or two made of 2 parts flowers of sulphur, 2 parts cayenne pepper and 1 part flour. Mix into a dough with a little water and feed each turkey one a day until they recover. Feed no corn but just a little mash and a little wheat or soaked oats.

United States had a foreign trade in 1916 of \$7,873,000,000, which is greater than that of Great Britain.

The Alameda County Farm Bureau will hold its annual meeting May 5 at the Water Tower, Sunol.

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Poultry Breeders' Directory.

Rates in this directory, 3c per word each issue; or if carried weekly for one year, 2 ½ c per word.

RHODE ISLAND REDS—Eggs, \$1.00 for 15. P. M. Cox, Sonoma, Cal.

WHITE PLYMOUTH ROCKS—Hatching eggs from splendid layers. Mrs. J. B. Tupper, Route A, Ceres, Cal.

HATCHED CHICKS from Barred Rocks, R. I. Reds, White Leghorns. Good stock. Send for circular. G. L. Hawley, Madera, Cal.

BLACK MINORCAS—Largest egg; whitest flesh. Eggs, \$1.00 per 13; \$5.50 per 100. Edward A. Hall, R. F. D. 1, Watsonville, Cal.

WHITE WYANDOTTES—Blue-ribbon winners. Eggs, \$2 to \$5. Chicks, pullets, cockerels. R. W. Stawetski, Route 2, San Jose, Cal.

CHICKENS, DUCKS, GEES, GUINEAS, Pea Fowl, Pigeons, Wm. A. French, 545 W. Park St., Stockton, Cal.

INCUBATORS—For Essex Model Incubators at factory prices, write Geo. H. Croley Co., Inc., Poultry Supplies, 631-637 Brannan St., San Francisco.

MODEL POULTRY FARM—White Leghorn specialists. Our thirteenth year. Baby Chix and Hatching Eggs for sale. W. C. Smith, Prop., Corning, Cal.

SILVER AND GOLDEN PHEASANTS—\$5 pair; eggs, \$2.50 for twelve. Nine Silver Campine pullets, one cockerel. Mrs. R. S. Spaulding, Woodland, Cal.

EASTMAN'S BRED-TO-LAY Barred Plymouth Rocks—chicks, eggs, cockerels. We homogenize and trapnest. Fairmead Poultry Farm, Fairmead, California. Box P.

BABY CHICKS—From select free-range White Leghorn stock. Place orders early. Prices on application. Western Hatchery, Petaluma, Cal. W. S. Waldorf, Prop.

HICKS JUBILEE HATCHERY, Petaluma, Cal. White Leghorn and Black Minorca chicks and hatching eggs. Circular "How to Raise and Feed Chicks" free.

BABY CHICKS from S. C. White Leghorns from trapnested hens with records from 192 to 297 eggs. Also S. C. Black Minorca chicks and eggs. J. W. Benoit, Route C, Modesto, Cal.

S. C. RHODE ISLAND REDS—220-egg record in 12 months. Hatching eggs, Chicks, Stock. Also Rose Comb Reds. Mating list ready. Wm. Larm, 3915 39th Ave., Fruitvale, Cal.

HOGANIZED AND TESTED—220-egg type White Orpingtons and Buttercups. Hatching eggs, chicks and cockerels for sale. Reasonable prices. For particulars, write M. Woodhams, San Mateo, Cal.

A MONEY-MAKING BUSINESS of 1500 laying hens, 4000 baby chicks. Best home market in the State. I cleared \$2000 from the place last year. You can do the same. See M. Ginnbintini, Inverness, Cal.

BABY CHICKS—We hatch from our own stock of 10,000 vigorous, healthy S. C. White Leghorn hens of heavy laying strain. Write for price list and further particulars. George Brothers, Petaluma, California.

BABY CHICKS—HATCHING EGGS—White, Buff, Brown Leghorns, R. I. Reds, Barred Rocks. Sturdy chicks from well-mated fowls. Prompt, efficient service. Write for circular. Campbell Poultry Ranch, Campbell, Cal.

PRIZE WINNERS—Houdans, Barred Rocks, buff, black, white Orpingtons; black Langshans; R. I. Reds; Silver Laced Wyandottes. Settings, chicks, cockerels. Trio Indian Runner Ducks—laying—\$5. C. L. McGee, 1635 Julia St., Berkeley.

MAY AND JUNE CHICKS—Will lay this fall if from our early maturing strain. Our Leghorns and Reds begin laying at 4 ½ to 5 months. Leghorns, \$10 per hundred; Reds, \$12.50 per hundred. Brooke Farm (Rancho del Paso), 807 J St., Sacramento, Cal.

WHITE LEGHORN AND BROWN LEGHORN day-old chicks from healthy, vigorous breeders. Per 100, March, \$10.00; April and May, \$9.00. Reduction in larger lots. "Chicks well hatched are half raised." San Jose Hatchery, 373 Meridian Road, San Jose, Cal.

BABY CHICKS—From large, healthy, vigorous, heavy laying thoroughbred Single-Comb White Leghorns. \$10 per 100; \$2 per 100 when order is booked, and balance 5 days before delivery. I pay the express to your nearest express office. H. A. Schlotthauer, Exeter, Cal.

200-290 EGG—Early maturing, winter-laying Leghorns; white, barred Rocks; Reds; Anconas; white, buff Wyandottes; buff Orpingtons. During May, eggs third off; chicks fifth. Breeders priced so guaranteed pay for themselves this season. \$3-\$10 profit every hen. M. Beeson, Pasadena, Cal.

"FINEST HATCHERY IN THE WORLD"—Baby Chicks, White Leghorns, and Rhode Island Reds, settings, 100's, 1000's, hatched right in our \$60,000 brick and concrete hatchery from our quality heavy layers. Reasonable prices. Stock, Hatching Eggs. Pebbleside Poultry Farm and Hatchery, Sunnyvale, California.

BARRED PLYMOUTH ROCKS—COCKERELS—Cockerels—Cockerels—Yes, we have them; also Hens and Pullets—all bred from our Champion Winners at California's leading shows. Also hatching eggs. If it's Barred Rocks you want, get in touch with me right away. Have bred them exclusively for nineteen years. Send for Catalog. Chas. H. Voden, Box 396, Los Gatos, Calif.

EXTRA QUALITY White Leghorn chicks, 12c until March 1st, then 10c. Carefully line bred from MacFarlane, Young, Martin and Cyphers strains of foundation stock. Eggs \$1.50 per 15, \$2.50 per 30, \$5.00 per 100, \$50.00 per 1,000. Acres of free range connected with our breeding pens, 20,000 feet under roof. Only Jubilee incubators used; disinfected every hatch. Don't save 2c per chick in buying and lose a dollar per pullet in raising; get the Best and Succeed. Newton Poultry Farm, Dept. 1, Los Gatos, Cal. Catalogue free.

TURKEYS, DUCKS AND GEES.

BRONZE TURKEY EGGS—\$3.50 per dozen, immediate delivery. Brehm Bros., St. Helena, Cal.

FOR SALE—Mammoth Bronze Turkey Eggs. Eastern stock prize winners. Mrs. Robert Farrell, Bolinas, Cal.

PEKIN DUCK EGGS—\$1.00 per setting; Toulouse goose eggs, \$3.00 per doz. L. D. Collins, Denair, Cal.

BRONZE TURKEY EGGS—By the setting or hundred. Also fine young Toms. Albert M. Hart, Clements, Cal.

COLORED MUSCOVY DUCKS—Quiet, quackless. Weigh up to 10 lbs. Good layers. Eggs, \$1.00 for 12. P. M. Cox, Sonoma, Cal.

MAMMOTH BRONZE TURKEY EGGS—\$3.50 per setting. Toulouse Geese eggs, 25c each. Mrs. M. Coghlan, Walnut Creek, Cal.

Mrs. Best's Letter.

CLOTHES FOR CHILDREN.

Dear Friends:—Perhaps you would be interested to know what the shops are showing for tiny tots. Tub things are always good for them, as falls and dribble stains are easily removed. Any one can make the simple clothes now in vogue even if they do not sew. The patterns are clear and the work is so brief that you can finish a garment before you tire of it.

For little boys there are suits of short trousers, open at the knee, and jackets made in Norfolk or middy style. The middie blouses lace at the sides and at the throat, have no plaits or gathers, but are simple blouses with sailor collars, no belts and short or long sleeves. The Norfolk jacket is made with a yoke, the same depth all around or with a yoke pointed in front and back. Some are made with box plaits, others with no plaits at all, and one had small plaits sewed down under the belt in back. All had belts and big collars. The sailor collars rolled away from the neck in true sailor fashion, but the Dutch collars laid flat.

Sonny is dressed up now by merely changing into another colored suit. To give you an idea of the materials and colors used, the styles show that Galatea, Indian head, rep and linen are popular. A black and white striped suit in the middie style was shown, red trimming the white collar. A green and brown rep in middie style had short sleeves, a white sailor collar and white band two inches wide at the bottom of the blouse. A tan linen suit had plaits sewed down under the belt in the back, had a large white collar embroidered in black over a tan collar and large pearl buttons down the front and at the knees of the trousers. A small tan cloth hat, encircled by a brown ribbon was shown with this suit.

There was also a cunning rose crepe middie suit for every day wear. The white suits were of both the styles and also very nautical, with long trousers and emblems sewed on collar and sleeves.

All the suits were decorated with pockets and buttons.

Tiny tots are dressed up when they have on one of the cunning knitted sets of leggings, sweater and cap. These sets come in all colors, are inexpensive and very comfortable for baby.

Little girls wear half hose and broad toed shoes like their brothers, only when they are dressed up their sox are more fancy, and patent leather strap pumps displace the kid shoes. There are adorable hats for the little Miss, all droopy and small. Some are plain straw trimmed by a band and rosette of ribbon, others are made dressy by a flower at the front of the crown and streamers of ribbon floating off the back. Dresses for special occasions are of sheer white stuff, long waisted, with a simple sash, depending upon the tucks and plaits to determine the exact dressiness.

One shop has been showing blue and rose linen empire dresses for afternoon wear. These are smocked or else gathered on a yoke and decorated with a long and short stitch

in black, or by an applique of something bright. These dresses have flat, wide collars of white and long sleeves, gathered into a band at the wrist and finished with an inch ruffle.

For play dresses, the Russian blouse and bloomers seem to be most satisfactory. The dress hangs from the shoulder and is loose, giving free play, and the bloomers obviate petticoats, and the difficulty of having them the right length.

Little girls' coats are most attractive. They are made of a pretty colored warm cloth in Empire style. The skirt is shirred to the yoke and sometimes finished with a cord. The sleeves are generally loose with a large flat cuff of the same contrasting material as is the collar, or trimmed like the collar. Usually they button up closely to the neck and are held by three large buttons down the front. The coat fits the shoulders rather snugly, the collar is large and the skirt is full and flares slightly. Cunning little ribbon bags are carried also, to complete the costume, and with these the little girl looks a miniature of her mother.

ROSABELLA BEST.

WASHING LACE CURTAINS.

It always pays to have a frame of light wooden strips to dry lace curtains on. It should be the exact size of the curtains, so that they may be stretched on it when wet and dried in this way. Tack a strip of strong cloth on all sides of the frame and pin the curtains evenly to this strip, top, bottom and sides. The ready made frames have small tacks over which the curtain is drawn. All net curtains can be more successfully washed by using the frame, as they stretch badly when wet.

The day before the curtains are to be washed, take them down, shake free from dust and put to soak in cold water. Change the water often and let soak over night. The next morning, wring and put into warm soap suds in which a tablespoon of borax has been dissolved for every gallon of water. Souse them up and down well and then scald in the boiler. Put through at least two rinsing waters and if they are white curtains blue them a trifle and place them on the frame on the grass to bleach. If they are creamy in color, dry in the shade, and if the color is to be deepened, add a

little strained coffee to the rinsing water.

HOW TO SELECT FOODS.

The health and appearance of the family are a good test of the wholesomeness of their diet, according to the United States Department of Agriculture Farmers' Bulletin 808, on how to select foods. If they are strong, well developed for their ages, free from ailments, full of energy and ambition, one may safely say their food agrees with them. But if they are listless and ailing, or not as well developed either physically or mentally as they should be, and if a competent physician finds that there is no special disease to account for these bad symptoms, a mother may well ask herself if the food is right, and if not, how she can make it so. The danger is that the diet taken week in and week out has provided too much or too little of some one nutrient.

Habit and custom help greatly, because they usually are based on what the experience of generations has proved is wise and healthful. Good food habits include more than cleanliness and order in everything that has to do with food and meals, and leisurely ways of eating. Equally important are a liking for all kinds of wholesome foods, even if they have not always been used in one's home, and eating reasonable amounts. To refuse to eat some wholesome dish simply because one is not accustomed to it may prevent the use of some very desirable and economical food. To feel that there is any virtue in providing more food than is needed shows poor taste as well as poor economy.

CREAM SOUPS.

The foundation of all cream soups is a white sauce made by stirring two tablespoons of flour into one tablespoon of melted butter. To this add one quart of milk with a teaspoon of salt and a dash of white pepper and bring to a boil. A pint of cooked green peas mashed or spinach or asparagus is good. To make a celery soup, boil one pint of cut celery till tender and add to the milk. For potato soup, use six large potatoes boiled and mashed fine, then stirred into the milk and strained, adding a tablespoon of chopped parsley just before serving. For corn soup, add a can of corn, chopped, to the milk.

Cook Pork Thoroughly

Eating insufficiently cooked pork recently caused serious illness in every member of a Marin county family. The cases were investigated by the Bureau of Communicable Diseases of the California State Board of Health and it was determined that the patients were suffering from trichinosis, a disease that exists chiefly in rats, hogs and men.

Rats become infected through eating scraps of infected meat about slaughter houses and through eating each other. Hogs become infected through eating rats, and men become infected through eating hogs. If pork is thoroughly cooked before eating, however, there is no danger of contracting the disease. Trichinosis is without doubt more prevalent than is generally known, many cases being mistaken for other diseases. Housewives should always cook pork thoroughly in order to make certain that dangerous meat is not served on the family table.

HINTS TO HOUSEKEEPERS.

A hot iron will soften old putty so that it can easily be removed.

The tone of a piano is much improved if the instrument is moved out from the wall.

To remove sewing machine oil stains, rub the stain with sweet oil or lard and let it stand for several hours; then wash in soap and cold water.

Cut glass dishes need washing often even when not in use, as the dust accumulates in the cuttings. Wash in warm water, rinse in warm water and bury while still wet in fine sawdust for several hours. When perfectly dry, the sawdust will brush off easily with a soft brush. This method prevents scratching.

To prevent the icing of a cake from running down the sides, double a piece of oiled paper three inches wide and fasten it closely around the cake, letting the band come an inch above the cake. In this way a cake may be frosted evenly and with a thick layer to its edge. Do not remove the band of paper until the icing is thoroughly dry.

If the fringe has worn from the ends of the rugs or if they have never had fringe but are worn threadbare, a new fringe can be purchased at any good furniture store, together with the heavy thread necessary to use in sewing it on. The improvement is well worth the expense.

HONEY RECIPES.

Editor Home Circle:—I have some old strained honey and would be glad of any recipes for using honey in cooking.—L. L. S., Modesto.

For honey cake take one-half cup butter, one cup sugar, one cup honey, one pint flour, one teaspoon baking powder, two eggs and one teaspoon caraway seed. Mix honey and sugar, add the butter melted, the eggs slightly beaten, and the flour sifted with the baking powder and caraway seed. Mix into smooth batter about like sponge cake. Bake 35 minutes in fairly hot oven.

Will some of our readers who have tried honey recipes be kind enough to send them in to this department?

MEXICAN RICE.

One cup of rice washed and thoroughly dried, one tablespoonful of lard in bottom of iron pot—heat to boiling, pour in rice, stir constantly until a light brown color. Add two small onions chopped, one-half can of tomatoes put through vegetable masher. Cook together five minutes, season with salt and pepper. Cover all with boiling water and cover the kettle closely. Simmer an hour on the back of the stove.

Specialists in Specimen Stock for Landscape Work.

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FORTY VARIETIES OF FERNS

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HAROLD SOMERS, 180 DeKalb Avenue, Brooklyn, N. Y.

Good Health.

[By H. E. Pastor, M. D.]

CARE OF THE TEETH.

Teeth kept perfectly clean will not decay. Decay is caused by bacteria which find lodgment in protected places on tooth surfaces and by breaking down the sweets and starches of food remnants produce an acid that destroys the tooth substances.

Keeping all tooth surfaces absolutely clean by proper brushing and rinsing the teeth and mouth after each meal, and the use of silk floss before retiring, would probably prevent most of the decay in children's teeth.

Care and attention should be given the teeth of all children, for with decayed teeth food cannot be perfectly masticated, and imperfectly masticated food cannot be perfectly digested, thereby preventing the proper development of the body and lowering its resistance to disease. Tonsillar disease, rheumatism, and many other ills are caused by swallowing the decayed matter from uncared-for teeth.

It might be mentioned in this connection that the mastication of garlic is reputed to account for the fine white teeth of our Italian population. The doctor in charge of the dental clinic of the New York Board of Education says he found not a single defective tooth among the pupils of Italian descent. San Francisco clinicians say that Italian diet is fine for teeth, and that it takes two generations for teeth to become "Americanized."

A GOOD COLD CREAM.

During the summer months, and especially in windy and hot weather, one requires a good cold cream that can be applied in the daytime without being noticeable. For such, try the following recipe: Take half an ounce each of spermaceti and white wax, with two of witch-hazel and three of sweet almond oil. Let the wax and spermaceti barely melt over hot water before adding the oil. They should only just turn liquid before being removed from the heat. Mix in the oil, then with a silver fork add the witch-hazel, drop by drop; beat to a smooth cream, adding a few drops of any preferred perfume.

HEALTH JOTTINGS.

Onions are one of the best nervines known. They are as useful as any medicine in cases of nervous prostration, and nothing else so quickly relieves and tones up a worn-out system. The use of onions will relieve cases of coughs, colds, influenza, and are useful in treating consumption, insomnia, scurvy, gravel and kindred liver complaints. Eaten every other day, they have a clearing and whitening effect on the complexion.

Raw beef proves of great benefit to persons of frail constitution and to those suffering from consumption and other wasting diseases. After being chopped fine and seasoned with salt, heat by placing the dish in a pot of hot water. It is rapidly assimilated and affords much nourishment.

Blackberries are a tonic and useful in all forms of diarrhoea.



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in more than a million homes in the West. Yours should be among them.

You'll find a "rounded" spoon of Ghirardelli's Ground Chocolate is equal in chocolate strength to the "heaping" spoon of others.

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L. Anderson Co., Mrs. MARTINEZ, CAL.

Figs are laxative and wholesome. They are said to be a valuable food for those suffering from cancer.

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SAN FRANCISCO.

San Francisco, April 18, 1917.

WHEAT.

While trading in wheat during the past week has naturally been limited by the scarcity of offerings, there has been a steady advance in asked prices, with buyers forced to pay just about what the holder cared to ask. Northern bluestem was again in the market as the result of another shipment from Washington, and sold readily at \$3.80@3.85. The heaviest advance of the week came on California Club, which is being held at \$3.65 in any but very large lots.

Sonora wheat, re-cleaned.....\$3.75@3.85
Northern Club.....None offered
California Club, per cbl.....\$3.80@3.85
Northern Bluestem.....3.80@3.85
Northern Red.....3.45@3.50

BARLEY.

The advance on barley futures has not been quite so rapid during the past week, the market presenting an appearance which could be taken to indicate an "over-stimulated" condition. The interests which were buying so heavily last week withdrew their support, but prices still held very steady around \$2. Representatives of San Francisco houses are still scouring the producing sections in an effort to close contracts for the next year's crop; and deals of this sort for as high as \$2.05 per cental have been reported. Crop indications cannot be said to have improved, although rains at this season would help to bring an improved yield. Feed stock is still in demand from herd owners in various interior sections and spot stock is being held at \$2.60@2.75 per cental, with only round lots going at the lower end of this quoted range.

Shipping, cbl.....Nominal
Brewing.....Nominal
Choice feed, cbl.....\$2.65@2.75

OATS.

Red feed oats were unchanged during the week, but white grades added another \$1 per ton under a good shipping demand. There was some export inquiry in the market, but none of the local houses cared to fill these orders at the figures foreign buyers were willing to pay. There are no large holdings of oats in the market at present.

Red feed.....\$3.25
White.....\$2.55@2.60

CORN.

Eastern markets are still so unsettled that no adequate quotations are available on Eastern Yellow corn to arrive, this line being practically cleaned out of the local market, with no immediate prospect of any stock reaching here for some time. California stock advanced two dollars per ton during the past week, with milo and Egyptian holding very firm at current quotations.

(First-hand prices on strictly first-class grain, San Francisco.)
Eastern Yellow, cbl, bulk.....Unsettled
California, sacked.....\$3.15@3.20
Milo Maize.....2.85@3.00
Egyptian.....2.90@3.10

There was another general advance in bean quotations during the past week despite the fact that prices are now so high that a large percentage of the retail demand is bound to be curtailed. The only variety which failed to move up was horse beans; and local holdings of this variety are generally off-grade and hard to move. The local trade is fully prepared for further advances, and some idea of the firm futures market is to be found in the fact that brokers here are contracting for next crop whites and limas at 9½@10c. One of the most important independent brokers is responsible for the statement that "futures in the grower's hands are worth almost what he wants to ask for them." The placing of further foreign government orders in the East last week has brought more efforts on the part of Eastern wholesale grocery houses to close contracts here, and holders of carload lots have no trouble in selling to these houses at the current prices. Generally speaking, the grower who is in a position to carry himself through cannot lose by refusing to sell at this time. Reports from throughout the State say that while rain would be very welcome it is still too early to say that the lack of rain is going to mean a crop failure. Well-backed reports on acreage would indicate that the total increase in California will be between fifteen and twenty per cent over last year. There is no cause for either alarm or worry in this condition, as California will have more than enough business next year to care for any increase in production.

Beans, per cbl.....\$10.00@10.50
Blackeyes.....9.00@9.25
Cranberry beans.....11.00@11.50
Horse beans.....6.00@6.25
Small Whites (south).....13.00@14.00
Large Whites.....13.00@14.00
Pinks.....11.50@12.00
Limas (south, re-cleaned).....14.00@14.50
Red Kidney.....12.50@13.00
Mexican Reds.....10.00@10.25
Tepary beans.....None offered
Garbanzos.....5.00@6.00

HAY.

Receipts of hay continue to decline, as country needs are forcing a continually increasing trade between the various country sections. Arrivals last week were 1,380 tons, as compared with 1,771 tons for the week before and 2,063 for the week preceding that. Some Oregon and Washington hay, purchased last month by local dealers, met fair sale here at \$24@28 per ton. The fact that local herd owners are unaccustomed to feeding cheat, vetch, and the oat and clover varieties has served to hold down prices on this stock. Local hays were generally higher and fancy wheat touched a new top of \$32 per ton in carload lots. Showers last week proved of only temporary relief to the grain sections and the first cutting of alfalfa, offered here too green, proved almost unsalable. It will be at least a month before the new alfalfa hay will be of practical value; and until then there is every reason to look for continued high prices, and possible advances. It is conceded that there will be practically no

THE MARKET REPORTS

Figures Given are Independent and Reliable.
Prices Quoted as Paid to Producers.

volunteer hay this year, and ranchers who had been figuring on this type of hay for relief will have to look elsewhere.
Wheat, No. 1.....\$28.50@32.00
No. 2.....26.50@28.00
Tame oats.....26.00@31.00
Wild oats.....23.50@27.00
Barley.....25.50@28.00
Alfalfa.....23.00@26.00
Stock hay.....16.00@18.00
Straw, per bale.....1.00@1.25

FEEDSTUFFS.

The cleaning up of this market's holdings of beet pulp, and advances on alfalfa meal and bran were the outstanding features of the past week's feedstuffs market. While ranchers are buying as sparingly of these offerings as possible, feed conditions are such that further advances on these offerings can be expected.

(Per ton, San Francisco.)

Beet Pulp, per ton.....None offered
Alfalfa meal, per ton.....\$28.00@29.00
Bran, per ton.....42.00@43.00
Oil Cake.....50.00@52.50
Cocoanut cake or meal.....33.00@34.00
Cracked corn.....64.00@65.00
Middlings.....50.00@52.50
Rolled Barley.....50.00
Tankage.....47.00@48.00
Rolled oats.....50.00@55.00
Rice middlings.....35.00@38.50

POTATOES, ONIONS, ETC.

With outside markets again buying here, prices on potatoes have again advanced and fancy brands of delta stock are commanding as high as \$5 per cental. So valuable has this product become that for the first time in the history of the market here special night watchmen have been detailed to watch the wharves where the precious tubers are stored. Local onions are out of the market, with the Australian variety bringing \$8.00@8.50 per cental. Local green onions are commanding \$1.25@1.40 per lug box. Asparagus is quoted at a wider range, owing to heavier offerings of cull stock, and the same is true of lettuce. Wax beans during the past week brought as high as 25 cents per pound.

Asparagus, per lb.....3½@7c
Peas, per lb.....5@8c
Wax Beans, per lb.....15@25c
Hubbard squash, per lb.....2½@3½c
Summer squash, per crate.....\$3.25@4.00
Lettuce, crate.....75c@1.50
Celery, Delta, crate.....1.25@2.00
do, Southern, crate.....None offered
Tomatoes, crate.....Not enough to quote
Rhubarb, box.....40c@1.25
Potatoes, cbl, Delta.....4.25@5.00
Sulinas.....Cleaned up
Oregon.....4.50@4.75
New, per lb.....6@8c
Sweets, per lb.....1.50@1.75
Onions, green, per box.....\$1.25@1.40
Garlic, lb.....1@3c

POULTRY.

There have been no notable changes in the local poultry market during the past week, offerings being just about heavy enough to supply local needs. Some attempt was made to boost prices, but the retail trade refused to meet the higher asked rates and it became necessary to drop back to the present level.

Turkeys, live, lb.....22@24c
do, dressed, large, lb.....Nominal
Broilers, 1½ to 1½ lbs.....38@40c
do, under 1 lb.....30@31c
Fryers.....36@39c

Special Citrus Market Report

Los Angeles, April 17, 1917.

Shipments the past week were again heavy and the eastern markets under the increased offerings showed weakness. The actual declines, however, were light and confined mostly to the poorer offerings. Sales reported very good at the prices. Locally the market was very quiet. The best large sizes of highly colored oranges met fair demand, but small and medium sizes were very draggy. Grapefruit dull at 2@2½c per pound from growers in the grove picked. Tangerines were in light supply; offerings generally poor and hard to sell at 1½@1½c per pound in the grove picked. Lemons continue dull; but what are moving, sell at old prices, 1@1½c per pound in the grove picked for the best. Poor and culls sell for what they will bring.

San Francisco, April 18, 1917.

No price changes for oranges last week, but the cheaper grades of lemons and grapefruit advanced. High prices on lemons despite the absence of really fancy grades here.

FRUIT MARKETS U. S. AND CANADA PROMISE HIGH PRICES

After returning from a 13,000 mile trip in Eastern U. S. and Canada for the R. M. Tooker Co., G. A. Bolster writes us as follows:

"The impression I got in the different markets (and it is sustained by the business we have been doing this spring), is that there will be a ready market East for about everything in dried and canned fruits, beans, etc., that California can produce this year, and at good prices. It is very plain that labor is well employed, everybody busy, and in consequence money very plentiful, so that the people are in good shape to pay high prices for food products, and which they are enabled to pay by the good wages they are getting. It looks as though this condition might continue through this year anyway.

"In Canada I found the situation very much the same, except that so many men have been called to war that it will make labor very scarce for agricultural purposes unless they are able to bring in labor (Chinese or others), as I understand they are planning to do; otherwise the Canadian markets are in especially good shape for taking a liberal quantity of California food products."

Hens, extra, per lb., colored.....25@26c
Small leghorn.....22@23c
Smooth Young Roosters, per lb. (3 lbs. and over).....30@32c
Old Roosters, per lb.....15@16c
Geese, per lb.....20@22c
Squabs, per lb.....35@40c
Ducks.....22c
Old.....21@22c
Belgian Hares (live).....14@15c

BUTTER.

Butter closed the week at the same level as marked the opening, after having sold up as high as 40½ cents for the extras grade during the week. Shipping demands were responsible for the advances, the East and Pacific Northwest both being buyers here. Alaska business has been a little slower than had been anticipated, because of the difficulty in securing seamen to man the salmon boats. The most important announcement of the week was the awarding of government contracts to San Francisco firms calling for 80,000 pounds of butter. Of this the California Central Creameries will furnish 80,000 pounds for San Francisco delivery and 650,000 pounds for Eastern delivery and Monotti, Larimer & Solie 150,000 pounds for Eastern delivery. This will mean a cut in available Humboldt offering during the next two months of nearly one million pounds and is bound to be reflected in the future quotations.

Thurs. Fri. Sat. Mon. Tu. Wed.
Extras.....32 31½ 32 32 33½ 34½
Prime firsts.....38½ 38½ 39½ 39½ 39½ 38½

EGGS.

California poultrymen can certainly find no cause for complaint at the present trend of the market, with prices on eggs constantly advancing in the face of increasing receipts and with quotations at a record high level for the month of April. Shipping orders and liberal entries into storage are responsible for the better prices now ruling, and there is little in the present situation to indicate that any declines are to be expected for a time. Storage holding in San Francisco are now in the neighborhood of 45,000 cases, as compared with 41,000 for the same time last year.

Thurs. Fri. Sat. Mon. Tu. Wed.
Extras.....32 31½ 32 32 33½ 34½
Extra 1sts.....30 30 30 30½ 31½ 32½
Extra pullets.....28 28½ 28½ 28½ 29½ 29½
Ex. 1st pul.....27½ 27½ 27½ 28 29 29½

CHEESE.

The big shipping call continues to send quotations up for cheese. The gain on Jack cheese has been especially marked and full cream stock is commanding 22½ cents per pound on the street at the present time. Flats fancy are quoted at 22 cents and Young Americas fancy at 25 cents, with prospects of both advancing within the near future.

X. A.'s.....25c
Fancy Calif. Flats, per lb.....22c
Monterey Cheese.....19@21½c

DECIDUOUS FRUITS.

There were no changes on the asked prices for Newtown apples last week. The market is almost bare of this offering and continued sales at the present rate will mean the dropping of quotations within a month.

Apples:
Heldover, box.....Not enough to quote
Newtown, fancy.....\$1.40@1.75
do, ordinary.....1.00@1.15

Oranges:
Navels, fancy, per box.....\$2.65@2.90
do, Choice.....1.85@2.25
Tangerines.....1.75@2.00
Lemons:
Fancy, per box.....3.25@3.50
Choice.....2.75@3.00
Lemonettes.....1.75@2.25
Grapefruit, fancy.....2.75@3.00

EASTERN AUCTION SALES.

New York, April 17.—Fifty-three cars navel, thirteen mixed and four cars lemons sold. Market lower on oranges, unchanged on lemons. Weather fair. California navel averaged \$1.60@3.30. Lemons averaged \$2.20@3.25. Bloods, halves, averaged 95c@1.45. Tangerines, halves averaged 90c@1.50.

Boston, April 17.—Thirty-two cars sold. Market easy on oranges, unchanged on lemons. California navel averaged \$1.60@3.30. Lemons averaged \$2.25@3.00.

Philadelphia, April 17.—Eighteen cars sold. Market higher on oranges, demand good. Market stronger on lemons. California navel averaged \$1.90@2.80. Lemons averaged \$2.65@3.10.

DRIED FRUITS.

The dried fruit market was decidedly firmer this past week, partly the result of more activity on the part of buyers. Future peaches were advanced again and spot prunes registered a sharp gain. This naturally had its effect on the futures market and contracts for as high as 6¼ cents were reported. Spot apricots are cleaned out of this market and 15½ cents is freely offered for new crop goods. (Net to growers, bulk basis, f. o. b. shipping point.)

Apples, new crop.....5½@6 c
Apricots, per lb.....15 @16½c
Figs, black, 1916.....Not enough to quote
do, 1917.....5½@6½c
do, white, 1917.....6 @6½c
Calimyrna, 1917.....9 @10 c
Prunes, 4-size basis, 1917.....5½@6½c
Prunes, 1916.....7½@8½c
Pears.....6 @7½c
Peaches, 1917.....7½@8½c

BERRIES.

Increased receipts have so far failed to break the prices on strawberries in this market, but the rate goods are coming to hand presages such a drop within the next few days. Longworths, Bauers, and Malindas from nearby points are being offered in a small way now, and quotable sized receipts of these will naturally mean lower prices.

Strawberries, per crate:
Choice.....\$1.50@1.75
Off-grades.....1.00@1.25
do, per drawer.....75c@1.00

HOPS.

Sacramento.....6 @6c
Sonoma.....7½@9c
Mendocino.....8 @8c

OILS.

Pearl Oil, per gal.....9c
do, cases two 58.....17c
Headlight, bulk.....10c
do, cases two 58.....18c
Ecocene, bulk.....11c
do, cases two 58.....19c
Gasoline, bulk.....20c
do, cases two 58.....28c

LOS ANGELES.

Los Angeles, April 17, 1917.

BUTTER.

Receipts of week ending April 17, 291,680
Receipts of past week.....364,380

There was a stronger tone to the market throughout the past week. With receipts running lighter than last year and the Eastern and Northern markets all higher, caused dealers to bid prices up. San Francisco advanced 1½c up to Monday, Chicago 1½c and New York 1c. The high Eastern markets drew a number of good shipments East from California during the week and this, with a continued good demand for the Alaska trade and Honolulu, cut down the supply for the consumptive demand and influenced higher prices. The local demand was not heavy, the high prices causing many to resort to butter substitutes; or prices would have been still higher. As it is, values are now 14c higher than this time last year. Tuesday brought no change. San Francisco was off ½c, while the Eastern markets were firm; the result was the market here was made the same as the day before.

We quote California extra creamery.....39c
Prime first.....38c
First.....37c

Daily quotations:
1917— Wed. Th. Fri. Sat. Mon. Tu.
Extra.....37 37 38 38 39 39
1916—
Extra.....29 29 28 27 27 25

EGGS.

Receipts (railroads) for week ending April 17, 1917, 2,772 cases.
Receipts (railroads) for week ending April 10, 1916, 4,009 cases.

Market past week steady and firm throughout. Receipts much lighter than a year ago. Receipts for the week by rail were 2,772 cases and 2,400 cases of Petaluma were received to go into cold storages. The consuming trade took most of the fresh eggs. This demand, with a slight shipping movement, was sufficient to maintain a steady and firm market. San Francisco advanced 1c up to Monday and Chicago 2½c to 2½c and New York 1½c to 1½c on firsts. This also had a bullish influence, but at the present high prices there was little disposition to speculate on change. Tuesday, under light receipts and an advance of 1c in San Francisco, the market was bid up 1c and a very good demand was had at this improvement. But, as during previous days of the week, the demand was mainly from consuming trade.

Daily quotations:
1917— Wed. Th. Fri. Sat. Mon. Tu.
Extra.....32 32 31½ 32 32 33
Case Count.....31 31 31 31 31 32
Pullets.....29 29 29 29 29 29½
1916—
Case Count.....21 21 21½ 21½ 21½ 22

POULTRY.

A more quiet tone pervaded this market the past week. No Eastern poultry in, but local receipts were better. The very high price of feed causing many poultrymen to trim their flocks closely. Young broilers coming in especially firm and are lower again. Fryers, too, are off and slow sale. All else steady but weak, and no urgency to the demand, the high prices causing consumers to take hold more cautiously.

We quote from growers:
Broilers, 1½ to 2 lbs.....29@30c
Fryers, 2½ to 3 lbs.....27c
Hens over 4 lbs.....23@24c
Hens under 4 lbs.....20@21c
Ducks.....22@23c
Geese.....15@16c
Roosters, 3 lbs. up (soft bones).....26c
Turkeys, heavy, 12 lbs. and up.....29@30c
Turkeys, light.....24@25c
Squabs, live, per doz.....\$1.50@3.00
Dressed.....3.75@4.85

BEANS.

With seed time at hand and the new crop being contracted at high prices, which means an increased acreage, and the government in the market for beans for the

F. J. Kell Wins Rural Press Prize

Our records show that five grades in the herd owned by F. J. Kell, Stockton, had the highest average production for the month of March in the State Dairy Contest, viz., 71.050 lbs. fat, the individual cows producing 84.315, 78.566, 70.562, 65.838, and 55.967 lbs. fat, respectively. Mr. Kell is, therefore, entitled to the Pacific Rural Press prize for March. Four of the other herds competing for the prize last month were: Hollow-Hill Farm, Redlands, average production 59.649 lbs.; F. Stenzel, San Leandro, 58.024 lbs.; F. K. Abbott, Milpitas, 50.232 lbs.; J. Guill, Chico, 45.485 lbs.

army and navy, caused an active and sharply higher market the past week. Limas were advanced 2½c, large and small whites 2½c, and blackeyes and tepary 2½c per pound. Prices below are record ones on this market and firm.

We quote from growers:

Limas	.....16c
Large white	.....16c
Small white	.....16c
Pinks	.....12½c
Blackeyes	.....10c
Tepary	.....12c

HAY.
The market continues firm, but demand light and mainly from the country and for horse hay. Not much coming in; and the light offerings enabled dealers to hold prices up. Dairy people using but little cured hay, feeding mainly green alfalfa. Receipts 25 cars.

We quote f. o. b. Los Angeles:

Barley hay, ton	.....\$21.00@23.00
Oat hay, ton	.....22.00@24.00
Alfalfa, northern, ton	.....20.00@22.00
Alfalfa, local, ton	.....22.00@23.00
Straw, ton	.....11.00@12.00

NEW VEGETABLES.
A number of new vegetables are now on the market. Asparagus is coming in freely and is lower, but in very good demand at quotations. New silver skin onions from the Imperial Valley are now on the market and are selling fairly. Cabbage is in good demand and higher. Not much really good arriving. A few new potatoes are on the market and sell in a fair way.

We quote from growers:

Cabbage, per cwt.	.....\$4.50@5.00
Asparagus, local and northern, lb.	.....6@7c
Imperial Valley, lb.	.....5@6c
New potatoes, per lb.	.....7@8c
New onions, Imperial Valley silver skin, per lb.	.....9@10c

BERRIES.
Strawberry receipts continue to improve both as to size and quality. With the freer offerings prices are kept reasonable and the demand in consequence improves.

We quote from growers:

Poor to choice, per crate of 30 baskets	.....\$2.40@2.75
Fancy, per crate of 30 baskets	.....3.00@3.25

WALNUTS.
Little news is had as yet as to the outlook of the walnut crop this year, says Secretary C. Thorpe of the California Walnut Growers' Association. The season is late, but as far as learned the frost did little damage, not over 10 per cent. Setting is very good. Prospects are for a good crop, unless blight, aphids, or heat interfere.

HONEY.
Reports from the country indicate no improvement in the crop outlook since our last report. The shower of last week was not sufficient to do any good. The season is said to be fully thirty days late. No extracting has been done; hence we are unable to give quotations. Indications are that the sage honey yield will be especially short. Bees have had slim pickings so far.

SHEEP.—Four decks of prime shorn lambs brought \$11.25 and a load of old ewes and bucks \$9.75. A few spring lambs brought 15c last week.

Publisher's Department.

We congratulate you on your last issue of the Rural Press. It will no doubt be a big boost for the swine industry of the State.—Elmer Lamb, Ceres.

We believe in complimenting a good thing when we see it, so we want to compliment you upon your special hog number, out today.—V. R. Churchill, Honig-Cooper Co.

That was some issue.—R. H. Whitten, Los Angeles.

Your swine edition of the Pacific Rural Press, I consider the very best effort of this nature I have ever seen.—A. M. Henry, Farmington.

The swine edition of the Rural Press is an all-around first-class number and reflects credit on the publishers for the enterprise. It should prove of great benefit.—J. W. Henderson, Berkeley.

I think the swine issue was a complete success. Keep the good work going.—John P. Walker, Visalia.

Classified Advertisements

Rates in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

MISCELLANEOUS.

I WANT TO BUY CANARIES.—Males and females. Box 510, Pacific Rural Press.

TO REDUCE THE HIGH COST OF LIVING, send for our Wholesaler to Consumer Catalog. Smiths' Cash Store, 106 Clay St., San Francisco.

PATENTS THAT PROTECT are procured through Pacific Coast Patent Agency. Savings and Loan Building, Stockton, California. Established fifty years.

AT LAST THE PERFECT SILO—THE Star Round; No hoops. No bolts. No experiments. Any one can erect. Close price. Address D. O. Lively, 215 Hobart Bldg., San Francisco.

SECOND-HAND WATER PIPE and Screw Casing. New threads and couplings dipped in hot asphaltum. All guaranteed. Send us your inquiry. Scheier Pipe Works, 306-8 Howard St., San Francisco.

GROCERIES WHOLESALE.—Our prices are the lowest and our quality the highest. Dollars saved on every order. Freight paid within 100 miles. Send for catalog. Freese and Company, Mail Order Grocers, 1264 Devisadero St., San Francisco.

EVERY SIZE WROUGHT IRON WATER Pipe and screw casing water pipe, guaranteed as good as new. Prices right. Send for catalogue. We beat no one; everybody gets a Square Deal. Weissbaum Pipe Works, 160 Eleventh St., San Francisco.

FOR SALE.—Flour Mill Rolls, 4 inch each. Stand. Allis Chalmers Co. pattern. Rolls 9 in. diam. x 18 in. long, all complete with shaker, feed counter, shaft driven and differential pulleys. Suitable for grinding or crushing barley, wheat, rye, corn or rice for feeding horses, cattle, or hogs. For prices, capacity and particulars, write H. B. Barkis, Lodi, Cal.

SEEDS, PLANTS AND TREES.

VALENCIA TREES.—From selected buds. Magnolia Nursery, Whittier, Cal.

WANTED AT ONCE.—30 sacks Tepary beans. Send sample and state lowest price. K. Knutsen, Turlock, Cal.

SUDAN GRASS SEED.—Hay crop is short. Plant Sudan. I have choice pure seed, 30c per pound. J. F. Chase, Lindsay, Cal.

JUST ARRIVED, another car fine low-top Burbank seed potatoes; special hill selected; fine strain. A few sacks of American Wonder. H. A. Hyde, Watsonville, Cal.

SEED CORN.—Egyptian white, large pure white kernels. High germination test. None better offered. Also milo maize, feterita, and Egyptian wheat. Modesto Farmers' Union, Modesto.

ALFALFA SEED.—There is a difference in the varieties and strains of alfalfa seed. Send your address for sample and our low price, and we will tell you just how our seed is selected—and why. Bomberger Seed Co., Modesto, Cal.

SEED BEANS.—We sell direct to the grower. Buy now before the advance. Our stock is carefully selected. Satisfaction guaranteed. Tell us the nature of your soil and we will suggest the best variety. Modesto Farmers Union, Modesto.

WANTED.

WANTED.—Competent man to take care six Guernsey cattle, other work on country place. Woodside, California. State age, references, nationality. 10 Insurance Exchange, San Francisco.

WANTED, MARRIED COUPLE.—Man experienced in general farm work and wife to cook for owner whenever needed. References required. Address, P. O. Box 34, Menlo Park, California.

WANTED.—Sober and industrious man for orchard work, must be able to handle team and accustomed to irrigating. Good opportunity for right man. State references and experience. Address, Box 520, Rural Press.

WANTED.—Position as manager of dairy or Stock Ranch, by married man, 44. Experienced in details of production and marketing sanitary milk. Would consider large dairy or blooded cattle ranch on share basis. Pacific Rural Press, Los Angeles.

WANTED.—Young men and women to attend the Western Normal Course—Normal and Academic. The Normal Course gives an adequate preparation for teaching, at a great saving in time and money. Academic course gives practical finish to education. Write for Bulletin "A," Western Normal, 524 E. Market St., Stockton, Cal.

COUNTRY LANDS.

STATE, GOVERNMENT AND INDIAN Lands.—Bargains overlooked. Free New Blue Booklet. Joseph Clark, Sacramento.

WANTED to hear from owner of good ranch for sale. State cash price and description. D. F. Bush, Minneapolis, Minn.

STEVENS COUNTY.—Logged-off land where stock-raising and dairying pay. Free booklet. Phoenix Lumber Co., Crop Department, Spokane, Washington.

B. S. COELHO, CORCORAN, CAL., Owner—150 acres improved, subdivided alfalfa dairy. Stratford. Keeps 85 cows. C. E. Robertson, 105 Montgomery St., San Francisco.

ORCHARDISTS AND DAIRYMEN.—Before you invest, investigate Mountain View, in the center of Santa Clara County's fruit and dairy section, 5 miles from Stanford University, 35 miles from San Francisco. Rich soils, abundance of water. Ideal climate. Write for catalogue, "California's Choicest Acres," William P. Wright, Mountain View, Santa Clara Co., Cal. The Oldest Real Estate Office in Northern Santa Clara County. Established 1901.

A RARE OPPORTUNITY to secure a 20-acre Almond or Fruit ranch. Best of soil; two and one-half miles from town. No cash payment. Purchaser to bear the cost of improving only. This should appeal to salaried people who have in mind the securing of a country home that will insure a life income. I am improving for myself land adjoining this property. This offer is by owner and no commissions paid. For particulars apply to A. L. Hobbs, 507 New Call Building.

Land Planted in Alfalfa for Dairying

10 acres and up to a quarter and half sections, all under irrigation. Also first-class Orchard Land.

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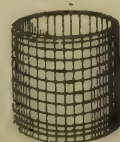


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Fast electric trains leave San Francisco every 2 hours during the day. One way fare \$2.50. Week end round trip \$3.35. Sunday round trip \$2.50. Convenient and comfortable electric train service from Bay Cities to Sacramento Valley points, including Woodland, Marysville, Oroville, Colusa, Gridley and Chico.

Oakland, Antioch & Eastern Railway

San Francisco Depot, Key Route Ferry. Phone Sutter 2339.



REDWOOD TANKS—SILOS. 35 years in this business in Stockton. I deal direct with the consumer, saving him from 10 to 25 per cent. All sizes in stock. Clear, dry redwood direct from the mill. 500-gal. tank, \$14; 1,000 gal., \$18. Other tanks equally cheap.

R. F. WILSON, STOCKTON, CAL.

Special Livestock Market Report

San Francisco, April 18, 1917.

CATTLE.—Past week more fed than grass cattle; but majority from now on likely to be grassers. Our quotations are for grass-fed stock this week, which explains most of the drop. Fed cattle ½ and ¾ cents higher. Quite a few still held for 10 cents; but are dangerously near competition with the cheaper kind. Receipts of grassers have been in good shape, but half-fattened stock is expected from sections of feed shortage.

Grass Cattle.

Steers, No. 1	.....9 @9½c
No. 2	.....8½@8¾c
Cows and Heifers	.....7¼@7½c
No. 2	.....6¾@7c
Bulls and Stags	.....6 @7c
Calves, light	.....9 @9c
Medium	.....8¼@8½c
Heavy	.....7 @8c

HOGS hold up to the top prices, good supply, good quality.
(Prices f. o. b. South San Francisco and shipper stands half the condemnations for tuberculosis. Rough docked 20 pounds, piggy sows, 40 pounds, stags 30 pounds.)

100 to 150 lbs.	.....12c
150 to 300 lbs.	.....14¼@14½c
300 to 375 lbs.	.....13¾@14c

SHEEP.—More lambs have been coming from the upper end of San Joaquin Valley. Many are in good condition, many not fattened. Northern lambs may come in a few weeks.
Prime Wethers11½@12c
Ewes10 @10½c
Lambs13 @13½c

WOOL.—The Government, which on April 2 took a two weeks' option on the wool of the Boston Wool Dealers' Ass'n (including dealers all over America), released its option without buying any great quantity. The effect of this has been to prevent over-speculation, but the market East is strong. Mendocino growers are still holding tight. Some lots are for sale around Cloverdale and Marysville at 50 cents for year's clip. Sacramento Valley, spring clip40@45c
Mendocino, year's40@42c
Cloverdale40@42c
San Joaquin, 8 mos.26c
San Joaquin, year's35@40c
Southern, spring clip22@23c
Southern, 7 mos.22@23c
Imperial Valley, 7 mos.30@35c
Nevada, year's35@40c

HIDES are meeting stronger demand, and Butchertown January hides were recently sold. These were the oldest on hand there. Green salted cow and steer hides are bringing about 25 cents in the country.

Los Angeles, April 17, 1917.

CATTLE.—Rather quiet and weak mar-

ket past week. Scarcity and high price of feed caused freer offerings of beef steers, and as the demand for beef has fallen off killers held back and were more exacting in their purchases, but paid unchanged prices for all fat killing steers. Cows and heifers also unchanged, but slow sale. Calves coming freely due to high price of feed. Market slow and weak.

Per cwt. f. o. b. Los Angeles:

Beef steers, 1000 to 1100 lbs.	.....\$9.50@10.00
Prime cows and heifers	.....7.50@8.00
Good cows and heifers	.....7.00@7.50
Calves	.....8.50@9.25

HOGS.—No change in this market from a week ago. With a falling off in the demand for fresh pork and most of the hogs coming in light weights, killers refusing to advance prices, notwithstanding the high markets East. California and Arizona furnished what hogs are coming in. But few really choice packing hogs arriving; and for such a premium was paid over quotations below.

Per cwt. f. o. b. Los Angeles:

Heavy, averaging 250@300 lbs.	.....\$11.50@12.00
Mixed, 200@250 lbs.	.....12.00@13.00
Light, 175@200 lbs.	.....12.00@13.00

Rough docked 20 pounds piggy sows 40 pounds and stags 40 per cent.
SHEEP.—Steady and rather firm market past week. Receipts only moderate of aged sheep and yearlings; and they were in very good demand. Killers all wanted supplies. Spring lambs coming more freely and quality not very good. Hence a slow and weak market, though prices not notably lower.

Per cwt. f. o. b. Los Angeles:

Prime wethers	.....\$9.00@10.00
Prime ewes	.....9.50@10.00
Yearlings	.....10.50@11.00
Lambs	.....13.00@14.00

North Portland, Ore., April 16, 1917.

CATTLE receipts today were about 800 head, the quality of which was very good. Demand excellent and trading very active. Prices on all grades ranged 25c to 35c higher than last week. One load of prime grain-fed steers brought \$10.25, a new record top, while there was a good spread of prime steers which sold at \$9.80 to \$10.15. Good steers brought around \$9.50, while medium grades brought from \$8.75 to \$9.25. Very few cows and heifers on the market, with a very brisk demand. Best cows brought \$8.75 and \$9.00. Medium dairy cows brought from \$7.25 to \$7.75, with common stuff down to 6c. Fair supply of bulls, with a good demand. Best heavy bulls \$7.25, with a considerable spread from \$5.40 to \$6.50. A few good calves sold at \$9.50.

WHEAT AND FLOUR SITUATION SERIOUS.

Flour advanced 20 cents three times in past two weeks. Now \$10 a barrel wholesale. Government reports California wheat, April 1, 83 per cent normal; ten-year average, April 1, 83 per cent. United States wheat, 63.4 per cent normal; ten-year average, 86.2 per cent. California average price, April 1, 1917, \$1.55 per bushel; April 1, 1916, 95c per bushel; United States, April 1, 1917, \$1.80 bushel; April 1, 1916, 98.6c. Chicago wheat, May, 1917 delivery, \$2.05 per bushel. Exports seven months ending January, 1915, 168,289,116 bushels; same period 1916, 103,945,271; 1917, 90,166,662. Last year exports four months preceding harvest, 79,000,000 bushels; this year only 66,000,000 bushels available for home use and export, corresponding period.

"HEADQUARTERS" FOR WOOD PIPE AND TANKS

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Up-to-Date Harvesting

MARTIN GARN, who realized that his opportunity had come for cutting out a lot of the old delays, worries, and high costs of his yearly harvesting, invested in a **Deering Harvester-Thresher**. His success with it is told in this letter:

American Falls, Idaho, Aug. 23, 1915.

The Deering Harvester-Thresher, purchased from the International Harvester Company, has proved very satisfactory, having cut about 150 acres, averaging about 15 acres per day, with but one man, cleaning and saving the grain better than any thresher I have operated. The machine is very economical, being the cheapest way of harvesting I know; the same is true of the cost of help. The saving in my thresher bill for this year will more than pay for the cost of the machine, in addition a great saving of work in the house has been made, and in the feeding and help that is required for the old-time way of harvesting. Yours truly,

MARTIN GARN.

Do your harvesting and threshing in one operation, turning the old unnecessary threshing expense into clear profit, saving time, doing away with the risks of long-drawn-out harvest. Own a **Deering Harvester-Thresher** for this year's harvest. Let your threshing bill saving pay for it. Write us for folders.

International Harvester Company of America

(Incorporated)



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Full weight, specially woven material. Size of tents guaranteed. Workmanship of the best, and marking correct in every detail.

WE INTRODUCED FUMIGATING TENTS IN THE UNITED STATES, AUSTRALIA AND THE ORIENT, AND OUR YEARS OF EXPERIENCE IS AT THE DISPOSAL OF OUR PATRONS.

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We manufacture the Wilson, Pacific, Covina, Hoegee Dashboard and Woodward Bags, covered by U. S. Patents—the only Practical Fruit Picking Bags on the Market.

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Both Plain and Coated—All Sizes.

Wm. H. Hoegee Co. Inc.

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All sizes from 2 inches to 12 feet in diameter.

Let our engineers quote you price on the proper pipe for your particular purpose.

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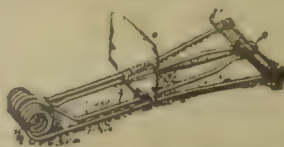
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HYDRATED LIME OR GROUND LIME ROCK

Free Booklet and Prices on Application.

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THE PACIFIC RURAL PRESS

SAN FRANCISCO

APRIL 28, 1917.

LOS ANGELES

A Banker's Experience in Financing Dairy Farmers

[Written for Pacific Rural Press.]

IF YOU have ever bought a sewing-machine, a set of books, or an automobile on the installment plan you have

a pretty fair idea of the way farmers in Glenn county with little or no funds have been, and still are, getting into the dairy business. The difference lies in the fact that the installments are paid by the profits from the purchases.

Back in May, 1913, there were 300 dairy cows on the Government reclamation project adjacent to Orland. As this is written, early in 1917, there are over 4,000 dairy cows on the same project. Two years ago creamerymen estimated that the average yearly production of all cows on the project was 175 pounds of butter fat; now they believe the average will run close to 275 pounds of fat per cow per year. Before the dairy cow stampede started in the Orland district, the new settlers had been selling their hay. Then prices took a tumble, and it looked pretty bad for awhile. They needed cows and needed them right quick. They got the cows all right; but many of them were of a poor sort, as is usual when buying is necessary in years of low hay values. The fact that they got poor cows is nowhere near so surprising as the fact that they had the money to pay for them, and that is where the country banker enters into our story.

A Cow Bank.

In May, 1913, an institution was established at Orland known as the First National Bank. Like any other bank, its primary object was to loan and borrow money. Its organizers believed that the best way for a bank to make money in a farming community is to do business with the surrounding farmers. But they quickly discovered also that a farmer doesn't have money to bank unless he is making money by his farm operations; and that in a new district there is nothing which quickens financial returns like a little ready money. You see, country banking is a kind of wheel within a wheel—the banker loans money to the farmer, the farmer invests the money to make more money to deposit with his banker to loan more money, etc. In other words, what is good for the farmer is good for the banker.

Now it holds just as true in banking as in any other business that the easiest thing to sell is what your customer is wanting most badly. Just at the time this bank was getting started the alfalfa growers needed "cow money"; also, the bank needed business; so, casting local precedent to the winds, they began financing dairy cow purchases. While in most cases the farmers selected their own cows wherever they could find them for sale,

How a country banker's policy of "what is good for the farmer is good for the banker" has worked out with financial gain to all concerned. Cows pay for themselves on the installment plan.

securing the bank by a chattel mortgage, yet in some instances they were bought by the bank and re-sold to the farmers on a "cow lease note," said sales being made without profit to the bank.

The Cow Lease.

A contract or lease note is in reality a promissory note bearing interest and providing for payment of the principal in monthly installments. When all of the payments have been made in accordance with the contract, the cows become the sole property of the dairyman. Until then the note is secured by the cows and their natural increase, the bank having the right to take possession of the stock at any time the dairyman fails to make

his payments. To further safeguard the banker, an agreement is made whereby the dairyman agrees to allow the creamery with which he does business to segregate a certain percentage of his monthly cream check and turn it over to the bank to be applied to the interest or principal of the note.

So much for the legal side of the transaction. When we interviewed Jno. J. Flaherty, cashier of the First National Bank, we discovered that the moral character of the borrower is far more important than the signing of a name to a contract, although that of course is essential from a banker's standpoint.

The Real Risk.

"The borrower's moral character enters into every loan made by a bank, and that applies to loans on all kinds of personal property, whether it be dairy cows or household furnishings," he says. "It is easy for any bank to find out the moral risk of a borrower. If he enjoys a good reputation in the community, he's a good risk; but if he doesn't, a loan is bad business, even if you have him tied up

with all sorts of legal documents. When we find a prospective borrower is all right, that he has feed and barn room so that we know the cows will have a good home, we never hesitate about loaning him money for dairy cattle; and in all of our transactions, which involve many thousands of dollars, we have never lost a five-cent piece, or had a cow come back onto our hands.

"While each farmer does his own buying, we make it a point to protect him as much as possible in his selection of cows so that he won't buy 'boarders.' While it is his money that is involved, we suggest that he buy a purebred bull and enter his herd in the cow-testing association. We have two reasons for this—first, the better cows he buys the more certain he is of succeeding, and the better we consider the risk; second,

(Continued on page 544.)



Stanislaus county is proud of its herds of Purebred Jerseys.



Jerseys are popular in all the dairy districts of California.

PACIFIC RURAL PRESS

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D. L. SCHRADER - Subscription Manager
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EDITORIALS

THE DRIVE FOR FOOD SUPPLY.

THE state-wide information and exhortation rally on the general problem of increasing food production in California which has lifted its voice in nearly all the counties during the last two weeks has reached as good results as could have been reasonably expected from it. The leadership of the College of Agriculture in this wake-up patriotic effort has been recognized by people generally as a proper manifestation of spirit and will to serve and the co-operation of various State executive departments, at the invitation of the college, has been widely appreciated. There has never been since the establishment of the college a better demonstration of the desire of the institution to draw near to the practical farmers and help them in their important service to the national welfare. In this respect the present administration reflects the spirit of the pioneer workers in the college and adds indisputable testimony to the value of its own motive and force in the wonderful development which it has achieved. As was to be expected, the farmers rallied warmly to the call for patriotic attention and co-operation and in the valley communities not less than 500 people assembled at some of the meetings. Early indications from these meetings, reports of which will be formulated next week, are that California farmers are wide awake to their duties and opportunities; that they are expanding their crop areas to the limit of their abilities and foresight of what is practicable at this season of the year; that, as a rule, they cannot do more on the land with the funds, implements and power now available to them and that they are really going hopefully beyond what is now in sight as available labor supplies. At one of the closing meetings held in this city, Dean Hunt impressively declared that the country is now doing all that it can: that everything reasonably possible for this year's planting has been done; that more work and new work must now begin for the cropping of 1918 and if anything notable in subduing new land is to be accomplished it is up to the city, not to the country—for the city has the money, the labor and the control of gasoline and electric tillage machinery as a substitute for work-stock of which the country has been depleted for distant war purposes. Therefore, as the city has the preponderance of population, and wealth, of available labor and of the new agencies of power, it is up to the city to act in the interest of its own future comfort and, in a broader way, it is up to the city to insure the survival of popular self-government in the current crisis of affairs.

MORE HASTE, LESS SPEED.

WE ARE glad to present the foregoing outline of Dean Hunt's conclusions from the wide rural conference and inquiry which has been made under his direction: first, because it is rational and cool and carries its own demonstration of true conception; second, because it conveys a true answer to the hysterical outcry about "speeding up the farmer," with which so

many are piercing the public ear—creating a popular impression that the farmer is a balky horse and can be started by building a fire under his tummy. It is almost incredible to what extent this foolishness can go. Even this was publicly said in Chicago last week:

"Farmers are not feeling the pinch and many of them are not awake to the situation. They, of course, will be the last to suffer in the case of food scarcity. It doesn't matter what it costs to produce. Money is only exchange, and if it should cost \$2 to produce \$1 worth of foodstuff it must be done. People can eat food, but not money. Cost should not be counted now. The world must be kept from starving."

Of course, if a man has the money and desires to blow it in that way for his own eating, we have no objection. In fact, we would rather commend the outcry as a slogan to those who are now so crazy about vacant-lot farming as a national relief, for it is in that activity that cost double the worth of the product is not only good judgment but eminently possible of realization. But the suggestion that farmers must be awakened to the pinch of doing that to save the life of the non-producing patriot, betrays a conception of the farmer's relation to the consumer which would do credit to Tiglath Pileser, the old Assyrian kaiser who not only forcibly possessed himself of the food supply of his conquered territory but deported the growers themselves into bondage. It may seem more merciful to do up American farmers in an economic way, but the difference in cruelties reached in both cases is not great. It ought to be very clear that the well-established farming industry, which is such a great credit and resource of the United States, should not be belabored by visionaries nor exploited by mistaken theorizers about the public welfare. If anything comes from the reasonable claim that urban consumers should bear their burden of the proposed effort for greatly increased food production, it must be remembered that it is impossible to achieve anything by plunging and that true speed is only attainable by employing the principles of science, mechanics, economics and hard work, which constitute good farming.

WHAT FARMING WILL GAIN FROM THE WAR.

SPEAKING of Tiglath Pileser reminds us that civilization will emerge from the fiery furnaces of this world war refined and tempered for higher service to mankind. Statesmen and philanthropists clearly foresee this and it belongs to them to describe and interpret their visions. In the relations of productive industry to human progress there will also be clearer seeing and more definite understanding than hitherto. In the particular branch of industry which feeds mankind we see great gains coming, which will ultimately accrue to the increased safety, comfort and peace-force of the human race. Agriculture has advanced from prehistoric times through hard knocks from warriors, despots and class-dominators. Ages ago peaceful food-producers were despoiled of their property and enslaved by lean and hungry nations, rushing in upon them with fire and sword. In more recent times they have been plucked of their prosperity by financial and commercial over-lords and held in helpless bondage by unyielding social discrimination. By such inhuman arts and forces, the multitude has been crushed beneath the heel of the few for millenniums. Philosophy, oratory, poetry and the pictorial arts have all been invoked to promote tranquility so that inhumanity might endure. Even after physical oppression largely ceased in civilized nations, economic and social oppression continued; partly because it was popularly regarded as more merciful; partly because it was discerned to have a finer cutting-edge than physical cruelty. Even in America, where, if we mistake not, all farmers first rose to political equality with all other men, financial and social inequality, in certain degrees, continued in public point of view and practice, though officially declared non-existent. In Europe the general farming population has always remained under discrimination, which ranged from serfdom to a kind of patronage called benevolent and beneficent. During the last half century farmers have advanced in public estimation everywhere because of their affiliation with research in natural science and their use of the

results of such research in the improvement of their viewpoints and operations. Natural science has exalted farming in the public mind and advanced the farmer in self-confidence and in public esteem, as the man who made largest and most varied use of its achievements in human service. Through all this progress there still remained financial and commercial unfairness, which now seems to be disintegrating, but to this moment has persisted the old idea of Tiglath Pileser, and his like in the world, that the food producer was a perpetual-motion organism to be robbed of its product or carried away by conquest to produce wherever the conqueror might set it up to his own advantage. The experience which the world is gaining in this war of the relation of the food producer to the success of all human purposes, and especially of his relation to statesmanship and public policy in this country, as emphasized by the agitation and legislation of the current month, demonstrates beyond question not only the fundamental character of the industry in human affairs, but the related fact that world-dependence, which every other producer strives to gain for his commodity as his surety of patronage and profit, is the natural endowment of food products. The business advantage of producing such commodities, as soon as the people fully realize that it is neither fore-ordained nor automatic, but is the achievement of insight, energy and enterprise, will be properly recognized as the field incomparable in material manufacture and trade. As a result, then, of the world's greatest war and of the adequate appreciation of its relation to the achievements thereof, farming will come into possession of its own—recognition as the greatest business, the greatest material activity and the most honorable and indispensable in the world. The fact is old as history: the measure of the fact is still coming.

* * *

THE FRUIT HARVEST AND THE LABOR SUPPLY.

IT HAS required some speed to rise from Tiglath Pileser to the aftermath of the present war in a single paragraph, but we are still able to see things on the earth as well as in the clouds. And what strikes us as perhaps the most important thing on the California landscape at this moment is the mobilization of help for the deciduous fruit harvest which will begin this week with cherries and continue for about six months. Though there have been some local injuries by frost, there will be lots of all kinds of fruits and there has never been a year when prospective prices seemed to warrant putting every pound of it into some edible form as now. All kinds of sound dried fruits promise to be in demand at prices which will warrant putting time and money into securing them in good condition. If one has leisure time he should keep busy repairing and extending his tray capacity, sulphuring outfit, etc., and should make sure that he has tools and supplies ready to handle everything that ripens fairly and is not handled in fresh-fruit ways. He should also make sure whence his labor supply is coming. Much can be done in interesting women and children in neighboring towns by early offers of good pay for their work and arranging neat, sanitary lodgings and attractive eating and recreation places for them. If this is done in time, doubtless thousands can be beguiled from mountain and coast camping places and led to give the summer to fruit work with great advantage to themselves, to you and to the flag. It seems likely that the eight-hour day for women and children will be waived and all good workers allowed to make all they can if their living places are commendable. It is also likely that school vacations will be reasonably adjusted to the current need and that thousands of husky school boys can be interested in the heavier parts of fruit work. No time should be lost by individual fruit growers in forecasting their needs for help and taking steps to secure it, and no doubt a surprising amount of available help can be disclosed, if growers go about it early in ways to win. Fruit growers' associations also should push organized efforts in all directions. If growers go about it right, they can probably make much more money by saving the fruit between the rows than by the intercropping which the ex-

horters are so eloquent about. If every fruit grower goes about this matter the best he can, he will be in better shape to be helped by the wider work which the county committees of defense will undertake in all parts of the State, in case he should not be able to compass his own needs. So far as disclosed, the attitude of the labor organizations is likely to be helpful to the growers and loyal to the needs of the country in war time. It has been said for them that they are willing to do the work there is to be done and are disposed to leave until after the war some of the extreme points in length of hours and compensation which they have been contending for. The main point at once for the growers is to figure closely on the help they will need and get it if they can: to get all needed appliances and supplies beforehand and arrange for the decent care of the people who will work for them. Readers will be welcome to make practical suggestions along this line, that we may publish them for the general benefit of all concerned.

LOOK TO YOUR CONTRACTS.

WE SUGGESTED some weeks ago in connection with contract-selling, which is always easy when prices are up, that all readers should exercise due diligence that these elusive documents are something more than "scraps of paper." We repeat the warning because we hear that the country roads are full of smooth, rapid

people trying to get signatures to contracts for crops from plants which are not yet above ground—even from plants of which the seed is still in the sack. Of course, when one is to make extra effort and expenditures for a crop it is comfortable to have the buyer take the chances on a price which is sure to be profitable to the grower. We are not objecting to that, nor are we encouraging anyone to gamble as against a sure thing, though we do confess some admiration for the grower who has the courage to say: "It is my principle to sell a crop when it is ready." But when you are going on the sure-thing line you ought to be sure that the terminus is a sure thing! Some contracts are funny if one has an eye for the humor in them, but worse than that, perhaps, is a contract which is not a contract at all because there is only one responsible party signing it and that is you. Any selling contract is worth no more than the buyer who makes it—unless the price goes up, and then he may be able to sell it for more than his whole family is worth for movie actors. And if the price goes up the contract is a loss to the seller to just the same extent. Therefore, a seller should never make a contract unless he knows the contracting buyer is responsible and it is his business to find that out before signing. If you do not do that, you are up against this: if the price goes up he will find you all right; if the price goes down you can't find him; and if it is a matter of beans, you will know them next time.

When to Irrigate Prunes.

To the Editor: Kindly tell me the best time to irrigate prunes. The soil is a deep sandy loam. I have plenty of water now, more than I shall have in two months or more. The prunes are now as large as "bee-bee" shot. Would you advise irrigation now?—Grower, Chico.

The principal thing to secure in the timing of irrigation is to restore the soil moisture before the lack of it has induced the plant to reduce its activity and assume the preliminary phases of maturity and dormancy. To keep the plant awake and active through the season gives better growth and crop than to bring the plant back to action after slowing down. For this reason it is often necessary to irrigate without reference to the particular stages of growth in which the plant may be in. In your case, then, whether you should apply water now or later depends upon two things: First, whether the soil is now plentifully supplied with soil moisture or not; second, whether you must irrigate now, for fear you may not have water available later. In either of these cases irrigate now. Otherwise it would be better not to irrigate until the crop has passed through the spring drop and is seen to be well set for the season. In this, as in all other particulars, irrigation is a matter of fact and judgment about conditions and not a matter of rule or schedule.

Brown or White Gyp Corn.

To the Editor: Is brown Egyptian corn desirable to plant instead of the white, as birds do not damage it so much? How is it for stock feed in general as liking is concerned and for fattening hogs?—M. V. W., Fresno.

If you will read again the discussion of sorghum growing on page 298 of our issue of March 10 last, you will see that brown gyp is a good cropper, but not so good a feed because of the amount of tannin, which is liable to disarrange the functions of the animal unless fed with laxative foods like oil meals or alfalfa. For this reason the white grains are preferred and stock generally take to the more inviting grain more readily. Still, if the birds do not leave you enough white corn, you will be better off by growing the brown. Many growers make this choice.

Olives with Wet Feet.

To the Editor: Please tell me what is the matter with my olive trees, which are dying back. In the summer they stand in water for about three days when I irrigate. Would you cut them back?—W. H. D., Hemet.

Knowing nothing more about conditions than your statement imparts, we conclude that your trees are dying back because of root injury caused by standing water in the soil. If the water stands where you see it for three days it is probable that the soil is full of water and scant of air for a much longer period. This is liable to give almost any tree root-failure and die-back. Cut back the trees and apply hereafter just enough water to deeply wet the soil and no more. If the trees are in a dip, where water collects in spite of caution in applying it on higher lands, the place should be under drained to a depth of three or four feet to quickly draw away the surplus water.

Beans and Sorghums in Hills.

To the Editor: Please state how many seeds to the hill and distance of hills apart to cultivate both ways, with soy and tepary beans and for milo. Also depth to cover on moist, wet land which cannot be irrigated.—E. P. T., Pacheco.

Drop four or five seeds in hills 30 inches apart each way on such soil, or 40 inches apart on drier soils. Cover about two inches on such soil and three or four inches on lighter, drier soils. Of course, the seed must get down in moist soil, but do not cover too deeply at first—the soil can be leveled later by cultivation.

California Weather Record

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau at San Francisco for the week ending at 5 p. m., April 24, 1917:

STATIONS—	Past Week.	Rainfall Data.		Temperature	
		Seasonal To Date.	Normal To Date.	Max'm.	Min'm.
Eureka .....	.75	30.22	41.79	62	42
Red Bluff .....	.28	17.08	22.93	76	42
Sacramento .....	.42	12.81	18.71	78	40
San Francisco .....	.03	15.72	21.08	72	46
San Jose .....	.05	12.40	15.88	80	34
Fresno .....	.01	6.90	8.70	82	40
Independence .....	..	..	..	..	..
San Luis Obispo .....	..	22.54	19.06	76	34
Los Angeles .....	..	14.97	14.96	78	44
San Diego .....	..	9.74	9.44	66	46

By
the Editor

QUERIES AND REPLIES

Inquirer Must
Give Full Name
and Address

Excess Lime in Bordeaux Mixture.

To the Editor: Does extra lime used in making Bordeaux mixture reduce the strength of the bluestone?—A. G. T., Vacaville.

It does not. The function of the lime is to prevent injury by the bluestone to the leaves of the plant to be protected and still to release the bluestone with sufficient fierceness to destroy fungus forms. The formulas for the Bordeaux mixture represent the best ratio of bluestone to lime to accomplish these two purposes most quickly and effectively. If excess of lime is present the bluestone cannot be so quickly dissolved out of the embrace of the lime and the lime therefore delays the fungicidal action of the mixture and, in the the presence of moisture enough, continues such action over a longer period. It may be likened to the amputation of a dog's tail. If you use a dull knife it will take you longer to get through the hair to the real tail and then the knife will act through a longer period in getting to the other side of the tail. Dulling the knife cannot, however, be said to have reduced its strength—for the tail is just as surely off as though it went through with a flash. It is not the lime which reduces the strength of the mixture: it is reduced relatively by using a larger amount of water. But the use of much excess lime is not desirable: it delays action, and it makes spraying much more difficult. Excess lime is also more likely to flake off in dry heat and take the bluestone away from its job.

Planting in the Moon.

To the Editor: Will potatoes do as well planted in the light of the moon as in the dark of the moon, or is there nothing in the old tradition? I cannot get my ground ready before the 21st inst. and there is a new moon on that date, so am wondering if it will make any difference, or should I wait until after the moon fills?—Subscriber, Upper Lake.

There is a little advantage in planting in the dark of the moon because seeds planted then are up and the plants ready to take advantage of the small contribution which the moon makes to available light. Light is an indispensable factor in plant growth, whether it comes from the sun, the moon or, an electric bulb. But light is of no avail to a plant unless heat and moisture are right for its activity. Therefore it is far more important to take advantage of good conditions in the air and the soil than to watch the moon. Plant your potatoes as soon as you can and let the moon show the Germans which way to run.

To Make Large Apricots.

To the Editor: I have about 750 apricot trees, seven years old and twenty-five feet apart each way. About 500 of the trees are very heavily loaded. Is there any commercial fertilizer that could be used right away, so that I may have larger apricots from its use? If there is such a fertilizer, would you put it in the furrow before the irrigation or after the water has been used?—Grower, Hemet.

Such purpose as you describe can be well served by using two pounds of nitrate of soda and three pounds of superphosphate per tree. Scatter the mixture evenly over the ground occupied by the tree, beginning about two feet away from the trunk and extending about as far beyond the spread of the branches. Do this before furrowing for irrigation and whatever remains dry after the run of water will be covered into moist ground by the cultivation which should soon follow. Application in the furrows is apt to result in less equal distribution. Apply as soon as the fruit is seen to be well set. Of course, such treatment cannot be expected to enlarge all the fruit which may be set on a tree. Proper thinning must be done, if necessary, to give three or four inches distance between fruits, and the tree must have plenty of soil moisture to bring its crop to good size.

Grinding Vine Prunings.

To the Editor: Has anyone ever made a brush grinder to powder grape prunings for the benefit of the soil, instead of burning, as we do now? The idea I have is that someone has invented an implement that can be driven through the vineyards, grinding the brush as it goes, and the ground prunings dropped to return to humus. Has this ever been done?—W. M., Fowler.

We have recorded in previous issues that cutters for prunings, like hay or straw cutters, have been mounted on wagons and operated in reducing both vine and citrus tree prunings to inch lengths and scattering them for plowing under. We have not at present information as to how long they have been used nor how valuable the practice has been found to be. Such information would be interesting. Theoretically it is a very close question as to whether such material is actually worth the investment and labor which it requires to reduce it to available forms. Our judgment is that it would not be practicable to grind sappy stuff without drying and that it would not pay cost and operation of the mill, labor and power required. Who can claim otherwise from experience?



[Written for Pacific Rural Press.]

Whether all prune and apricot growers shall indefinitely share the price of their fruit with speculators who hold down prices and do not provide for the greatly increasing acreage, depends on a great many growers of small acreage who must join the Association before May 1 or be responsible for calamity to all the rest. Calamity it will be, not within a year or two, but when the orchards recently planted shall have come into bearing.

If 75 per cent of the bearing acreage is signed up May 1, all members will receive 4 and 8 cents on delivery for prunes and apricots respectively; and as soon as the fruit is sold will receive all the remainder

that it sold for, less a very small proportion for Association expenses. Advertising and consistent marketing endeavors will increase the demand.

Cash subscriptions are not worrying those who have been elected the leaders; for the required amount is already nearly subscribed.

But the acreage is not. The trustees will meet April 30 to determine whether the required 75 per cent has been secured.

Meanwhile it is up to every believer and every member already signed up to sacrifice a day or two in urging unsigned neighbors to aid

in this insurance of prosperity for future years.

Orchard owners especially must realize that the high value of their investments depends on the organization.

Much money has been spent, much valuable time has been freely given, to safeguard in this way the industry that involves an annual turnover of \$15,000,000 in California.

If you have been hollering about the middleman, it will be to your everlasting discredit if you do not seize this opportunity to eliminate the unnecessary middlemen in the prune and apricot industry. If you devote the next two or three days to consistent work with unsigned growers, you will always be proud of your public spirit.

Summer-Prunes Vigorous Apple Trees

[Written for Pacific Rural Press.]

"While apple trees are young and vigorous, I would certainly summer-prune them," says J. W. Fulton after his experience on a four-year twenty-acre orchard in the Yucaipa district.

It greatly reduces the waste wood to be removed in winter, besides directing the growth of the tree as desired. Thus it really adds strength and size to the tree. The winter wounds are smaller, easier healed over, and less likely to be infected with decay fungi.

The orchard includes ten acres of Rome Beauties and ten of Stayman Winesap, Arkansas Black, Black Ben, Vanderpool Red, and two rows in which are 86 varieties. It is irrigated from pumps.

The Summer Pruning is done at two times—in June and again in August. At the first pruning, the new growth is eight or ten inches long on the average. It is not cut back, but thinned out lightly and quickly to keep the trees open enough but not to allow sunburn. Suckerous growth especially is removed. The only cutting back at that time is to direct the growth of undesirably-pointed limbs into another direction. Rome Beauty especially is hard to spread enough, so all cutting back is done to an outside bud. The Winesaps naturally spread, and may need directing upward. A branch may be growing in a direction where it would cross

another by winter and have to be taken out then. There is much less wasted energy if it is cut out early. Late in August comes the really vigorous pruning, when the new growth is two to four feet long. It is cut back and thinned some more. Then in winter there is only some small brush to cut out. The Rome Beauties produced 250 boxes of apples last year.

In the first years of Mr. Fulton's trees the wood was not cut back enough, and it produced too many laterals, which would make the tree overbear if allowed to remain. Many of these had to be sacrificed by cutting the limbs back at a later time to the right length. The time will come when the trees will not produce excessive growth, and then summer pruning will cease.

R. N. Boggess, also of Yucaipa, does not get so much growth after winter pruning as his neighbors, who prune more severely, but he thins out the new shoots soon after they come, and keeps it up as they come all summer. This also keeps the tree's energy going principally into those branches which are to be permanent.

G. E. Jenkins, who pruned young apple trees for fruit-wood two years ago by cutting the inside growth to stubs three or four inches long, found it necessary to go over the trees three times the following summer to thin out the shoots and suck-

ers. Last summer there were only a few suckers to take out. This left the orchard with a heavy setting of fruit-wood last winter.

A record of costs of operation helps tell where the leaks are.

Aphids cannot be commercially controlled on trees after they have curled the leaves over themselves.

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NORTH WHITTIER HEIGHTS CITRUS NURSERIES. PUENTE, CALIFORNIA

Plowed Walnut Cover Crop in May.

[Written for Pacific Rural Press.]

Why people who have plenty of spring irrigation should be in a hurry to plow their cover crops under, seems rather hard to learn. Very often over half the value of a winter cover crop is not obtained, because after spending the labor and money of seeding, people plow the cover crop under when half mature. A. M. Hoefer of Orange County is one who last year got full benefit of the cover crop by not plowing until May as planned when our representative visited him in February. He has an orchard of 12-year Santa Barbara Softshells with an 8-year Valencia planted in the center of each square. (He would not do this again on account of inconvenience.) There are six rows of walnuts about 650 feet long. In May, before plowing, Mr. Hoefer planned to run water through the 16 furrows per center,

for two weeks if necessary, to soak it well. Then he expected to plow under the maximum desirable cover crop growth (which was melilotus indica two feet tall in mid-February). After plowing and working the land down, he expected to irrigate as usual, three times. Four furrows each side of the orange trees and a couple of feet apart would be used for the first two irrigations. About 25 miner's inches would run through all 48 furrows in about 36 hours, as he would turn small streams into each. The last irrigation would extend clear up to the walnut trees. This would give them a thorough soaking which would help make the hulls pop open at maturity. The land is a sandy loam in which the water soaks downward faster than sidewise, so it needed much additional humus.

Value of Frozen Oranges.

[Answered by E. M. Chace, Citrus By-Products Laboratory, Los Angeles.]

To the Editor: What is the value of frozen oranges as fertilizer? About what per cent of oranges were frozen last winter? What by-products are manufactured from frozen and cull oranges, and is there a factory in the State for same?—A. A. B., Reedley.

Frozen oranges have some value as a fertilizer, but the weight of opinion seems to be that they should be neutralized with limestone or other alkaline material before being placed on the ground. In order to move the fertilizer from the place of manufacture to the grove, it must be more or less dried, which tends to raise the cost to such an extent that it is questionable whether any saving could be accomplished.

The Exchange By-Products Factory at Corona, Cal., for some time gave their waste lemon pulp to growers in that vicinity who were willing to haul it away from the factory. At

present, I believe, they are drying this material with a view to its utilization as a fertilizer. With by-product factories the problem of disposing of the waste is rather serious, and if it can be utilized as a fertilizer they will certainly do so.

Where frozen oranges have not become desiccated, they may be used in the manufacture of vinegar, and the peel may be dried, candied, or put up in brine. There are several factories in Southern California which are utilizing cull fruit in the manufacture of orange peel, but it would not be possible to transport the fruit from Reedley to the southern part of the state for this purpose. I know of no by-product factory in Central California.

[Probably not over five per cent of the oranges of the state were frozen last winter.—Editor.]

GRAPE ROOT WORMS.

[Written for Pacific Rural Press.]

Were your grape leaves last season laced with long narrow spots eaten from their surfaces, and perhaps the grapes marked with long narrow brown blotches? These marks

were made by the black or brown beetles which are the adults of the grape root worms. These work underground all summer after some time in June. The adult beetles emerge from the ground in May and do their damage while preparing to lay their eggs.

The adults on vines "play possum" when disturbed, and drop to the ground. This is the means of their destruction as described by Horticultural Commissioner H. H. Ladd of San Joaquin County. Two sheets of galvanized iron about 2x4 feet are notched at the center of one side of each so that when placed under a grape vine, they fit close together with a hole in the center for the vine. The upper surfaces of these sheets are smeared with crude oil. The sheets are shoved carefully under the vines, and the vines shaken to induce the beetles to fall into the oil. They can then be destroyed at leisure. This is best done when most of the beetles have emerged from the ground but before they have damaged the fruit.

Don't leave borers in your fruit trees. Inspect them for the frass at the base of their trunks, and when you find it dig the worms out with wires. Then cover the wound with asphaltum, grade c or d, to keep out others.

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Fruit, Grain, Hay, and Field Crops Report

[Written for Pacific Rural Press.]

A study of the report below will show very short crops in the State as a whole, for almonds and apricots due to frost. Seriously short grain and grain hay crops are due to drouth and there is a marked advantage for that sown early on summer fallow. Shortage of alfalfa is due to late-continued cold. Potato acreage planned will not exceed last year, but bean acreage may easily be double that of 1916. Wherever water is available, sorghums and Indian corn will be planted.

The detailed reports given below and segregated according to crops, have been gathered largely by our large force of men traveling all over the State; but in addition, we wish to thank the many subscribers and friends whose letters have supplemented and corroborated the observations of our staff. The reports embodied below were generally made late in the week ending April 23.

Almonds.—Butte, 20 per cent. Colusa, not frozen so hard as previously thought. Contra Costa, 80 per cent, frost in limited areas, Antioch and Brentwood good. Riverside, Hemet look good. Sacramento, 30 to 50 per cent of normal due to very heavy rain in blossom like that of three years ago. San Benito, normal condition. San Bernardino, good. San Joaquin, good. Stanislaus, good setting. Tehama, 25 per cent.

Apricots.—Alameda, Haywards hurt by frost and dieback. Niles, good. Contra Costa, 40 per cent due to frost. Fresno, hurt some by frost. Kerman, very light, due to frost and bud drop. Kern, hit hard. Kings, cut to 50 per cent by frost April 15. Los Angeles, about 40 per cent, damage in various localities. San Fernando, fair in spite of frost April 16. Orange, good. Riverside, spotted, Hemet district will total good crop barring future troubles. San Benito, 60 to 80 per cent. San Bernardino, good. San Joaquin, some damage, not many grown. Santa Clara, averages very light, very spotted, better in higher parts than on floor of valley, southern end wiped out by frosts to and including April 18, and by brown rot before that time. Santa Cruz, average crop expected in spite of brown rot damage. Solano, short. Stanislaus, heavy setting. Tehama, 25 per cent. Tulare, 10 or 15 per cent, but few grown. Yolo, Winters thought crop wiped out, but now expect 50 per cent.

Apples.—Contra Costa, 100 per cent. Napa, very good. Sacramento, Astrachans 100 per cent. Santa Cruz, better prospects than for years at this season. Sonoma, fine prospects, though some varieties still in bloom, probably none hurt by frost.

Cherries.—Napa, normal, but not heavy. Placer, Knights 50 per cent, Tartarians, 60 to 80 per cent. Royal Annes 75 per cent. Black Oregons, Bings, and Lamberts 100 per cent. Sacramento, two sizes in

certain places, smaller ones still in jackets and will drop, unpollinated due to rain during blooming. San Benito, full crop promised. Santa Clara, rather light. Santa Cruz, fine condition. Solano, slight loss. Sonoma, about half a crop of first size have shed jackets, estimated Royal Annes 40 to 50 per cent loss by frost, blacks 30 to 40 per cent loss.

Peaches.—Butte, 20 to 25 per cent, account frost. Contra Costa, 80 to 100 per cent, no frost injury. Fresno, good prospects generally in spite of frost. Kerman, fair. Kern, 50 per cent. Kings, 75 per cent or worse, due to frost. Placer, Alexanders 75 per cent, Hales, Triumphs, Early Crawfords, Salways, Lovells, Hulls, Midsummers, and Levys 100 per cent. St. Johns 50 per cent. Elbertas 50 per cent where affected by curl leaf, 100 per cent elsewhere. Riverside, average crop. Hemet, good. Sacramento, shipping and canning varieties set above last year's full crop. San Bernardino, good. San Joaquin, good. Santa Clara, killed in southern part by frost. Shasta, 40 per cent. Stanislaus, heavy setting. Tehama, 100

Sugars and Standard 100 per cent. Sacramento, normal, though can't forecast prunes which still in jackets. San Benito, prunes bloomed well. Santa Clara, discouraging prospects, wiped out in southern end April 18 by frost, except half of the French prunes. Santa Cruz, fine condition. Shasta, if prunes now green and growing should all stick the trees could not hold them; frost April 14 and 15 did less damage on plowed orchards and less everywhere than if it had been preceded by warmer weather; loss 10 to 50 per cent. Solano, Grand Dukes and Diamonds damaged by frost. Sonoma, prunes still in jackets but prospects fine. Tulare, fair crop plums and fine prospects for prunes. Tehama, prunes full of good bloom.

Beans.—Kern, over 50 per cent increase in acreage. Madera, larger acreage. Marin, some being planted for market. Merced, acreage about same as last year. Monterey, acreage expected to increase 100 per cent, to 19,000 acres. Napa, increased acreage. Riverside, big acreage. Hemet, 400 to 500 acres teparies and bush limas signed up

age. Riverside, big planting. Sacramento, 3,500 acres. San Bernardino, over 2,000 acres and good prospects. San Joaquin, less than last year expected, perhaps 25,000 acres, some damage last week's frost. Santa Cruz, usual acreage. Shasta, crop normal, but never supplies local demand. Stanislaus, some frosted last week.

Tomatoes.—Merced, heavy planting, one company has 500 acres for Atwater Cannery. Riverside, Hemet, big acreage promised. Sacramento, 1,300 acres. San Diego, Escondido, large acreage for proposed new cannery. Sonoma, probably 200 per cent greater acreage than ever before, found advisable to increase by 5,000 acres, efforts of canneries to contract show plenty of cans.

Grain and Grain Hay.

Alameda, Pleasanton, hay good condition, last year's about gone, little at hand selling \$32 ton; Livermore brown, poor condition except on summer fallow; Tassajon fair; San Ramon and Altamont poor; Tracy getting brown. Contra Costa, unless showers within week hay crop will be less than last year; barley good on Delta, but retarded by cold weather; wheat acreage very limited, needs rain. Fresno, Kerman unirrigated practically failure, irrigated about half a crop; Imperial barley crop estimated 250,000 sacks against 400,000 last year; much being cut for hay which is normal crop except late sown which damaged by aphids. Kern, 50 to 100 per cent depending on rains from now on; wheat not suffering yet, one tract 2,000 acres looks as good as last year when it made 12,000 sacks; same acreage as last year. Tehachapi, crops look fine. Kings, hay 75 per cent normal. Los Angeles, San Fernando, grain looks better than anywhere north of Tehachapi. Madera, acreage larger than normal, 60 per cent crop, wintersown very poor, summer fallow will make fair crop without more rain, hay crop light. Marin, hay helped by rains since April 11, will be 30 per cent below normal, grain early planted heading out, but late planted was held back by cold, even to mid April, giving it time to stool out, rain April 21 insured fair crop; about 2,000 acres to be cut for hay. Merced, very poor unless rain in April, except on summer fallow which is good, practically no hay. Monterey, failure in southern part and light all over due to lack of April rain. Napa, never better color for the time of year, though not so forward as some years. Riverside, fair, mostly cut for hay. Beaumont and Banning, 75 per cent barley crop for grain. Hemet, San Jacinto and Perris, only 50 per cent, which may be increased due to rain April 16, which was almost too late. Sacramento, 100,000 acres hay and grain, normal crop, conditions very fair. San Benito, last year's hay nearly all sold, now \$29 ton, need rain for grain and hay; in the valley prospects are for 50

SHIPPING FRUIT PROSPECTS BRIGHT EXCEPT FOR LABOR.

The shipping fruits marketed this year will be 1,000 cars short of last year's total of 16,973 cars in the judgment of F. B. McKevitt, due principally to frost damage, and practically none at all to diseases or insects that have yet appeared. The Eastern market will take everything of good quality that we can send, and pay good prices. The refrigerator car shortage of last year has been remedied by the addition of 4,000 cars by the Southern Pacific; so movement of the crop is now only a question of motive power. There may be trouble in transportation due to movement of troops, munitions, and provisions; but the greatest danger now lies in not having labor enough to harvest and pack the fruit when it is ready. Something must be done quickly or a short crop would be better for us than a large crop. France and England have had to import labor and we must have cheap labor or our fruit will rot. It is believed by Mr. McKevitt that fully one-third of the cost of raising a fruit crop is for labor, and with the narrow margin on which fruit growers generally are operating, the very probable rise in labor costs will wipe out their chances of making a living.

per cent, severe frost April 15-16, but if half of peaches killed would still leave good crop, some orchards uninjured. Tulare, full crop except few low spots and exposed places.

Pears.—Contra Costa, 100 per cent unless heavy drop. Napa, very good condition. Placer, 75 to 100 per cent. Sacramento, biggest setting ever, 110 per cent. San Benito, full crop. Santa Cruz, fine condition. Shasta, good. Tehama, 100 per cent. Tulare, fine.

Plums and Prunes.—Butte, prunes 40 to 60 per cent, due to frost. Contra Costa, 50 per cent of Jap plums did not set, prunes in fine shape, cannot predict until May. Kings, damaged by frost. Napa, normal but not heavy. Placer, Clyman and Tragedy 100 per cent, Red June 50 per cent, Beauty 25 per cent, Formosa 50 per cent, Climax 50 to 90 per cent, Santa Rosa 50 per cent, Botan. 25 per cent, Burbank 50 to 100 per cent, Kelsey and Wickson 15 per cent, Gaviota 25 per cent, Diamond 100 per cent, Dukes 40 per cent, Giants 100 per cent, Hungarians 50 per cent,

for one firm alone. Sacramento, 2,000 acres more than ever before, totaling 22,000, mostly pinks, bayous, cranberries, and large whites, according to best locations for each. San Bernardino, extra acreage. San Joaquin, not yet planted, but all available acreage will be. Ripon, heavy planting, pinks, teparies, and Lady Washingtons. Manteca, heavy acreage, blackeyes and teparies, 17,000 acres expected in county. Shasta, considerable acreage, one man to plant 100 acres pinks. Stanislaus, largest acreage in history expected, mostly teparies, blackeyes, and red kidneys. Turlock, last year 3,000, this year estimated 12,000. Sonoma, bean acreage to be increased about 200 per cent, but seed is short. Tulare, considerable acreage, teparies popular.

Potatoes.—Alameda, large acreage will be planted. Contra Costa, spring crop small acreage, nine-tenths of Delta crop still to plant. Kings, 100 per cent increased acreage, frosted some. Madera, Chowchilla larger acreage. Marin, being increased 100 per cent, to about 1,200 acres. Monterey, heavy acre-

to 75 per cent hay crop. San Bernardino, 50 per cent crop barley hay. San Diego, three-quarter crop barley and oats. Mission Tia Juana San Pasqual, and Poway Valleys, suffering hay shortage. San Joaquin, wheat, barley, and rye 60 per cent normal condition, but 125 per cent normal acreage will bring crop up to normal; dry, but cool weather favorable; west side suffering most for rain; generally good on heavy soil; hay crop short, no volunteer. Turlock, report 6,000 acres will be cut for hay to be followed with beans. Ripon, fallowed grain good, west side poor. Manteca, fair generally, good on summer fallow, last season's crop about gone, price \$32 per ton. Santa Clara, southern part needs rain badly in order to mature either hay or grain. Shasta, two inches of rain about April 14, crop normal due to previous showers as well. Stanislaus, east side fair but needs rain, no hay except in irrigated sections; winter sown barley will scarcely make seed but summer fallow promises well. Large acreage in Waterford, Hickman, La Grange, and Montpelier districts. Sub-irrigated grain very backward, may not be cut in time to raise another crop. Denair, very poor. Sonoma, backward, but good color and the April 21 rain will help much. Tehama, barley looks good except late seeding, and with increased acreage promises 15 or 20 per cent greater crop around Los Molinos than last year; wild hay ahead of alfalfa owing to

cool weather. Tulare, short unless rain soon except summer fallow. Delano, some fields already lost, Earlimart fine.

Sorghums and Indian Corn.—Alameda, large acreage will be planted. Kern, 50 per cent increased acreage, everybody planting as much as they have water for, will be about 50 per cent increased acreage, seed corn 7 cents Bakersfield, may hold acreage down. Kings, large acreage. Madera, large acreage milo, feterita, etc., to be planted, total about 1,000 acres Egyptian in county. Merced, large acreage Egyptian. Napa, interplanting in orchards where interplanting had ceased. San Joaquin, 13,000 acres, Manteca, heavy acreage kafir and sorghums. Stanislaus, large acreage. Tulare, large acreage Egyptian.

Alfalfa.—Fresno, Kerman, acreage 4,000, first crop light due to cold spring. Imperial, first cutting proved half of normal, due to late cold weather. Los Angeles, Orange counties decidedly short crop. Sacramento 400 acres increase. San Diego, too short to cut. San Joaquin, full crop, but two weeks late. Ripon, first cutting in shocks. Manteca, less acreage than last year. Stanislaus, one crop short for season, first crop cut but short and not much in it; acreage much less than usual, three weeks late. Tehama, very late and first cutting will make only 50 to 85 per cent, crop of poor quality. Tulare, considerable new planting around Earlimart.

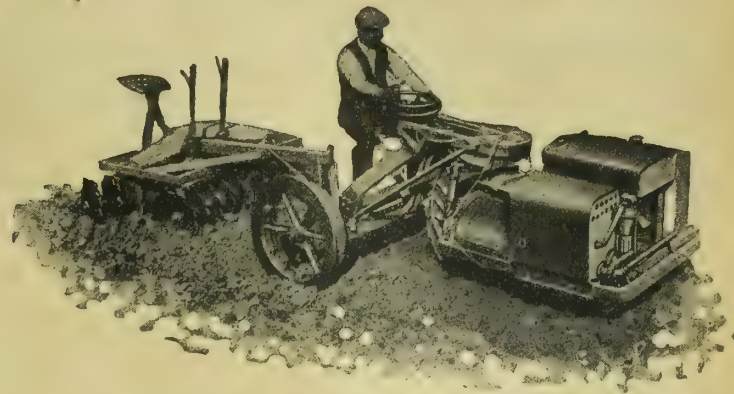
Pasture.—San Benito, 25 to 50 per cent in the hills. Madera, rain in fileree section in hills 30 miles from Madera helped feed. Marin, very short due to cold dry winter, necessitating reduction of dairy herds 15 to 20 per cent.

HOGS AND SUNFLOWER SEEDS.

Dr. W. E. Taylor, in charge of investigations for the Deere Implement Company, writes: My attempt to fatten hogs on sunflower seeds was not a success. The hogs did not relish the feed, regardless of how I mixed it with other feeds. It caused their bowels to be loose, but the most marked effect was on the kidneys, causing frequent and copious urination. Those that were forced to eat the sunflower seeds for a period of ten days, lost in weight and exhibited symptoms of stomach trouble.

Fine rain approximating an inch average along the eastern half of the Sacramento Valley fell about April 21, being lightest (about ½ inch) where it entered the valley in San Joaquin and Sacramento counties and increasing as it went north. The west side received less, Oroville having had 1¼ inches while Chico recorded only ¾ inch and Orland 1-3 inch. Coast counties north of the bay were well drenched, an inch being recorded at Santa Rosa, according to the United States Weather Bureau. This practically assures a reasonably good grain crop, etc. as it follows occasional preceding showers, one of which in mid April gave over a half inch from Colusa to Red Bluff.

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For sale by all progressive dealers. Or, send us \$11.00 for vineyard size—\$13.50 for orchard size. We ship all charges paid. Try it a week. If not pleased, return at our expense, and we will refund your money.

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Repelling Rabbits from Trees and Vines.

To the Editor: What spray can be used on young vines to keep rabbits from eating them?—E. L. N., Reedley. Ditto for young prune trees?—A. W. J., Saratoga.

Poison sprays are rather ineffective because the shoots soon grow out where they may be attacked. Arsenate of lead paste four pounds per 100 gallons of water, is most promising. Poisoned bait that rabbits like might get them.

Repellant applications will probably be more effective. One of the handiest of these is to kill a few rabbits, split their carcasses and rub them up the trunks. This is effective

for a month. One rabbit was enough for 10 acres of trees which G. B. Abbott of Tehama County treated that way; but he did not do it thoroughly enough to keep rabbits out of the orchard, which is your problem. Blood sprinkled around the out edges of the orchard is a sure remedy according to one of our subscribers; but it may also repel you. Perhaps dried blood fertilizer would work and benefit the land at the same time. Rancid grease mixed with whitewash is repellant and protects trees from sunburn too. Swabbing the grease on the trunks would repel the rabbits until the smell is gone.

Gooseberry Mildew.

B. Panten of Kazmierz, Posen, reports that a 1 per cent solution of 40 per cent formalin, thoroughly applied in the early spring and again before the period of blooming, effectively controlled American gooseberry mildew.

It is stated by J. V. Eyre and E. S. Salmon in Jour. Bd. Agr. that an ammonium sulphid solution containing 0.18 per cent of sulphur can be recommended for commercial use on an experimental scale for the purpose of protecting the fruit of

gooseberries against the mildew. Lime-sulphur wash should be employed for early sprayings until such time as its use would affect the marketing of the berries, when the ammonium sulphid solution should be substituted. It is stated that solutions of liver of sulphur at the strength usually considered as fungicidal are inefficient against the disease, while concentrations which are fungicidal cause such severe scorching of the gooseberry bushes as to preclude their use in this connection.

Fertilizer for Weak Fruit Trees.

[Written for Pacific Rural Press.]

The best method of applying nitrate of soda to orchards is to spread the dry crystals broadcast under the trees on moist ground, and harrow soon afterward, as indicated by experiments at Oregon Agricultural College. The fertilizer must be dissolved and put in reach of tree roots before it does any good.

Where old trees are weakened, as shown by thin foliage, little leaf, dieback, etc., six pounds nitrate of soda per bearing tree are recommended for the first year, and not over three pounds the next year on ac-

count of overstimulation of wood growth.

A Napa County orchardist has about 900 three-year prune trees, scattered among which are 25 which failed to show vigor this spring. If there is no crown gall or similar disease, about 1½ pounds nitrate of soda or a little over a pound of sulphate of ammonia may be applied in a broad shallow trench two or three feet from these trees and water used to dissolve and carry it down to the roots. This will probably enable the weak trees to catch up with the others by mid season.

Sudan Grass Among Almonds.

To the Editor: I have five-year almond trees on five acres of nearly level, rather heavy loam. Frost got all the almonds, so I want to sow sudan grass between the rows, keeping it six feet from the trees, which are 24 feet apart. The land is patched with morning glory, but is in good condition. Will the morning glory and shade of trees affect the sudan grass like corn? Will this make good horse feed? If any goes to seed will it be a pest? I have no irrigation. Will an ordinary grain drill do for seeding or should I broadcast it? When should it be sown?—T. C. G., Concord.

Sow with grain drill, stopping enough holes so the rows will be

about a foot apart. Cover about 1½ inches. Cultivate it to conserve moisture until you sow, any time in May, and cultivate after it comes up. Use at the rate of about six pounds per acre. It would take twice that much if broadcasted. No danger of its becoming a pest if you have pure seed. It makes fine horse feed. Morning glory is likely to affect it like corn. We do not know about the shade, but your trees won't prevent its growth. Your trees should be your first consideration. Plant only six or eight feet wide in the middles.

their trees do better as a result.

The young pear orchards on this place are located on bottom lands, where there is sufficient moisture without irrigation. Early in April, Superintendent Vandever had a disk cultivator breaking up a thin crust that had formed from recent rains. This was to be followed by a good, deep plowing before planting the centers to Mexican Red beans between April 20 and May 15.

A large acreage was to be planted

to milo the latter part of April on land that is to be set out to olives next year, the theory being that clean and frequent cultivation all season will leave the land in good condition for the trees. Milo is preferred by Mr. Vandever to kaffir corn, because the stalks as well as the heads can be utilized for feed, while those of kaffir are dryer and not liked by stock so well.

CABBAGE WORMS.

The common cabbage worm, the most destructive insect enemy of cabbage and related crops in the United States, begins its depredations as soon as the young plants are set out in the spring. Steps to combat it should be taken at an equally early date. These are pointed out in Farmers' Bulletin 766 of the United States Department of Agriculture, "The Common Cabbage Worm," by F. H. Chittenden.

Spraying with a solution of two pounds of powdered arsenate of lead, four pounds of arsenate of lead in the paste form, or one pound of Paris green to 50 gallons of water should be begun as soon as the plants are set out and should be repeated as often as examination of the plants shows it to be necessary. Sprays should be applied in a fine mist, since coarser applications tend to gather in drops on the leaves and run off.

ROTATION FOR SUGAR BEETS.

At least four or five years' and preferably six years' rotation of crops is recommended by the U. S. Department of Agriculture in Bulletin 772 as a means of controlling the sugar beet nematode, a pest which has been known to close a number of sugar beet factories in Europe, and which is already sufficiently prevalent in the United States to be a serious menace to the industry. Rotation crops recommended for California and Arizona are cow peas, soy beans, sweet clover, rye, millets, tomatoes, asparagus, lettuce, cantaloupe, strawberries, barley, corn, Lima beans and wheat.

WATER FOR VEGETABLES.

Three inches of water (about two gallons) on every square foot will wet the soil about one foot deep, according to the Agricultural Experiment Station at Pullman, Washington. By applying this rule to the following depths at which some of the common vegetables feed, a fair idea of the amount of water to apply may be arrived at: Corn, six feet; potatoes, four feet; peas, five feet; beans, three and a half feet; beets, three feet; and carrots, three and a half feet.



Healthy Vegetables

The U. S. Dept. of Agriculture recommends that you rid your seeds and soil of infection before planting, with the greatest known disinfectant—

FORMALDEHYDE
"The Farmer's Friend"

It prevents potato scab and black-leg that attacks beets and other vegetables. It guards against onion rot and onion smut and smudge, cucumber root rot. It prevents mould in celery, lettuce, parsnips and other covered seeds when applied to the beds before planting. One pint bottle of our Formaldehyde costs 35 cents. Big scientific book with full directions sent free upon request.

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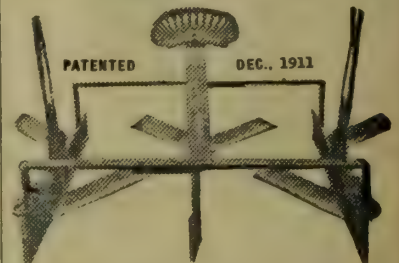
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Farmers, order early if you want the Golden Gate Weed Cutter and Mulcher, as the demand this year will be great, as it not only cuts weeds, but kills them, and leaves finely pulverized top soil. Cuts any depth. Prevents evaporation by working under the soil without disturbing soil on top. Write for circular.

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INTERCROPPING YOUNG ORCHARDS WITH BEANS AND MILO.

[Written for Pacific Rural Press.]

Besides the additional profits which arise from the growing of such summer crops as beans and milo in their young pear and olive orchards in San Joaquin county, the New England-California Corporation find that such summer crops keep their ground in fine cultivation before and after planting; and that

Raise More Corn in California.

[By E. J. Luke, Manager Sperry Mills, Stockton, Corn Day Demonstration, March 31.]

Gentlemen: This little demonstration is the result of about a three years' campaign on our part to get the farmers of California to raise more corn. Until three years ago the Sperry Flour Company was using 500 tons a month; 95 per cent of these 500 tons was brought in from the Middle Western States, at an additional cost of \$11 a ton for freight. This year we used about 700 tons right here in Stockton. We want to buy all that corn right here if we can. We know that corn can be raised in California. If the Eastern farmer can raise corn, pay \$11 a ton freight and make money, the California farmer, with only about a dollar a ton freight, can raise corn and make it pay.

A question has come up whether it is possible to raise too much corn in California. The Sperry Flour Company, using 1,000 tons a month in its entire system, is only a small unit in the State of California in the use of corn.

GOOD SUMMER FALLOW VS. ANNUAL BARLEY CROP.

[Written for Pacific Rural Press.]

"This country needs summer fallow for grain, and it ought to be real summer fallow," says M. Barnett of central San Diego County. Mr. Barnett got a barley crop as tall as he is, while across the fence barley sowed the same day headed out a foot high. Mr. Barnett's 40 acres had been plowed a foot deep in the winter of 1913-14 and worked down all summer. When weeds started in the spring the ground was cycloned twice to prevent their use of the stored-up moisture. In December, 1914, it was broadcasted and harrowed, the ground being already loose on top from cultivation, but well compacted underneath. This barley was pastured in the fall of 1915 and the ground disked in January, 1916. The volunteer crop produced a ton of hay per acre. Across the fence, the land had been rented and cropped every year, yielding not much of a crop for several years.

FARM ACCOUNTING.

Keep a record of all farm expenses and receipts.

Keep a record of all the man and horse labor.

Have a separate heading for all finished products.

Cross enter all farm products that

New Jersey, with an area of 5,260,000 acres, last year raised 22,550,000 bushels of corn. California, with an acreage of 100,000,000, raised 2,160,000 bushels.

While a great deal of Eastern corn is shipped in here in bulk, it is nothing compared to the manufactured article brought in here. If you will give us the corn, it will enable us to meet the competition of the Eastern manufacturer; and the State of California as a whole is going to be benefited. Again, you not only have the State of California for your market, but Washington and Oregon to ship corn into, because they buy all their corn from the East.

We paid out \$140,000 for corn from December 1, 1915, to April 1, 1917, and this \$140,000 stayed right around Stockton. Now we figure that the nearer home we keep a dollar the quicker we will get it back again.

are consumed. For instance, silage is a receipt in the corn column and an expense in the cattle division.

Charge the labor used to produce each product at the end of the year to the various enterprises.

The difference between the receipts and the expense, plus or minus the difference between the inventories at the beginning and the end of the year will be the total gain or loss.

ANALYZING FARM BUSINESS.

The office of Farm Management of the Department of Agriculture has provided, in Farmers' Bulletin 661, blanks for use in analyzing a farm business in such a way that the farmer can readily ascertain the various sources from which he derives his income, the ways in which he spends his money, the total income from the farm, and the amount which should be charged off for interest on his investment. About one-third of the farmers who have analyzed their business in this way are now keeping books, it is said.

Oil of the soy bean is a palatable food widely eaten by the Chinese. This vegetable oil also is used in making paints, varnishes, soaps, rubber substitutes, linoleum, waterproof goods, lubricants, and printing ink.

Sweet Clover to Kill Water Grass

To the Editor: The water grass problem is a serious one in the rice fields. If by any chance a hardy crop like melilotus alba (white sweet clover) should solve it, it would be worth a great deal to the rice farmers. Our idea is to grow the sweet clover, and sprout the water grass along with it, cutting frequently and, if possible, just before the water grass seeds. If that will work, it will eventually put an end to the pest, when its seeds have all sprouted. From what we can learn of sweet clover, it will grow on land that is too wet for alfalfa, and endure extremes of temperature, dryness and other unfavorable conditions.

We have found this clover growing here in wettest places, as well as dry. Have pulled it up within the last few days and found long carrot roots, with more or less fibrous roots also, and all covered with nodules of nitrogen. In fact, the roots are bulky and bound to loosen up the soil; and I believe will prove of great value in renovating land that has been rice and flooded for several years.

The idea of planting sweet clover in the rice fields came from C. F. Penniwell of the Westroac Co. of your city, who has done a lot of work experimenting with legumes for all kinds of soil betterment; and, in my opinion, is entitled to a lot of credit for encouraging the cover crop method of fertilizing.

Penryn.

H. E. Butler.

We are facing a world wide food shortage. For the sake of the hungry world as well as for the good of your bank account you ought to make every foot of your land produce its utmost. You can't possibly do this without fertilizing. Germany's crop failures for the past two years have been largely due to her inability to secure proper fertilizer materials.

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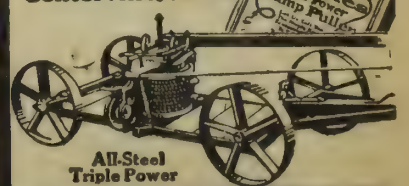
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Sudan Grass for Quick, Heavy Hay Crop

[Written for Pacific Rural Press.]

Hay seems likely to be scarce and high priced this season. Phenomenal alfalfa prices the past winter and spring have not prevented plowing out large acreages of this crop to plant beans, potatoes, etc. One of the largest seed houses reports selling 25 per cent less alfalfa seed in California than last year. The high prices of grain will discourage the making of grain hay where grain seems likely to mature. Wild grasses have been pastured to the limit and not much will be left to dry for summer forage. Yet we have reports of an increased number of hay-eaters in the State.

To him who would get a hay crop in June by planting early in May, or pasture two or three weeks earlier, Sudan grass offers most inviting prospects if planted after frost is past.

With hot weather and irrigation every two weeks, it makes mature hay in forty to fifty days, according to D. C. Aepli of the Yuma Experiment Station. He also says it can be pastured any time after three weeks from seeding.

Sudan grass was brought to the United States because of its drouth resistance. Whether you have irrigation or not, and whatever soil you have, but will yield almost as much per year as well established alfalfa; and more than newly planted alfalfa. Being harvested in fewer cuttings, it requires less labor.

The seed this year is scarce and high priced, being quoted at 35 to 50 cents per pound. About six pounds per acre are required to drill in rows 18 to 24 inches apart. If broadcasted, 16 to 24 pounds of seed and much more water are needed. Cultivation of drilled rows saves water. Drill three-quarters to two inches deep, according to soil and moisture.

Feeding Value.

Sudan hay, cut in full bloom, makes the best quality of hay, according to the United States Department of Agriculture. Such hay was analyzed by the Oregon Agricultural College. It contained 3.51 per cent moisture, 5.64 per cent ash or mineral matter, 1.27 per cent fat, 4.66 per cent protein, 49.3 per cent carbohydrates and 35.62 per cent fiber. It is very leafy and the leaves stay well with the stalks.

Many people cut Sudan sooner and get a finer textured hay that sells better but is not eaten better, and is more laxative. It does not bloat stock, but where its growth has been checked by frost or drouth the new green growth should not be pastured until it is known definitely that it does not contain prussic acid. If it does, this poison becomes harmless when the grass is made into hay.

Some Who Have Tried Sudan.

On September 10, a year or two since, G. W. Lane of Santa Clara county sent us a magnificent sample of Sudan grass. Part of it was over six feet tall and had gone to seed after a full season's growth. The rest was fine green hay about 30 inches tall, the second cutting that season without irrigation, after planting in April. This field had

been in hay without fertilization for several years previous. Said Mr. Lane: "All the stock are fond of it, perhaps on account of its sweetness. It does not bloat."

The Alkire ranch of Phoenix, Ariz., wrote us their experience a couple of years ago. They planted June 1 on old alfalfa land, four seeds per hill, hills six inches apart, and rows four feet apart. They cut some of it for seed August 25, doing this by hand to eliminate sports and weeds. "The yield was 1,600 pounds of threshed seed and eight tons of hay per acre," wrote H. A. Huntington. "The plants had very good leaves and stems. Both horses and cattle ate it up clean." This yield of seed is a little above the average for California.

G. P. Marcus of Monterey county planted three-quarters of an acre with three pounds on May 12. Late in August he took to town a stool containing 103 stalks, the longest of which measured 7 feet 2 inches.

George McNair of Butte county cut Sudan grass 8 feet 11 inches tall on August 1 from seed planted May 9.

A southwestern farmer reported turning hogs on Sudan grass when it was a foot high, and pasturing them on it all summer. Caution may well be exercised in pasturing, however, for the ground is soft, due to annual seeding, and the plants do not form a sod.

J. H. Trayner of Butte county pastured thirty-three acres of Sudan heavily with dairy cows and cut forty acres for hay. The first cutting yielded two and a half tons per acre just as it was going into blossom. After the hay was cut the cows were pastured on this also. He made a balanced feed of roughage by combining the high-carbohydrate Sudan with high-protein alfalfa.

W. E. Woodward of San Diego county drilled 25 pounds on six acres in rows three feet apart in May. He pastured the bottom land four times and the hillsides twice, beginning July 15. He thinks twice as much seed and twice as many rows would use the land more economically. Both he and Mr. Trayner got better results in milk from Sudan than from alfalfa.

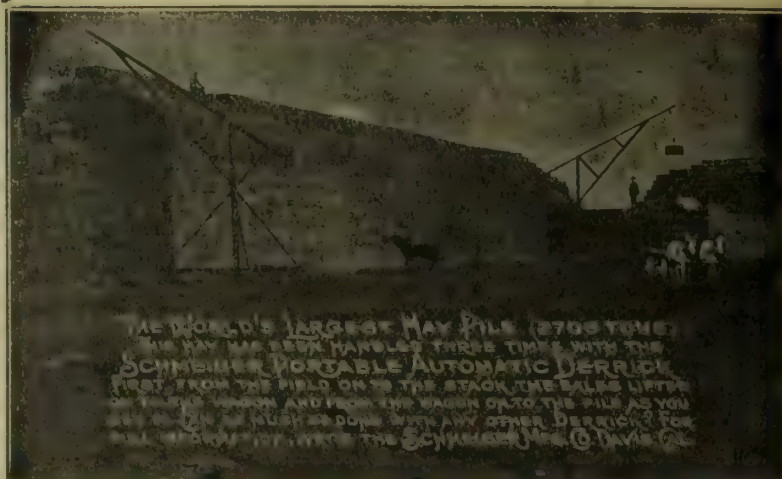
In southern Oregon and the Willamette Valley the O. A. C. recommends planting May 1 to 20 after the ground is warmed up.

In Nevada, while Sudan requires more heat than elevations over 5,000 feet generally afford, it may prove well as a supplementary feed for live stock additional to the splendid alfalfa grown in this State, provided summer frosts are not too frequent.

Sudan grass seed looks like Johnson grass, and doubtful samples should be sent to the university as soon as possible for tests as to purity and germination. Pure Sudan has no underground root stocks and being cut for hay does not reseed itself, so it cannot become a weed pest.

A cool shade for cows in the summer will help keep up the milk flow.

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There is now an extra demand for farm laborers to replace the many young men who have volunteered for service in war. The government is urging farmers to put extra acreage into grain. Write for literature and particulars as to reduced railway rates to Supt. of Immigration, Ottawa, Canada, or

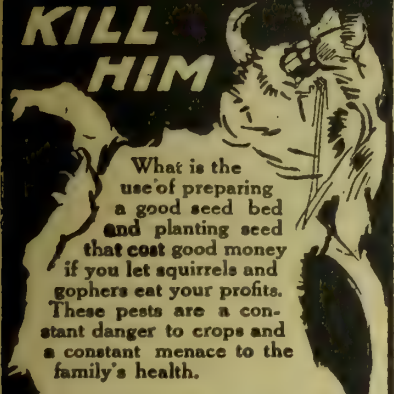
GILBERT ROCHE, Canadian Government Agent
Canadian Gov't Exhibit, San Diego, Calif.

The United States Department of Agriculture has recently been active in prosecuting makers of medicines for which fraudulent claims were made.



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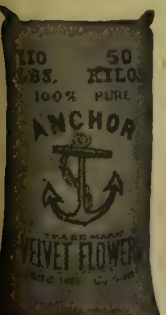
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Many a new house looks as if it had been designed by the man who put the bungle into bungalow —

Agricultural Jottings

The first blackberries of the season were on the Los Angeles market the past week and they sold at \$5 per 30-basket crate.

The Annual Strawberry Day Festival at Gardena will be held May 4-5 and a most interesting program has been arranged.

Don't forget the Ninth Annual Raisin Day Festival at Fresno, April 29-30. There will be a big patriotic parade, band concerts, gorgeous floats, and outdoor sports.

County Horticultural Commissioner Chas. F. Collins of Fresno county has sent warning to grape growers to take precautions to prevent mildew and other diseases which affect grapes.

E. Scrivani, who shipped the first strawberries from the Salinas Valley this season, received word from San Francisco that his berries brought \$23 a chest. The average price per chest in any ordinary season is \$5.

Valuable information to lettuce raisers can be obtained from a bulletin on "Lettuce-Growing in California," written by Stanley S. Rogers, assistant professor of clericulture in the University of California, just issued by the University.

Sugar refinery refuse is being experimented with in England with a view to producing a new fuel for automobiles and tractors. It is said to be superior in some respects to gasoline and may be taken up by our many sugar factories in our State.

Figures taken from the report of the State Tax Commission show a striking lack of uniformity among the counties in the proportions borne by assessed values to the true values of non-operative property. Humboldt county is said to have the lowest valuation ratio and Riverside the highest.

During this season up to April 1 Tom Henry, Horticultural Inspector for San Luis Obispo county, inspected and passed upon 126,774 almond trees, 9,007 prune trees, and other fruit and nut trees to the number of 148,037; also berries, grapes, vegetables, and ornamentals to the number of 8,337.

Legislation to empower the Council of National Defense to supervise distribution of food, and if necessary fix maximum and minimum prices, has been framed as one of the results of a conference between the great Chicago meat packers and Secretary Houston of the Department of Agriculture.

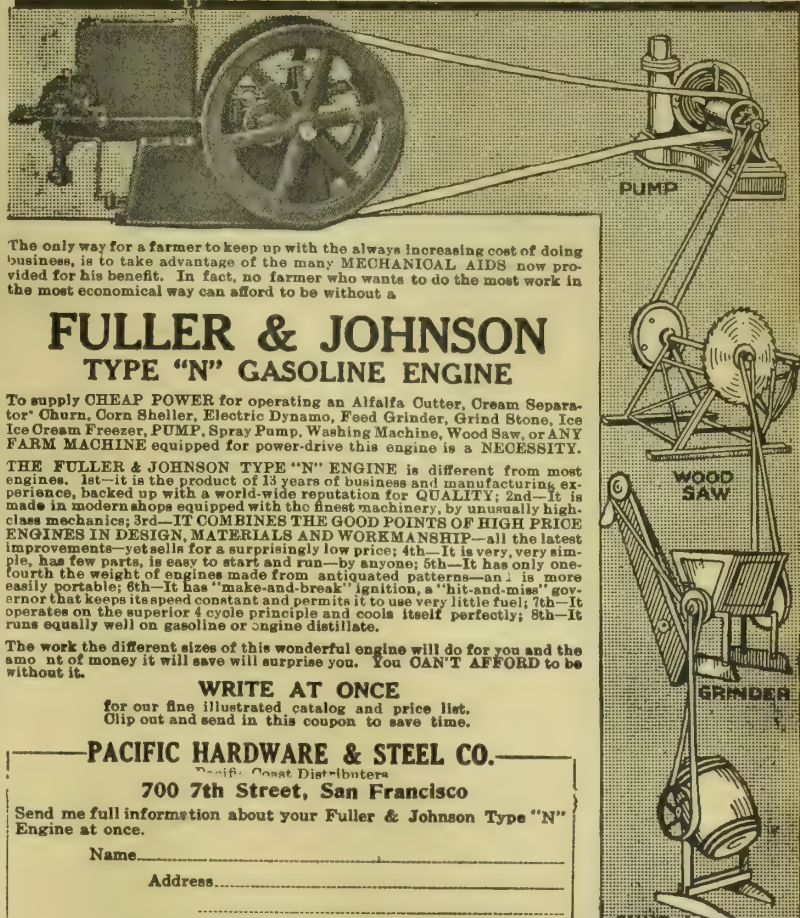
The approval of a plan to establish a 300-acre dry farming experimental bureau adjoining the University farm at Davis, given recently by the Board of Regents of the University of California, marks the initial move of the institution's control body to increase the food production of the State.

The Forest Service plans to spend \$6,000 this summer in clearing the grounds in the national forests of California for the purpose of establishing camping places. The improvements contemplated include suitable sanitation equipment and signs along the highways calling the attention of travelers to the camps.

To check the reign of terrorism that has prevailed at times in our hop-growing districts and other rural sections of California, a bill has been favorably reported to the House Judiciary Committee making the teaching of unlawful methods of terrorism as a means of accomplishing industrial or political reform a felony.

County Horticultural Commissioner Fred P. Roullard of Fresno and R. L. Nougaret, government entomologist, will endeavor to obtain a new type of lady beetle which feeds on the citrus fruit mealy bug, with the view of seeing if it will destroy the mealy bug which works on the grapes in the Fresno section.

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The only way for a farmer to keep up with the always increasing cost of doing business, is to take advantage of the many MECHANICAL AIDS now provided for his benefit. In fact, no farmer who wants to do the most work in the most economical way can afford to be without a

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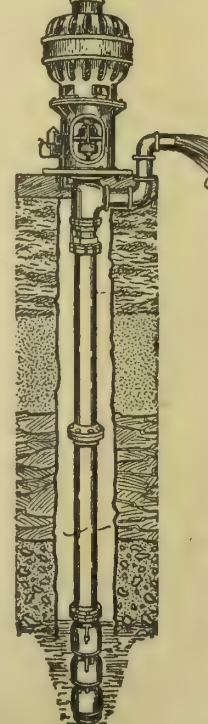
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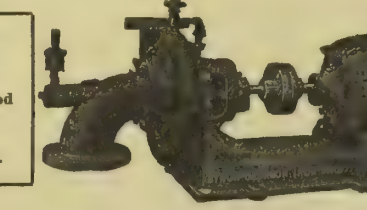


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"World's Work" Favors California Plan

The Eastern magazine, *World's Work*, which has achieved wide popularity for its outspoken support of progressive and promising achievements and plans for the development of various phases of American industry, finds a plan much to its liking in the land settlement proposition now being discussed in California. It speaks appreciatively of the "readable, informing and constructive report of the Commission on Land Colonization and Rural Credits of the State of California," and continues its comments, in part, as follows:

"This report is the fruit of a year's investigations, in which the Commission was aided in the taking of testimony and the analysis of facts by the Commonwealth Club of California and by the University of California. The report is a detailed picture of the business and social sides of rural life, an analysis of the causes of its failure, and a statement of the remedy. It points out that the Federal Farm Loan Act does not fully meet the situation because its benefits are 'restricted to farmers who can give first mortgage security on land worth double the amount of the loan,' and adds that 'in order to enable tenant farmers to become farm owners, or in order to give adequate assistance to colonists of small capital, a separate credit system based on some measure on the character of the borrower must be provided.'"

The Commission found that the commonest cause of failure of settlers was inadequate capital: "We have not found a single settler who, bringing with him only the limited capital accepted by state systems in other countries, has been able to pay for his land in the time agreed upon in his contract."

What Is the Remedy?—The Commission finds it to be in the adaptation of a system of state-aided or state-guided purchase, the essential elements of which are to be found in all the systems worked out by foreign countries.

Small Initial Payments.—The first of these essentials is a provision for enabling farmers to enter into possession of land with only a nominal payment, thus leaving the greater part of their capital available to pay for improvements and equipment.

Organized Construction of Farm Improvements.—The second is the creation of an organization, either state or private, to make the necessary improvements, such as houses, stables, etc., leveling and ditching irrigated land, and providing practical superintendence over the farming operations of beginners to prevent costly delays and mistakes.

Long-Time Payments for Land and Improvements.—The third is making the period of payments long enough to enable the money to be earned out of the soil, and having the payments amortized; that is, in small amounts paid annually or semi-annually rather than in a lump sum; also securing for the settler, usually through the use of the state's credit, loans of money needed for improvements at low rates of interest.

Practical Advice and Supervision

for Beginners.—The fourth is employment of capable business men fully informed regarding prices of farm equipment and farming operations in the locality, to give advice to inexperienced beginners or farmers from other sections of the country who do not know what crops to plant or when or how they should be cultivated.

European Experience.—*World's Work* then gives an abstract of the data given in the report concerning the success of such land settlement movements in European countries, and continues:

"At this point, if not before, the reader may be expected to object that 'American farmers are different; they are too independent and too individualistic to be profited that way.' But the fact is that one of the most extensive and most successful of these systems is in operation in Australia, which is more nearly like the United States in government and people than any other country save Canada.

"Between 1901 and 1914 the six Australian states purchased and subdivided 3,056,957 acres, for which \$55,243,125 were paid, or about \$18 an acre. In all these states provisions were made to assist settlers to build homes and effect improvements needed to bring the land fully and promptly under cultivation. In the five-year period from 1909 to 1914, these six states lent the farmers, to make improvements and buy equipment, \$68,029,500. This has been done without any cost to the general taxpayer, as the interest paid by the farmers was greater than the interest paid by the state; and the farmers have met both payments of principal and interest, so that there has been an accumulated profit of \$1,233,370.

"The whole of the California Commission's report is fascinating reading. Some of it concerns only California, because conditions there are extreme; but most of it applies equally to New England, the South, and the Mississippi Valley. And it contains much suggestive comment on the broad subject of land in its relation to the public welfare—besides containing much practical information for any man who is thinking of buying his first farm or of selling his old farm to buy a new one. It throws a bright light on some causes of the high cost of living, on the political disquiet of the farming states, and on the state of agricultural preparedness for war in this country. The war in Europe has now got to a point where it is largely a question of the side that has the biggest bread basket. We should confront the same situation in any prolonged war."

The Proposition Before the Legislature.—The proposition thus outlined and approved by *World's Work* is not now pending in this state. The bill now before the California legislature provides merely for a practical trial on a limited acreage, under the auspices of the University of California, which will demonstrate, without ultimate cost to the state, that capable, trained young farmers can be put upon land and can come to ownership of it, if they are fairly financed and assisted

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to do good farming. It is a piece of practical field work in agricultural education to demonstrate that such education is worth having if it has a chance to come through to results. Whether such a policy of land set-

tlement on a large scale shall be undertaken by the state is not now pending, and the answer to that question may await the results of the demonstration which is now proposed.

Iceberg, especially adapted to maturing during hot weather; the Hansen, a desirable variety for local market; and the California Cream Butter, with outer leaves slightly spotted with inconspicuous brown spots, this variety having a rich, creamy taste.

ROOTS AS DEEP AS TREES ARE HIGH.

[Review in E. S. R. of Utah Bulletin by A. B. Ballantyne.]

This reports a study of a number of root systems of fruit trees removed from an orchard damaged by seepage conditions in the soil.

An examination of the root systems indicate that fruit trees may ordinarily be expected to send their roots deeply into the ground if the water supply is not too plentiful, especially near the surface, and the ground water level is not too high. The natural depth of fruit roots as indicated in this study is probably near the height of the tree. The method and amount of watering will alter the general shape of the root system and make it deep or shallow.

Critics' and Cuddlers' Corner

Subscribers are welcome to praise or to condemn (in letters of not over 200 words) anything which appears in the reading columns of this journal. Contributors to this department may drive and counter-attack each other as they see fit without endorsement or response on our part.—Editors.

Willing to Pay for His Laughing.

To the Editor: Allow me to thank you from the bottom of my heart for your sense of humor. Perhaps it will surprise you, and perhaps it will not, to learn that there is a subscriber of the Rural Press who reads it, not merely, but chiefly to have a good laugh. Some of your answers to inquirers make me roar. That is why I read all your editorials even when the caption warns me that it is going to treat of some subject that does not interest me at all. You see, most technical journals are so lugubriously serious! What a relief it is to find someone who can be witty and sarcastic without ceasing to be serious. I also would like to express my appreciation of the way in which you treat all questions scientifically, and yet with so much bonhomie, without pedantry, without superciliousness.

HOMESTEADER.

San Benito county.

Doubts Our Economics.

To the Editor: The young man who took my subscription this spring told me that it was the editorial policy of your paper to concern itself as much with the economic welfare of the farmers as it was to teach them how to grow their crops. Your editorial in the issue of April 14, giving your non-committal attitude upon the war, prompts me to ask if you are equally indifferent as to the economic welfare of the farmer who makes your existence possible? By economics I by no means mean politics. The question of single tax concerns the farmer economically. A State produce exchange concerns him economically. Where do you stand in these matters? I am anxious to know if your representative was correctly informed.

SUBSCRIBER.

Bishop, Inyo county.

Cream for the Kaiser.

To the Editor: It was the Kaiser's ambition to go down in history as the great peace lord. If ever a ruler had the welfare of his people at heart, it is this same Kaiser—a poet by nature. He set an example to his people by his clean, moral and frugal life, in the midst of all court splendor. He was as strict with himself and his immediate family as with state affairs. Such a man cannot be a "tyrant" or "demon." Such a lover of nature as you undoubtedly are must be a lover of the truth; and the above is it.

READER.

Angels Camp.

BEST LETTUCE VARIETIES.

At the University Farm vegetable garden, 80 different varieties of lettuce were grown during the last season, and most of them did well. The

four varieties, however, now most in favor in California are the Los Angeles or New York Market, which is best adapted for long-distance shipments and which withstands cold weather injury, but is not adapted to maturing during hot weather; the

GET IN YOUR ORDERS EARLY.

Our readers may find labor more than usually scarce this year. Other jobs are open for farm laborers that will attract them by the higher wages offered. Use of tractors, engines, electricity, auto trucks, and labor-saving machinery may be necessary to save the big crops we hope to raise. The demand for such will be heavy at the last minute, when deliveries may be impossible in time to save the crops.

Fair List Prices



Fair Treatment

GOODRICH BLACK SAFETY TREAD TIRES Underwritten by GOODRICH Good Faith

The Fair Treatment Guarantee—the pledged good faith of The B. F. Goodrich Rubber Company—takes the slightest shadow of a risk off Goodrich Black Safety Tread Tires.

You must get full value service from a Goodrich tire, or Goodrich wants it back forthwith.

Then Goodrich FAIR TREATMENT steps up and squares the debt of that tire—squares it gladly and generously with a liberal adjustment, bound to satisfy you.

For Goodrich accepts as the Company's debt of honor an obligation of tire service, worthy of the best fabric tire made.

There are no conditions, no catch words to Goodrich's world wide invitation:

*"Send back to Goodrich
ANY Goodrich tire you
believe owes you anything."*

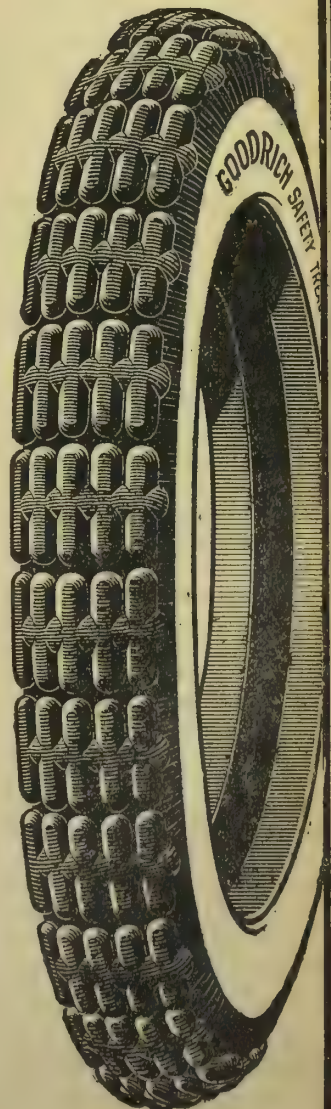
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Also Maker of the Celebrated tires
on which Darlo Resta won the official
1916 National Automobile Racing
Championship, Silvertown Cord Tires.



"Best in the Long Run"

General Agricultural Review

Field Crops.

The 1916 bean crop totaled over \$20,000,000.

Men to harvest crops is the greatest need of the California farmer.

Throughout the entire State bean dealers forecast a doubling of the bean acreage.

A potash deposit has been discovered in sufficient quantities in Agua Caliente district to make marketing profitable.

C. H. Pratt, superintendent of the Biggs rice mill, stated recently that the Dodge people had just sold their rice crop for \$3.50 per cental.

W. W. Harris of Esparto has completed his cotton planting and is watching what nature will do. He planted long staple Egyptian cotton seed.

India's 1916-17 cotton crop will exceed that for 1915-16 by 19 per cent in area and 22 per cent in outturn, according to the final official estimate for the season.

The condition of winter wheat in California on April 1 was 84.2 per cent of normal. On that date wheat was quoted here at 159.2 cents against 86.6 cents in 1916 on same date.

Hops in the Russian river district have decreased in production the past year about 1,000 bales, and as many acres have been plowed out to make way for orchards and alfalfa.

Lindley Bros. have a 250-acre field of field peas in bloom north of Ripon. A shelling plant is being erected there and the peas will be hauled by truck to the Oakdale cannery.

The sugar beet growers of Orange county are feeling better. They are solving their troubles by importing white labor from Los Angeles and now have most of their beets thinned.

Palo Verde Valley, Riverside county, has acreage planted as follows: Cotton, 12,000 acres; alfalfa, 5,000 acres; grain, 6,000 acres; beans, 1,000 acres; rice, 250 acres (experimental).

It is announced from El Centro that 10,000 cotton pickers will be required to pick the big cotton crop that is now being planted on 130,000 acres. Hundreds of Mexicans are arriving to work in the cotton fields.

The better grades of Japanese rice grown in California constitute the best table rice produced in the United States, according to Joseph Stevens, president of the Pacific Rice Growers' Association.

A year ago the price for corn in the Stockton market was \$1.75 the hundred weight and last week it was quoted at \$3.10 to \$3.25 a cental, according to quality. Sperry's mills bought a big lot at the higher figure.

A few string beans were on the Los Angeles market the past week from the Coachella Valley and they sold at 25 cents per pound. A few summer squash were also from the same valley. They sold at \$1.75 to \$2.00 per crate of four baskets.

The average condition of winter wheat in the United States on April 1 was 63.4 per cent of a normal crop. The Bureau of Crop Estimates, United States Department of Agriculture, forecasts a production of about 430,000,000 bushels, compared with 481,744,000 bushels in 1916.

If weather conditions continue good in Imperial Valley there will be a big crop of canteloupes harvested by the end of May. Though the plants are all healthy and the stand practically perfect, the State Horticultural Department has supplied some lady birds to guard against aphids.

At a conference of canners and jobbers of canned products held in Chicago last week at the request of Secretary of Agriculture Houston and Secretary Redfield it was decided that no more baked beans, hominy, kraut, oils, tobacco, molasses or lard is to be canned in the United States during war time.

At a meeting of the Beet Growers' Association last week held at Long Beach, it was decided to plow up their young beets and plant the ground to vegetables and some other crops that required less labor. It is said that hundreds of Mexicans have left, and that it is impossible to get labor to thin beets.

Deciduous Fruits and Nuts.

Experimentation in Kings county with wild Chinese peach root shows a nine-inch growth already this spring.

Buyers in Stanislaus county are offering \$45 a ton for Tuscan and Phillips and \$30 for Levi and orange clings.

The prune crop throughout the State seems to be in excellent condition, and plums promise a heavy yield, as do peaches.

A more careful survey of the damage done by the recent frosts indicates that the first reports regarding Yolo county were exaggerated.

O. E. Bremner, Sonoma County Horticultural Commissioner, says

that April 14 is about the limit this year for pear and apple scab spraying.

At the annual meeting of the Oakdale Almond Exchange held recently all the members reported a

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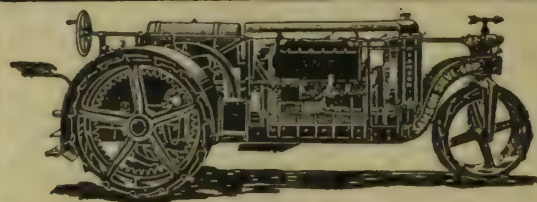
Size	Special Prices on Plain Tread	Gray Tubes	Red Tubes
28x3	\$ 7.70	\$1.85	\$2.05
30x3	8.20	1.95	2.20
30x3 1/2	10.55	2.20	2.45
31x3 1/2	11.10	2.25	2.50
32x3 1/2	11.70	2.35	2.55
34x3 1/2	12.90	2.40	2.65
30x4	15.50	2.95	3.25
31x4	16.30	3.00	3.35
32x4	16.55	3.10	3.45
33x4	17.30	3.25	3.55
34x4	17.60	3.30	3.70
35x4	18.40	3.35	3.80
36x4	18.65	3.45	3.90
33x4 1/2	23.00	3.95	4.45
34x4 1/2	23.80	4.05	4.50
35x4 1/2	24.55	4.15	4.55
36x4 1/2	25.00	4.30	4.75
37x4 1/2	25.80	4.35	4.85
35x5	27.80	4.95	5.45
36x5	28.20	5.15	5.60
37x5	29.30	5.20	5.70

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The Oldest Automobile Tire Jobbing Concern in the United States and the Largest in the World.
OPEN SUNDAYS and EVENINGS



Samson Sieve-Grip Model S-25

READY?

Are you ready to get the best out of your farm this year?
Have you ample power for this season's work?
Do you want to get along with fewer horses and men?

SAMSON SIEVE GRIP

Reg. and Pat. U. S. and Foreign Countries

tractors are built to help you do these things. Sturdy, simple, powerful, they can cut your farm power costs remarkably. Every farm where a Samson Sieve-Grip is working is being bettered, is producing bigger net profits.

Let us tell you more of Samson Sieve-Grips and the name of the nearest dealer. Two sizes—Models S-25 and R-12.

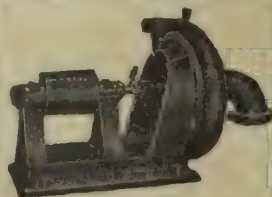
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normal crop this year, and good prices are expected.

The apricot crop will be light because of rain during the blossoming period, according to a statement made by State Horticultural Commissioner G. H. Hecke recently.

There were very good prospects on apricots around San Jose—about 50 per cent in Santa Clara Valley proper. The higher lands which are out of the frost belt look very good, but the floor of the valley is pretty well burned by frost.

San Jose prunes have had an excellent blossom in all sections of the valley and the outlook is very favorable at this time. It is reported that there has been probably 11,000 to 12,000 tons sold to packers who are outside of the association, at prices ranging from 6 to 6½ cents basis.

O. W. Harris and Isaac Ford of Oak Glen say the apple crop has escaped damage by frost this year and the outlook is good for a big yield. Cherries around Oak Glen, however, were caught by the recent cold snap and the crop will not be much over half. Yucapia orchards escaped, they being much lower.

A recent financial statement issued by the Banning Almond Growers' Association shows this concern owns property valued at upwards of \$9,000. During the year their receipts were \$11,420.48 and disbursements \$11,326.06. Improvements amounting to about \$5,000 have been made during the year.

We are sorry to announce the death of J. B. Wraugham, which occurred on April 19. He was one of the original incorporators of the California Almond Growers' Exchange in 1910, representing the Fair Oaks and Orangevale Almond Growers' Association, and on January 10, 1913, was elected secretary of the Exchange, in which capacity he served until his death.

"Neighbors besieged me to join the association just as soon as I got home. I have only 4½ acres of prunes and didn't suppose you cared anything about that," said a lady from Calla who recently came to the California Prune and Apricot Growers' office and signed up when she was told that the more such people as she and her neighbors there were in the State, the better assurance they would have of getting all their crops sold for.

Citrus and Semi-Tropical.

A few loquats continue to come on the Los Angeles market from Orange county and they are selling at 6 to 12 cents per pound.

The new cannery at Riverside is assured. Sufficient capital has been guaranteed and the cannery is expected to be in operation in sixty days.

Reports from Riverside say that about fifty per cent of the navel crop has been marketed and prices received have been much better than a year ago.

Over a million boxes of oranges were produced in the province of Catania, Italy, in the season closing in March, 1917. This is 30 per cent less than the previous crop.

According to a statement from the Valencia district near Porterville the late crop this season promises to be very good. The fruit is more than average in volume and promises to be very high in quality.

It is reported that Secretary McAdoo has recommended that the duty on fruits and nuts be increased 10 per cent, but in the citrus fruits schedule the increase is expected to be more than 10 per cent.

According to advanced information obtained, the estimated yield of olives for all Italy for the year 1916 is 1,150,047 short tons, as compared with 1,125,411 tons in 1915, and a seven-year average of 1,163,712 tons.

Miscellaneous.

The Berkeley Federal Farm Loan Bank expects to make loans this April.

Agitation is on foot for the building of a bridge across the Stanislaus river at the Burneyville ferry.

Yakima Valley (Wash.) shippers are starting a movement to not wrap apples the coming season on account of the high price of paper.

Labor troubles are being experienced on the Lindsay-Strathmore irrigation project. Agitators are demanding \$3 for an eight-hour day.

For the grazing season of 1917 the National Forests in California are authorized to graze an equivalent of 327,315 head of cattle under paid permit.

The budget appropriation bills passed by the State Legislature included an appropriation of \$49,720 for the support of the State Market Commission.

The fish and game law passed by the last Nevada Legislature, that deputy game wardens must be appointed by the State game warden, has been repealed.

The State Hospital Farm at Napa carries 510 head of hogs (20 of them pure bred); 248 head of cattle, three pure bred bulls, five cows and four heifers.

The total bonded indebtedness of the State, county and city governments in California is \$253,000,000, according to official figures, or \$84.33 1-3 per capita.

It is said that 700 men are at work completing the potash plants of the American Trona Corporation and the Solvey Process Company at Searles Lake in San Bernardino county.

In order to preserve the pine forests of California, gooseberry bushes and raspberry vines grown east of the Mississippi river should not be admitted to the State. State quarantine has been established.

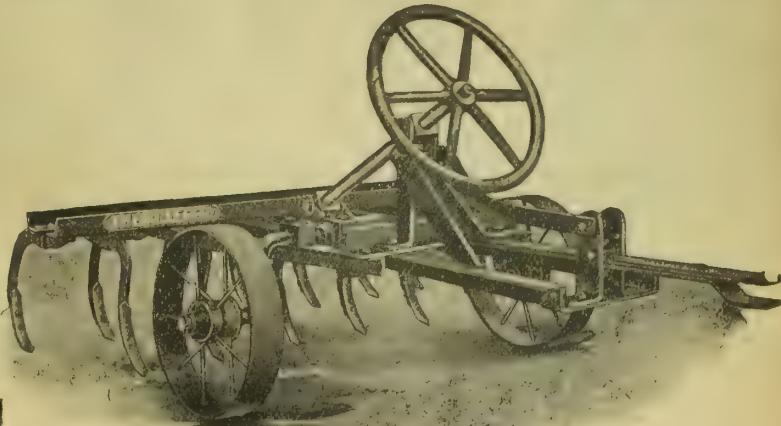
State Commissioner of Horticulture advocates the importation of 20,000 to 25,000 Filipinos to harvest the crops of California. This he urges as a war measure only, and in view of the acute shortage of agricultural labor.

Rabbit drives were carried out at various points in the San Joaquin Valley recently. Free barbecue luncheons, ammunition at cost, and a cordial welcome to everybody called out a large attendance. Thousands of these pestiferous animals were killed.

K HEAVY DUTY CULTIVATOR No. 3 K

KILLEFER
QUALITY

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EFFICIENCY



This latest model of Tractor Cultivator was built to meet the demand of owners of the smaller size Orchard Tractors.

Built on the lines of our well-known and popular Monarch Cultivator with levers and rear wheel eliminated, but provided with hand wheel screw lift, making it a perfect one man cultivator.

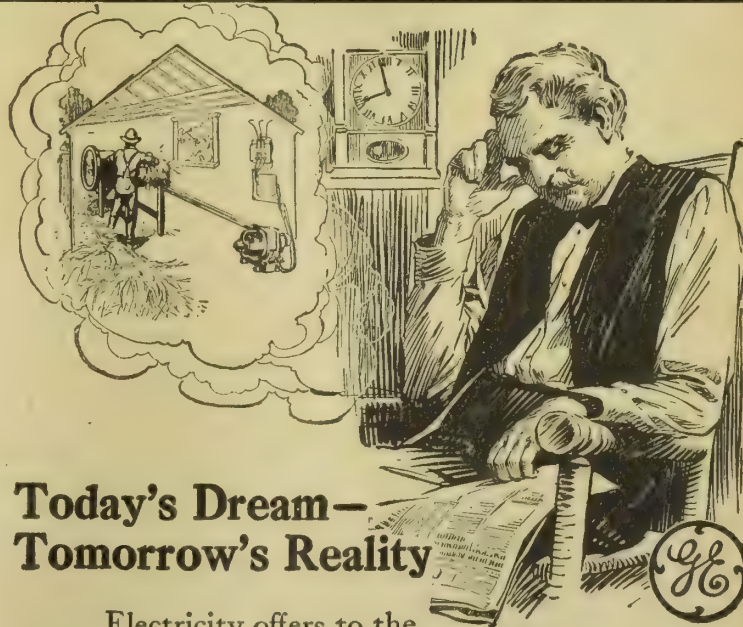
The material used in this cultivator is of the same high grade as used in the make of all of the Killefer implements.

The great demand for this cultivator is keeping our factory running to full capacity to meet the demand.

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Electricity offers to the farmer of the present the means of eliminating the monotonous grind from the day's routine.

G-E Motors Save Labor

You can free yourself from the physical exhaustion resulting from farm drudgery if you use G-E motor-driven machinery to milk your cows, separate cream, churn butter, cut feed and ensilage, saw wood, thresh grain, pump water and perform the many other tasks which make up the necessary activities of the working day. The cost for power is less than the wages of one farm hand. Ask your lighting company or our nearest office for full particulars.

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Stand on this Security Ladder—

(of course it costs more)

Try to wrench the points—Put it into your trees and subject it to all the twists and strains a ladder gets in actual orchard use—

You'll find rigidity, strength and service like you never thought any ladder could possess.

The JOINT—
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J. B. Patterson, manufacturer, on his way to see you personally with a Security Ladder for you to test.

Sign the Coupon Now.

Patterson: 82 Franklin St., Oakland.
Come see me.
Name.....
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P.R.P. 4287

Mechanical Power on the Farm

Users of tractors, engines, pumping plants, motor trucks, automobiles, electric motors, and other mechanical farm power are invited to make this department an exchange of their experiences and troubles.

DYNAMITE AND STUMP-PULLERS CO-OPERATE.

[From address by Carl D. Livingston, University of Wisconsin, at Southern Land Clearing Conference, New Orleans.]

An organized effort directed along engineering lines will greatly promote modern land clearing methods and demonstrate them to the people you care to reach. A year and a half ago a new branch was organized in the department of Agricultural Engineering at the University of Wisconsin, the sole purpose of which was to deal with the problems connected with clearing the land. Previously there was no exclusive agency in the Lake States where land clearing data could be filed. When an inexperienced settler came into the country he had to begin, not with the knowledge of those who had been before him, but at the beginning.

Our largest single effort has been the two Land Clearing Specials which we operated over two railroads, during the spring and fall of 1916. The Specials of eight cars each carried a crew of 18 men, home-made equipment, hand and horse pullers, dynamite, and stump pullers. Our purpose was to demonstrate just what our equipment would do for the average man who had stumps to clear. We tried to show good practice for the little fellow as well as for the well-established farmer. Twenty thousand actual owners of stump farms saw the 30 demonstrations held in 16 cut-over counties. We stayed one or two days in each place and actually did the work of stump pulling, blasting and piling—sometimes burning.

The banks are now co-operating in the matter of loaning money to farmers which will enable them to clear their land more rapidly. Local improvement organizations and state advancement associations co-operate in movements which will cause many extra acres to be cleared. The Advancement Association has instituted a propaganda for the collective purchase of dynamite and stumping equipment. As a result, there will be placed many tons of dynamite where previously only cases of explosives had been used.

Land has always been cleared slowly, but we were able to show that the one-man pullers accom-

plished the work of many men who had only their unaided backs to use. Modern horse-pullers are quicker than the man-power machine. When equipped with modern takeups, the speed of the pullers is doubled. Power pulleys mean increased power, so that larger stumps can be pulled with the same weight equipment. Root hooks greatly add to the speed of stumping. Horse-power pullers have demountable trucks which make the whole equipment easy to move from place to place.

Dynamite is necessary in the majority of clearing problems, either alone or in combination with pullers. We showed conclusively that 20 per cent or 30 per cent dynamite did the same work, stick for stick, as the higher grades on the medium and heavier soils, at a saving of two to five cents a pound. By the combination method we found that with our lateral and semi-lateral rooted stumps, we could use a combination of pulling and splitting and thereby lessen the amount of dynamite required.

There is no royal road to cleared acres—it will always require work to clear land, but by the use of dynamite and modern equipment, the drudgery is passed up to machines and explosives. The accessories save heavy work. Pilers lift the stumps where heretofore they caused much grief before they were in condition to be burned. Labor-saving tools make the proper placing of explosives an easy matter. Electrical firing is safer, quicker, leaves better results and should cost no more under normal conditions.

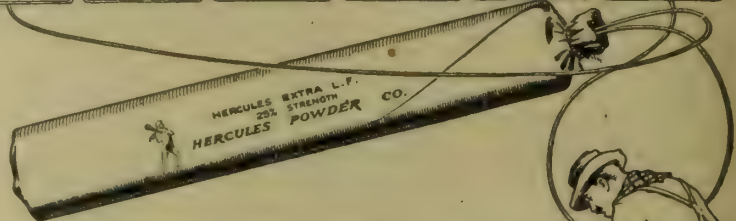
Since proper equipment is usually beyond the means of the majority of settlers, it was necessary to promote the organization of small land clearing associations, for the collective purchase and use of such equipment.

On the Salvador Stock Farm north of Napa, has recently been installed an electrical irrigating plant. Mr. Wheatley has also secured a tractor and is busily plowing under a fine crop of vetch in his orchards.

Directors of a newly formed million-dollar agricultural implement company in South Africa are soon to visit the United States to get suitable machinery for sale there.

Sales approximating \$3,500,000 are reported to have been made at the Chicago Automobile Show which closed Feb. 3.

An order for thirty Sieve Grip tractors or five carloads, was cabled March 31 to the Samson Iron Works from Europe.



Use Dynamite On Your Farm

If you have never used Hercules Dynamite on your farm you have no idea of the many tasks it may be made to perform—and perform more quickly, more thoroughly, and much more cheaply than can the methods usually employed.

In irrigation and drainage work especially does Hercules Dynamite prove its superiority. To run an irrigation ditch or a drain by its use is child's play when you consider the effort and time necessary to accomplish the same work with pick and shovel.

You simply plant the charges along the prescribed course. Connect with the blasting machine. Fire. There is the ditch. If you want to dress it up a bit, well and good. But usually it's ready for use just as the dynamite leaves it.



HERCULES DYNAMITE

is also most valuable for the work it does in tree planting—an operation which, by the way, can be performed as well by no other means.

Every progressive farmer is familiar with the almost phenomenal crop results that have been obtained in this way. Many, however, have not tried it on their own land. How about you?

In your own interest, in the interest of your farm, you should write us for a book which we have prepared on the

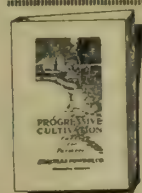
subject of the use of dynamite on the farm. It is called "Progressive Cultivation," and is sent free on request.

In it the subjects already mentioned, also many others such as tree planting, road building, land clearing, etc., are fully discussed and the best methods to follow carefully explained.

You will find the book well worth having. Write for your copy today. Please use the coupon below.

HERCULES POWDER CO.

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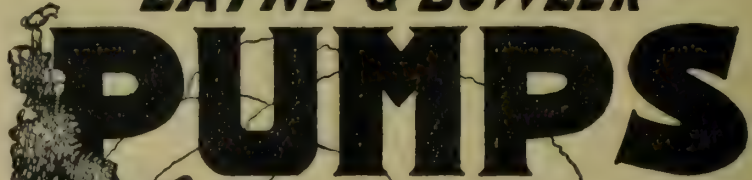
Gentlemen:—Please send me a copy of "Progressive Cultivation". I am interested in dynamite for

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Don't take a risk this year, when prices will be sky-high. A failure of your entire crop is possible if your water supply fails you at the critical time. There is one certain way to be assured of success—that's the Layne & Bowler way.

A Layne & Bowler Pump will positively produce the greatest amount of water at the least expenditure. Get in touch with us at once. Let the World's largest water developers solve your pumping problems.

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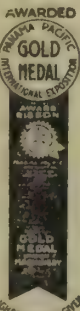
The KROGH Vertical Pumps



New Type Vertical

Are automatically water balanced and require no adjustment of any kind. All weights of shafting and rotating parts are carried on the water film absolutely without the use of thrust bearings or adjustment of any kind.

No BALANCE RINGS or PLATES in KROGH PUMPS. They are unnecessary, and mean only continual trouble. KROGH PUMPS with the least number of parts means less friction and greater efficiency. Get our Bulletin No. 78 before deciding on a pump.



Krogh Manufacturing Co.
SAN FRANCISCO. LOS ANGELES.

POWER NOTES.

Registrations by the State Motor Vehicle Department totalled 230,608 on Jan. 1.

A carload of Yuba tractors have recently been sold to bean growers of Knights Landing.

Motor speed should be reduced as much as possible while driving in low, to avoid overheating.

'Educational orders' for ammunition shells are advocated and practiced by the Hudson Motor Car Co. to give automobile factories the experience necessary to quickly convert them into efficient shell factories.

The Pacific Vinegar and Pickle Works of Hayward have found it necessary to increase their water supply, and have installed a 12-inch Layne & Bowler pump, direct connected with a 10 h. p. motor, to furnish water for their plant.

The Samson Iron Works of Stockton have sold out to the General Motors Corporation, which proposes eventually to double the size of the plant and increase the number of men employed to 600. This corporation controls the output of Cadillacs, Oldsmobiles, Chevrolets, Oakland, Buicks, and G. M. C. trucks.

A rubber hose connected to the automobile exhaust is used by W. D. McCroskey in San Bernardino County to dope the gophers and ground squirrels. Fred Clark of Kern County also worked the plan successfully. He plugged all the holes he could find and stuck the hose into a central one. Soon he found 24 other holes in 1/4 acre from which the smoke issued. He figures better success that way than with poisoned barley.

DYNAMITE NOTES.

Don't tamp with an iron bar; use wood.

Never pick at the white contents of a cap.

Don't tamp hard until seven inches of well pressed soil is over the charge.

In handling dynamite, if one wears canvas gloves, he may escape a headache.

When hauling, wrap boxes of dynamite in a sack or blanket to protect from jolting.

When putting a fuse on a cap have three inches of the end straightened so cap will easily slide over.

Never carry blasting caps loose in a pocket nor leave them loose in a dynamite box where crimper or knife may strike against them.

TRACTOR PAID FOR SELF IN ONE JOB.

[Written for Pacific Rural Press.]

J. D. Reavis landed a tractor-selling job in Imperial Valley because he did a good job of plowing while working for H. E. Owen. He plowed 300 acres north of Imperial, averaging eight acres per ten hours with a 12-24 h. p. machine, weighing 4800 pounds. He was paid \$3.50 per acre for the job, totaling \$1050. The tractor had cost him \$950. Out of the \$1050 he had to pay for 565 gallons of distillate and 75 quarts of medium lubricating oil. At that, he practically paid for his tractor with 37 1/2 days of his own time, and had a new tractor left.

PREFERS LARGE TIRES.

[Written for Pacific Rural Press.]

Large tires on the auto puts less weight on them per square inch, make them last longer, and make the riding enough easier to pay the extra cost, says Joel Anderson of Imperial County, who has run one small car over 65,000 miles in four years for pleasure and farm business. He uses 3 1/2-inch tires in front and four-inch tires behind, one set lasting about a year. The easier riding of big tires also reduces repairs on springs and machinery.

More than 34,000 farm tractors will be used during the coming season, according to the United States Department of Agriculture, which has obtained its data through letters sent to 32,000 selected correspondents.



A Letter from a Belt User

(never one like it before—from a belt user)

PETALUMA BOX COMPANY, Inc.
PETALUMA, CALIFORNIA

New York Belting and Packing Co.
San Francisco
Gentlemen:

Your last shipment of **Test Special** belting came duly to hand. Please accept our thanks for promptness in filling this order.

We are now using this brand of belting on a good part of our plant and have found it so satisfactory that we are replacing all worn out belts with "**Test Special**."

We have placed this belt on high speed machines and in places where severe strains and overloads are carried, and our experience is that it carries the loads and lasts longer than the best grades of leather or Balata belting. **It lasts longer**

We find that it is not effected by heat or moisture, will not tear at the lacing and will last for six months on a run that wears out the best grade of belt in three months. **Not effected by heat or moisture**
Outlasts leather

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Prize Cows Milk True to Breeding

Winners of Pacific Rural Press Prize in Dairy Cow Competition Show Unusual Producing Capacity in Spite of Feed Handicaps.

Somewhere in the distant past there is usually found a mighty good reason for a dairy cow or cows producing an unusual yield of butter fat and such is the case with the five Holstein cows owned by F. J. Kell of Stockton, who won Pacific Rural Press prize of \$25 for the five best grade cows entered in the California State Dairy Cow Competition during March by producing an average of 71.050 pounds of fat.

Early History.

The known history of these three-year-old second calf cows as well as the rest of Mr. Kell's herd dates back in most instances, 30 years, to a time when the elder Kell established a large dairy in San Joaquin County. During all of those years, till two years ago, the herd was carefully culled and purebred bulls were used, the result being that it was considered one of the best herds in the county. When the herd was dispersed Mr. Kell, Jr., used a good deal of care in selecting heifers which he knew to be from the best producing cows in the herd and out of a bull with good records back of him, that had previously been used on a purebred Holstein herd. Most of his purchases were confined to yearling heifers of this kind, and it is to the care exercised at that time that he credits most of his present high production.

Care of Heifers.

As calves the prize winning cows were given the same care and feed that is Mr. Kell's present practice. They were fed about nine pounds of whole milk a day with some grain and alfalfa hay and given shelter to protect them from the weather. A calf that is never stunted has a better chance to become a producer when fresh than one that is half starved when young, and Mr. Kell believes in generous feeding. The usual practice is to breed the heifers so that they will freshen at 20 to 24 months old. He never keeps a first calf heifer for his own herd, believing that they are more apt to make small cows.

Before Freshening.

Ten months is the lactation period adhered to by Mr. Kell because he has found that to produce a maximum amount of milk a cow should have two months rest during the year. But he doesn't believe in al-

lowing a cow to go down in flesh at that time. Instead, he feeds some grain along with his hay to the dry cows, so that they will be a little fat if anything before freshening.

Since the establishment of the San Joaquin County Cow Testing Association the entire herd has been tested for butter fat each month and by this means the low producers have been weeded out. He does not believe it advisable to sell a heifer because she does not produce heavily the first year as it has been his experience that many times a heifer of this kind will develop into an exceedingly good cow with her second calf. But however much or little milk a cow gives it must test high in butter fat, 3.4 per cent being the minimum requirement, and a higher test is preferred. With that object in view he is careful in the selection of his herd sires to see that they come from high testing ancestors. Protection against unfavorable weather conditions and mud is another influencing factor on

The Kell Dairy.

This dairy is provided with a combination feed and shelter barn 70 feet square with a hay mow in the center 30 feet square, allowing a 20-foot passageway on all sides of the mow for the cows to rest or eat. The sides are boarded with rough lumber and a water trough is provided under the roof for drinking purposes.

The Feeds Used.

Alfalfa hay was used in the early part of the winter but the supply was exhausted about the middle of March and a poor grade of volunteer oat hay had to be substituted. All of the alfalfa hay was fed in chopped form but the volunteer hay was fed whole. Some oil cake was fed but was omitted from the ration the last 10 days of March. A half acre of wild feed in a young orchard was all of the pasture available. Suremilk was used in the ration of all the cows, 11 to 12 pounds per day being fed to each cow three times a day. All cows were fed and milked three times a day.

Description of the Cows.

No. 66 was the highest producing cow of the five entered in the competition during March. When she freshened with her first calf she came in in bad condition and did not do so well her first lactation period. She is out of a good cow that was sold from the original Kell herd. She



"This is for you, girls!"

It's the most wonderful separator I ever saw. I just brought it from Johnson's Hardware Store where they were demonstrating it. You can't guess what it will do."

"I think I know, father. You told me last week about the loss of cream in our old separator when I turned it too slow. You timed me and pretty near scolded me when you found I was turning 37 revolutions instead of 50. This is the separator that "skims clean at any speed". It's a

SHARPLES SUCTION-FEED CREAM SEPARATOR

"Mary is a smart girl, mother—she guessed it. We all helped to test it and it skimmed to a trace when turned as slow as 36 and equally clean when turned as fast as 55 turns. It simply skimmed faster when we turned it faster. And the cream remained at 35% thruout the varying speeds."

"Why, father—then we will know exactly what the cream check will be each week, wont we?"

"Indeed we will, mother. Now look at the bowl. It's a plain straight tube with a small ring like a napkin ring in it.

"Goody!—I'll get thru washing up in a jiffy, no discs!"

"Yes, girls, and note the knee-low supply tank, and the automatic once-a-month oiling—it has any other separator I ever tried, beat a mile. But then—it's made by the oldest and largest Separator Works in America."

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We have a son of the California State Champion three-year-old for sale. Born October, 1915; Sired by PRINCE ALCARTRA KORNDYKE, whose dam is TILLY ALCARTRA.

The Dam of this young bull is not a fifty-lb. cow, but she has to her credit 21,208 lbs. milk and 860 lbs. butter in one year, which is the largest record ever made in California by a Junior three-year-old.

If you are in the market for a bull, it will pay you to visit our ranch and see what we have to offer—at prices that will surprise you.

J. S. GIBSON CO., Box 97, Williams, Cal.

"THE NAME GIBSON INSURES QUALITY."

Another California Champion

Sired by

Dutchland Sir Pietertje Creamelle



Pauline Inka Dekol Creamelle, Milk 423.4 Pounds, Butter 24.45 Pounds, Test 4.62 Per Cent, Sr. Yearling.

His ten daughters now in milk have records at 2 years or younger of 20 pounds. The best five average 22.22 pounds, including two State Champions in the Junior 2-year-old class.

A few sons of Dutchland Sir Pieterje Creamelle now ready for service. They will bring up the production of your herd.

WRITE FOR PEDIGREES AND PRICES.

F. STENZEL, San Leandro, Cal.

Breeder of High Test Holsteins.

freshened February 22, 1916, with her second calf and was fed a total of 1000 pounds of hay and 300 pounds of Suremilk. The cow tester's report showed her milk testing 4.1 per cent fat, her total production for the month being 84.315 pounds of butter fat.

No. 63 was second, with 78.566 pounds of butter fat during the month, her average test for March being 3.6 per cent. She calved January 24, and during February produced an average of 62.6 pounds milk daily, testing 3.6 per cent fat, her ration during that month being 1000 pounds alfalfa hay, 240 pounds Suremilk and 120 pounds dried beet pulp. During March she was fed 1000 pounds of alfalfa and volunteer hay and 360 pounds of Suremilk.

She is a well formed cow and her mother was a purebred cow that was never registered. Mr. Kell states that her dam was a heavy and consistent milker, giving 60 to 65 pounds milk a day when reasonably fresh and milked twice a day in the string.

No. 1, third in the list, has the appearance of a well bred Guernsey. Her mother was selected as the best cow from a large herd of grades and her sire was a registered Holstein used in the Kell herd. She freshened February 24, and during March produced 70.562 pounds of butter fat, the cow tester's report showing her average test to be 3.8 per cent butter fat. During the month of March she was fed 1,000 pounds of alfalfa and volunteer hay and 360 pounds of Suremilk.

No. 65, fourth in the herd, is a big, well formed cow whose dam was also a purebred but unregistered. The dam, when reasonably fresh, gave 50 to 60 pounds of milk, averaging right around four per cent fat, according to Mr. Kell.

This cow freshened the middle of January and the cow testing records show that she produced in February an average of 63 pounds of 3.9 per cent milk, being fed during that time 1,000 pounds alfalfa hay, 240 pounds Suremilk and 120 pounds of dried beet pulp. During March she produced 65.838 pounds of fat with an average test of 3.7 per cent fat, having been fed during that time 1,000 pounds alfalfa and volunteer hay and 360 pounds Suremilk.

No. 102 is a comparatively small cow for a Holstein, black in color, and according to Mr. Kell out of one of the best cows in the elder Kell's herd. She was hooked in the barn by another cow before calving and lost her calf, freshening January 19. During February she produced an average of 56.2 pounds of milk testing 3.6 per cent butter fat daily on a total of 1,000 pounds alfalfa hay, 240 pounds Suremilk and 120 pounds of dried beet pulp.

During March she gave 55.967 pounds of butter fat, her milk having an average test of 3.4 per cent fat according to the cow testing records. During that month she was fed 1,000 pounds of alfalfa and volunteer hay and 360 pounds of Suremilk.

Summary.

An analysis of the high records of these cows leads to the conviction, first, that sire and dams transmitted heavy producing qualities; second, that the feed before freshening played an equally important part as the feed after freshening; and third, that the three-time-a-day milking was an influencing factor.

SOME GOOD RECORDS.

Alex Whaley reports the following recent seven-day records for his El Dorado herd of Holsteins: Colona Johanna Hartog, butter 28.63 pounds, milk 579; Beauty Snowflake Hengerveld (four-year-old), butter 24.24, milk 432; Colona Beauty



Colona Johanna Hartog 148031.

Butte Maid (twenty-three months old), 19.44, milk 426; El Dorado Winifred (twenty-two months old), butter 15.21, milk 347; Prunetta Lady (junior two-year-old), butter 14.73, milk 375; Madrigal Beryl (junior three-year-old), butter 17.68, milk 329.

TWO-YEAR-OLD SILAGE.

Early in April we found Superintendent Vandever of the New England-California Corporation feeding out silage that had been put up two years ago and the silage was as well preserved and sweet as any we ever saw. There are two silos on this ranch with a combined capacity of 250 tons, that amount of silage being produced on twenty acres of bottom land.

Mr. Vandever uses white dent seed corn, drilling it in with a corn planter just as soon as he can get

COW OWNERS

EXPECT MORE FROM A DE LAVAL

- more cream
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- better service
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AND THEY GET IT

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50,000 BRANCHES AND LOCAL AGENCIES THE WORLD OVER

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For the Prevention of Blackleg in calves and young cattle

Their superiority is due to nearly 20 years of specializing in "Vaccines and Serums only."

Year in and Year Out they give better satisfaction than any other vaccine made, and the cost of a few cents per dose is cheap insurance against a disease that always takes the fattest and best.

Single Pills may be used for ordinary and range stock.

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Insist on Cutter's. If unobtainable, order direct.

Write for new booklet, "The Control of Blackleg." It tells about Anti-Blackleg Serum which cures Blackleg and may be used simultaneously with vaccine to combat outbreaks and safely protect valuable stock.

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Write for Full Particulars

GET RID OF LICE

Let your hogs rid themselves of these blood sucking pests and keep free from cholera.

to it in May, although he has planted as late as July 4 and got a fine yield of silage corn. Not only does he consider silage an ideal feed to use with alfalfa hay for dairy cows, but he also thinks his silos are an excellent insurance against feed shortage.

Why Purebred Bulls from the East?

To the Editor: One of the railroads tapping some of the southeastern states is said to be offering just as generous facilities to stock raisers as the late Jim Hill ever offered, while the successors of Hill now find it necessary to work just as hard to place Canadian farmers in a position to raise beef as they formerly did to get them to raise wheat.

Buyers from these and other sections are to be met at all the breeders' sales in the middle states and said buyers are reported as traveling around without being taxed much real money for transportation, either for themselves or their purchasers. The railroads figure, no doubt, that concessions made on a few carloads of breeders going in now will be amply recompensed when scores of carloads of beef are ready to come out. Carloads of breeder stock, it is said, are being shipped as feeders on a round trip rate, which carries no time limit.

Although there are a few Californian stockmen quietly becoming interested, this beef production enthusiasm does not seem to have hit this state with noticeable force so far, although California offers just as good, if not better, facilities for the beef industry than any territory on the continent. Various reasons are put forth for this lagging. Perhaps the most novel excuse was that offered by a well-known California beef cattle man who has watched livestock movements here for thirty

years. He complains there is a survival of quite a little of the old-time clannishness and jealousy among some of the breeders which prevents them from trading with each other; that he has known several cases where a breeder having no further use for some good bull, placed a prohibitive price on the animal rather than see it working for another herd, the result being that the would-be purchaser was compelled to look to the East for what he wanted.

It is at this stage that the professional buyer steps in and gets the order. The latter is not always looked upon with favor in some quarters; but until the breeders themselves get into shape to supply the increasing demand for good bulls for the ranges and show a little more liberal trading spirit among themselves, the trustworthy buyer will find a demand for his professional services.

But even now there are probably ten men who demand high class bulls today where there was only one a few years ago. Registered? Yes, usually; and the majority are now agreed that they must have individual merit; and if some of them give a little more attention to the females, there can be no doubt that California would soon be in a position to supply the local demand, and—who knows—possibly ship a few good specimens East. All of which is encouraging. — R. M. Dunlap, San Francisco.

Prospect for Good Shorthorn Sale

W. M. Carruthers advises us that he has received letters from all of the prominent Shorthorn breeders in this and adjoining States, stating that they will be in attendance at his first annual sale of Shorthorn cattle at Mayfield, May 2. Particular interest is being taken in this sale by breeders, as it is the first time for years that a choice offering of females has been offered at auc-

tion and it is agreed by those who have visited the ranch recently that the collection of heifers in this lot is of unusual merit. In the bull offering also there are a number of "toppers" as well as some rugged, thick-meated range bulls, and as the supply of this kind of bulls is limited both here and elsewhere it is expected that range men will swell the attendance materially.



Choice Shorthorn stock to be offered at Mayfield, May 2d.

LAMBED 150 PER CENT.

To the Editor: The following record may be worthy of publication, particularly in a State where it is largely the custom to destroy one of twins in sheep; and to show what is possible when the herd is kept in first class condition and well cared for.

From 52 high-grade Shropshire ewes ($\frac{3}{4}$ and $\frac{7}{8}$ grades) and a purebred Shropshire ram, I have secured the following yield: 79 well-developed

healthy lambs, 44 male and 35 female, an increase of 150 per cent; loss, six lambs, 2 still-born, two of a set of quadruplets, and the weaker of twins which the ewes would not recognize. The total loss was therefore 1 1-15 per cent of the bearing ewes, and slightly over one per cent of the total number born. Some of these lambs are so vigorous and true to type that they have been purchased by neighbors for breeding purposes. If any flock can beat this record I would like to learn the particulars.—Marsden Manson, Billota.

Hillcrest Stock Farm

Shorthorn Cattle, Shropshire and Merino Sheep



King Lancaster, sired by King Edward, grand champion bull State Fairs, 1909-10-11.

Shorthorn Bulls for Sale, sired by such noted bulls as King Lancaster, Knights Perfection, Greenwood Knight and Greenwood King. Nearly all offsprings of the famous King Edward.

These Bulls are conceded to be the best offering ever made from the Hillcrest Stock Farm.

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ORMONDALE SHORTHORNS



Golden Goods, Jr., Herd Sire.

Our 1916-17 offering of yearling bulls is small but select. They are all heavy boned, solid red in color and of Scotch and Scotch-topped breeding. Suited for either the range grower or breeder.

DUROCS.

Our Durocs are of the big type, with big bone, well-arched backs and carrying good hams.

We have a few head of service boars, now ready for service, solid red in color and out of prize-winning animals.

Every Animal Positively Guaranteed

Whether you buy or not, visit our ranch, 7 miles from Palo Alto on Woodside Road. We welcome inspection. Prices and pedigrees on application.

Shorthorn Cattle
Duroc-Jersey Swine

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D. O. LIVELY STOCK FARM'S FIRST ANNUAL SALE

of Registered Hereford Cattle

Will be held under the auspices of the AMERICAN HEREFORD CATTLE BREEDERS ASSOCIATION at Mayfield, California.

Thursday MAY 3, 1917

The offering will be made up of sixty-five head—twenty bulls and forty-five females. A splendid opportunity to start a purebred herd.

WRITE FOR CATALOG.

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BULLS = Shorthorns = HEIFERS

REGISTERED AND TUBERCULIN TESTED.

Animals of either sex ready to deliver in car lots or singly.

H. L. & E. H. MURPHY, Perkins, Cal

REGISTERED SHORTHORNS

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RANGE BULLS, BOARS AND GILTS

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GIVES GREATEST VALUE FOR LEAST MONEY.

IT MAKES THEM FAT.

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ASK YOUR DEALER FOR

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for Milk Cows and Chickens and Young Pigs and Hogs. Cheapest food in the market today. If your dealer doesn't carry it, address

EL DORADO OIL WORKS,

433 California Street,

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Hog Raising on Hill Lands.

[Written for Pacific Rural Press.]

By utilizing every little cleared place on the hills of their ranch as well as fields that are so steep that the cost of harvesting would be prohibitive, Bishop Bros. turn off 300 to 325 well-finished hogs annually from their ranch in the San Ramon Valley, Contra Costa county, without, as Superintendent Rutherford says, missing the feed or expending much labor. The natural conditions of the ranch are favorable to the economical raising of hogs inasmuch as much of it is hill land that is chiefly suitable for grain. Along a considerable portion of this hill range is a stretch of oak timber which provides both shade and feed, the latter being acorns. This feed supply, together with plenty of spring water, permits hog raising with a minimum of labor.

The sows, which are highly graded Poland Chinas of a blocky compact type, farrow once a year, about April 1. A couple of weeks before farrowing time they are taken to the ranch headquarters and fed till about 10 days after farrowing by which time the pigs have learned to stay with their own mothers and the sows have learned to care for their pigs.

By that time the green feed on the hills which were harvested the year

previous and which are allowed to volunteer alternate years, is in good condition and provides pasture for both sows and pigs till after harvest on the rest of the grain land. Then the stubble and the small fields and patches of land which have been seeded expressly for hog pastures are used till the beginning of the rainy season, when the timber pastures and acorns are utilized, the hogs being carried on these pastures till spring feed is again in good condition. By harvest time they are of a proper size to finish for market on the stubble, being turned off at 16 to 17 months old weighing 220 to 250 pounds and being in the best possible marketable condition.

At times it is found necessary to hand-feed a few of the last lots shipped every fall when feed is so scarce that the hogs have to rustle hard; but in the main no hand-feeding is practiced except at farrowing time.

It is the belief of Mr. Rutherford that the steep hill lands of many ranches can be more profitably farmed with hogs in this manner than in any other way, particularly where plenty of good water and shade can be secured by the hogs.

Don't Sell Breeding Sows.

[Written for Pacific Rural Press by John P. Walker, Visalia.]

I would like to impress on the minds of Pacific Rural Press readers the condition of the swine business of today as I see it.

For a good many years hogs in California have been a by-product of the ranch. People had been keeping only a small amount of hogs to consume the waste, such as skim milk, alfalfa, and pumpkins. Now comes a shortage in food products. Was the farmer prepared with hogs? There comes the rub. He has sold off all of his fat hogs, feeders, undesirable sows, and boars. What comes next? Your spring pigs will go as soon as they are old enough. What will happen by fall?

Tulare County alone has shipped out over 74,000 hogs to the market in the last eight months. Can we raise that many more in the next eight months? If not, what will hogs

be worth? As near as I can guess, it will take about three years for pork to go below 10 cents.

It is up to the farmer now to begin to figure for tomorrow and not sell his sows.

He should be buying more and better sows, to produce him more and better pigs for a quicker market. If you ask a farmer \$40 for a bred gilt, he will think you are insulting him. He does not stop to figure that a good sow will bring him 12 to 20 pigs a year. If he figures a little more he will find that sow is bringing him two to five hundred dollars.

The trouble with the most of us pure-blood men is that we do not try to educate the average farmer along those lines. So, Mr. Purebred Breeder, it is up to you to demonstrate what you can do; and when you have done that, we will have more and better hogs for California.

FRESH WATER FOR HOG WALLOWS.

[Written for Pacific Rural Press.]

A unique way of providing the hog wallow with fresh water is in use at the Whittier State School. The wallows at this institution are located in the center of concrete feeding platforms, being shallow in depth and inclined at either end to

allow easy access. Directly above each wallow and continuing overhead across all of the pens is a one-inch pipe. Faucets are located along this pipe, and by regulation as much or as little water may be allowed each wallow as seems desirable. Most of the time all that is required to keep the wallow pure is a slow steady drip.



Your Outstanding Poland-Chinas, Sunnyside Ranch, R. F. Guerin, Visalia, Cal.

The 100% Silo

is the silo that's built of California Redwood. Think up all the good points a silo material should have—you'll find *every one of them* in

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Resists rot and fire

Permanent—contains a natural preservative that prevents decay. Not affected by sun, rain or violent changes of weather.

Will not shrink, warp or swell, when properly seasoned.

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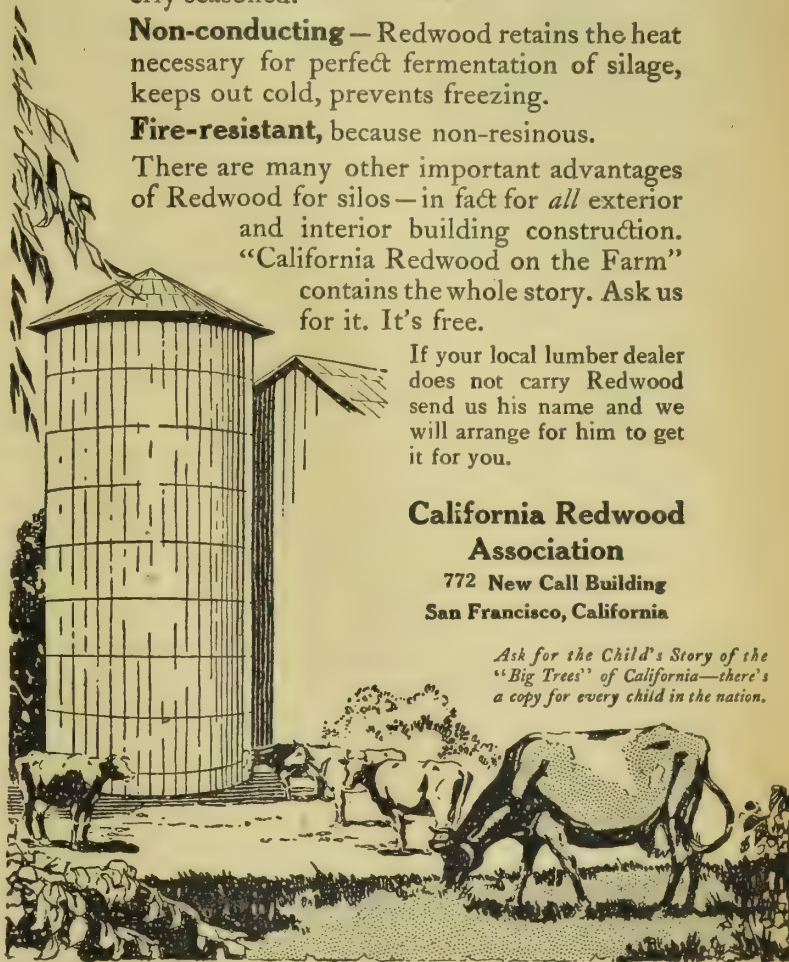
Fire-resistant, because non-resinous.

There are many other important advantages of Redwood for silos—in fact for *all* exterior and interior building construction. "California Redwood on the Farm" contains the whole story. Ask us for it. It's free.

If your local lumber dealer does not carry Redwood send us his name and we will arrange for him to get it for you.

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Ask for the Child's Story of the "Big Trees" of California—there's a copy for every child in the nation.



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HOG CHOLERA CONTROLLED, providing you vaccinate your hogs with I. S. V. Co.'s 20 C. C. Standard dose Serum. Your hogs will be immune against cholera. Ten C. C. Serum and 1 C. C. of Virus will immunize your 3 to 10 day old pigs their natural life if you use our high potent Serum and Virus, made under U. S. Government License No. 25. Learn how to vaccinate your own hogs and then you will know it is done right. Write for free booklet on Hog Cholera. Agents wanted in every county.

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BASSETT'S POLAND CHINAS



GRAND CHAMPION SOW,
P. P. I. E., 1915; Sacramento, 1916.

For many years at widely separated show rings, under many different judges of varying type ideals, my Poland Chinas have been consistent prize-winners. My herd is large and I cull closely. The animals sent out as breeders are the very tops of a large number. I KNOW that my kind of Poland China is a profitable farmer's hog, for I send carloads of them to the packer every year—uniform in size, high in quality, quickly and economically matured and finished.

Young stock, \$30 Up.
M. BASSETT,
Box 1, Hanford, Cal.

Live Stock and Dairy Notes

Livestock breeders all over the State are invited to send on postal cards, notes regarding their sales, State and County Fair intentions, new stock, etc.

The Dairy

A dairyman in Marin county recently lost 23 hogs which had eaten some meat of a cow which had died of anthrax.

W. J. Higdon recently sold his herd of registered Guernseys to A. J. Welsh of Redwood City. The herd consisted of 25 head, consisting of 12 cows, three bred heifers, two herd bulls and eight head of young stock.

N. H. Locke Company sold to W. F. Smith of Cottonwood, a fine young bull, a grandson of King's Valet and of Gertie's Son.

F. D. Ross, Hanford, recently sold to Rea Clark for \$300 an eight-month-old bull sired by his herd bull Creamcup Fidessa Cornucopia De Kol.

Golden Maid of Mable Lane, a Guernsey cow of the Grapewild Farm herd at Escalon finished her yearly test on April 24, with a record of over 600 pounds fat.

Dairymen of the central counties have organized the Central California Milk Producers' Association, the primary object of which is to determine the actual cost of production.

Entries are coming in for the big two-day Holstein sale which will be conducted by California Breeders Sales and Pedigree Company at University Farm, Davis, May 31 to June 1, during Farmers' Week. It is expected that around 180 head of registered Holsteins will be sold, drafts from a large number of the great herds of California.

Beef Cattle.

Eighty-four head of Shorthorns at the Portland Union Stock Yards Sale brought recently \$23,530. Fifty-one bulls averaged \$267 and 33 cows averaged \$323. Nine head consigned by the T. B. Gibson Estate brought an average of \$315 per head.

Swine.

Arlington M. Smith reported following recent Berkshire sales: Five gilts to E. B. McFarland, Sacramento; one boar to S. Uzuka, Fresno.

Dr. J. A. Crawshaw reports recent Poland China sales as follows: Two sow pigs to J. F. Wilson, Pelot Hill; to E. W. Root, McFarland; one boar to J. W. Melone, Laton.

Following is a list of recent shipments by Haden Smith, Woodland: Boar to Chas. Dumars, Yolo county; bred gilt to R. P. Wilkes, Placer county; bred sow, three gilts and a boar to Carrol Kauffmann, Yolo county.

Sheep and Goats.

The high price of mutton and lambs on the Los Angeles market and ready sale of both is attracting the attention of moneyed people to mutton growing as an investment.

Sheep shearing is about closed in the McKittrick portion of Kern county.

Holstein Breeders Meet.

A very enthusiastic and well attended meeting of Holstein breeders was held at the Hughson Hotel, Modesto, on Wednesday evening of last week. A new constitution and by-laws were adopted. The board of directors was appointed as follows: Delancy Lewis, San Jose; K. W. Abbott, Milpitas; Owen Duffy, Napa; H. K. Bridgeford, Knightsen; Gion W. Gibson, Williams; F. J. Kiesel and J. M. Henderson, Jr., Sacramento; Frank Morris, Woodland; A. R. Magruder, Ripon; Frank M. Helm, Fresno; W. J. Higdon, Tulare; A. J. Stalder, Riverside; W. H. Taylor, Santa Anita; Jas. McAllister, Jr., Chico, and James Jeffries, Burbank.

Dr. Keane, State Veterinarian, spoke to the breeders on the new dairy law, showing what it is doing to eradicate bovine tuberculosis. Judge Shields, in a very entertaining talk, touched on the choosing of a herd sire and scientific breeding. Frank Morris called attention to conditions favorable to dairying and breeding such as food shortage, organization of producers and standardizing products. He said in the high price of feed a good thing is that it would eliminate the scrub. J. M. Henderson, Jr., advocated breeders helping the milk producers in their efforts toward organization for a better product and a better price. President F. J. Kiesel announced future Holstein meetings as follows: Napa, May 5; Chico, May 23 and June 6; University Farm, Davis, June 18.

Stanford Ranch Purebred Holstein Sale.

Inquiries from all parts of the United States are being made regarding the determination of the board of trustees of Leland Stanford, Jr., University to dispose of the entire herd of more than 300 registered purebred Holsteins on the Stanford ranch at Vina, Cal. M. H. Tichenor of Palo Alto, who has been commissioned to sell the herd, says that the entire herd will be sold at auction at Vina on June 5, 6 and 7.

Since the Holstein herd at Vina was established by the late Governor Stanford, a third of a century ago, it has been steadily improved by the introduction of the most notable blood strains. As a result, exceptional opportunities will be afforded the advanced breeder and the dairyman to improve his herd. Because of limited accommodations at Vina, arrangements have been made for a special train from Chico to Vina each morning of the sale. The return run will be made at the close of the day.

A Most Successful Stock Sale.

The sale of registered Holsteins held by California Sales and Pedigree Company for H. E. Cornwell of Modesto on April 19 was well patronized. Twenty-eight head of stock were sold for a total of \$10,-

740, or an average of \$383 per head. The highest price paid was \$1,100 for a son of Prince Gelsche Walter, sold to W. J. Mitchell of Visalia. The top-price cow went to A. M. Bibens for \$810. W. J. Higdon paid \$1325 for three fine

cows. Following is a list of the buyers: W. F. Mitchell, Visalia; H. R. Leek, Alpaugh; A. M. Bibens, W. E. Oakes, G. W. Shirk, J. E. Vann, J. R. Pearson, H. T. Johnson, Wm. Breazeal, R. L. Holmes, L. Schmitz, Geo. N. Pfarr, W. F. Lath-

ADVANCED BREEDERS! BEGINNERS! DAIRYMEN!
HERE IS YOUR OPPORTUNITY.

Grand Holstein Herd WILL GO AT AUCTION

300

Registered
Pure Breds



BOWEDA

Complete Dispersal of
the Unequaled herd on
Leland Stanford Jr.
University Ranch.

At Vina,
California,
June 5, 6 and 7,
1917.

One of the many great specimens. Record
of 31.92 pounds of butter in seven days.

At this great sale of black and white aristocrats, many females with records, herd bulls, and young bulls old enough for immediate service will be auctioned without reserve.

40 A. R. O. cows are to be sold together with many others capable of great records. Never before have so many good prospects for A. R. O. work been offered.

Since the late Governor Stanford established this herd many years ago, it has been constantly improved by use of the best bulls procurable. The butter fat records during the past year proved the herd to be one of the greatest in the world.

In the herd, to go to the highest bidder are 40 daughters of King of the Pontiacs 14th, 84332, best individual son of King of the Pontiacs and one of the greatest show bulls in the West; 20 heifer calves of Segis De Kol Pontiac Burke, 160339, all great prospects; 40 daughters of Dutchland Colantha Sir Ormsby, 55055, a great son of Colantha Johanna Lad, all making great records; Genesee Lad, 90356, and 45 very promising daughters.

Special Trains Will Be Run
Between Chico and Vina
Each Day of the Sale.

300
Tuberculin
Tested

For Information or Catalog, Address

M. H. Tichenor, Sale Manager

Palo Alto, California.

Be sure to attend the Great Shorthorn Sale

The Time

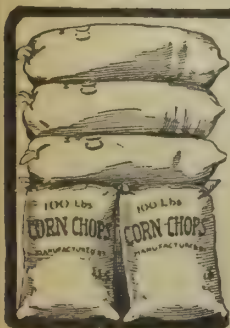
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Carruthers' Farms

Mayfield, Cal.

Col. Carey M. Jones, Auctioneer W. M. Carruthers, Prop.



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45 per cent Protein and Fat
Every dollar spent for A-1 Cottonseed Meal replaces \$2 to \$3 worth of grain or other concentrated feeds. Efficiency and profit demand you use A-1 Cottonseed Meal in your

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rop, G. E. Kunias, H. J. Noland, Geo. A. Caster and Sanitary Dairy, Modesto; Wm. T. Miller, C. C. Hitchcock, J. H. Miller and Gotshall Cattle Loan Company, Ripon; H. E. Vogel, Fresno; J. C. Haine and Kaiser Bros., Ceres; W. J. Higdon, Tulare; Glenn Harter, Escalon. Colonels Ben Rhoades and Cy Clark were the auctioneers.

Important Shorthorn Sale.

Mr. Colomb of the firm of Barton & Colomb, owners of the Barco herd of registered Shorthorns at Hollister, advises us that they have just completed the sale of a foundation herd of registered cattle to V. A. Carlyle of Sanger, Fresno county. The lot consisted of 19 heifers and one of the choice young herd sires that has been in use on the Barco herd. Seventeen of the heifers are bred to the bulls Hallwood Flash and Hallwood Villager and one other of the Barco herd sires. Mr. Colomb says there are several outstanding show heifers in the lot. The Carlyle ranch embraces some 5,000 acres of range land which is stocked with well bred range cattle.

REAL Holstein Quality

If you are in the market for a young bull that will improve the type and production of your herd, let us quote you a son of one of the following proven sires—

SEGIS PONTIAC DE KOL BURKE—Grand Champion State Fair 1916. His sire and dam both Grand Champions. His dams record of 124.5 pounds milk a day average for thirty days is the second highest in the world. And best of all he is transmitting this type and production. His daughters just coming in milk have produced as high as 23 pounds butter in seven days as 2-year-olds.

KING MEAD OF RIVERSIDE—The sire of the present State record cow, Aaggie Acme of Riverside 2d, that has produced in 120 days official test 529 pounds milk and 10,424 pounds milk. She is his first daughter tested at mature age. They average 4 per cent butter fat.

PRINCE GELSCHER WALKER—One of the best bred bulls in the world and whose daughters have broken six or more State records as two and three-year-olds.

A few of their sons from high-record dams now available at moderate prices.

Write for
Prices and Pedigrees.

A. W. Morris & Sons
WOODLAND, CAL.

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Poland-Chinas.

REAOAKS RANCH herd of registered Poland-Chinas. W. J. Hanna, Gilroy.

REGISTERED POLAND CHINAS—J. H. Hansborough, Route A, Modesto, Cal.

POLAND CHINAS—A few gilts left at \$15 each. Edward A. Hall, R. F. D. 1, Watsonville, Cal.

POLAND-CHINAS—Large type. The Browning Stock Farm. W. H. Browning, Woodland, Cal.

POLAND CHINAS—Three extra fine boars, one large and two medium type. W. Bernstein, Hanford, Cal.

REGISTERED POLAND-CHINAS and Duroc Jerseys. Cholera immune for life. T. H. Beckman, Lodi, Cal.

POLAND-CHINA HOGS—Large type. 200 lbs. in 6 months. I guarantee to please you. O. L. Linn, Linview, Modesto, Cal.

BIG-TYPE POLAND-CHINAS—Stock from the best herds of the Middle West. N. Hauck, Alton, Humboldt Co., Cal.

REGISTERED POLAND-CHINA SWINE—Prize-winners. Finest stock in the State. \$20 up. M. Bassett, Hanford, Cal.

POLAND-CHINAS—Big type combined with quality. Choice bred sows, gilts, boars. W. D. Trehwitt, Box 82A, Hanford, Cal.

LAKEVIEW STOCK FARM POLAND-CHINAS are money-makers. Satisfaction or money refunded. Geo. V. Beckman & Sons, Lodi, Cal.

CRAWFORD'S CALIFORNIA CHINAS are prolific and profitable. Can fill your order for weanlings, either sex, for \$15.00 each. J. A. Crawshaw, Hanford, Cal.

REGISTERED POLAND-CHINAS—Young boars ready for service. Weanling pigs, both sexes. Prices attractive for quick sales. J. H. Cook, Paradise, Cal.

BOARS of serviceable age all sold. We have a few choice gilts bred to John Henry; an exceedingly choice boar. Also have a fine lot of Fall pigs, either sex. Bar N Ranch, E. A. Noyes & Son, Props., Sutter, Calif.

LARGE NUMBER of excellent young boars ready for immediate service. Weanlings of either sex. Sired by Joker, first prize boar at Wisconsin State Fair, 1915. Sows and gilts, sired by Iowa Wonder and bred to Joker and Sunnydale's Chief. For prices and further information write Geo. A. Smith, Corcoran, Cal.

MAKE BIG MONEY with our famous Whitten Ranch Big Type Poland-Chinas. Prolific breeders and profitable feeders. Grow rapidly, fatten quickly. Top the market at 225 lbs. in six months. Make greatest profit for feed consumed. Prices reasonable; satisfaction guaranteed. Send for free illustrated book, "Hogs for Profit." Finest ever issued. Packed with valuable information; tells how to become successful. Ranch in Tulare County, but address owner, R. H. Whitten, 610A Security Building, Los Angeles.

Berkshires.

BERKSHIRES—Fair Oaks Ranch, Willits, Cal.

REGISTERED BERKSHIRES—Geo. M. York, Modesto, Cal.

HOPLAND STOCK FARM—Registered Berkshires. Prices on application. Hopland, Cal.

MODEL HERD BERKSHIRES—Bred for size and quality. Weanlings and gilts. J. L. Gish, Laws, Cal.

30 REGISTERED BERKSHIRES—Boars and gilts for sale. J. H. Benedict, Lemoore, Kings county.

CARRUTHERS FARMS BERKSHIRES—Cholera immune. Second annual sale August 2, 1917. Mayfield, Cal.

ROSE CREST BERKSHIRES—Rivals Champion Best blood. Open and bred gilts. Service boars. F. L. Hall, Perris, Cal.

REGISTERED BERKSHIRES—Special offering. These service boars at prices to move them quick. Write us. Imperial Stock Farm, Morgan Hill, Cal.

BERKSHIRES—Bred sows and weanling pigs. Write for prices and pedigrees before buying. Butte City Ranch, Box P, Butte City, Glenn Co., Cal.

JUNIOR CHAMPION BOAR for sale. Brinton's Longfellow, 166579, of big bone, short pasterns, great length and depth. Oak Grove Dairy Farm, Woodland, Cal.

IMMUNIZED NORMANDY BERKSHIRES—Good type. Breeding stock, any age, for sale at all times. Cast iron guarantee. Arlington Smith, Visalia, Cal.

EFFICIENCY FIRST BERKSHIRES—Ten firsts, all championships Nevada State Fair, 1916. Laurel Champion and Grand Leader breeding; any age. Joseph Wilson, Jr., Mason, Nevada.

BERKSHIRES—I have one of the best herds on the Pacific Coast, including Grand Champion Sow, Reserve Grand Champion Boar under one year, Third Aged Boar, etc. Frank A. Brush, Santa Rosa, Cal.

REGISTERED BERKSHIRES—Progeny of Improver B. Young stock now ready for sale. Start your herd with breed and strain of established reputation for California conditions. Geo. G. Meckfessel, Berlin, Cal.

CHOLERA IMMUNE BERKSHIRES—A few choice gilts, large enough to breed for Fall litters. Also Fall boars at attractive prices. Several have strong line of best imported blood. Young pigs \$15 and \$20 each. All registered. Quality stock at utility prices. W. H. Waugh, Riverside, Cal.

GRAPEWILD FARM BERKSHIRES—World's Fair Grand Champion Grand Leader 2nd heads our herd, not only himself a champion, but the sire of Champions. At the 1916 California State Fair his daughters won first in all of the senior sow classes, including the Grand Champion Sow. At the 1916 Oregon State Fair a Grand Leader sow was Junior Champion. We are offering a number of choice boars of exceptional breeding and are also booking orders for Fall pigs. A. B. Humphrey, Escalon, San Joaquin Co., Cal.

Duroc-Jerseys.

REGISTERED DUROCS—Either sex at all times. W. P. Harkey, Gridley, Cal.

BIG TYPE DUROCS—Quick maturing. Easy keeping. Frederick M. Johnson, Napa, Cal.

REGISTERED DUROC-JERSEYS—S. S. Southworth, Napa.

DUROC-JERSEY REGISTERED HOGS—River Bend Farm, St. Helena, Cal.

DUES HERMANOS REGISTERED DUROCS—Duvonck & Pickersgrill, Ukiah, Cal.

WINTON DUROC-JERSEY FARM, Winton, Cal.—High-class purebred hogs, both sexes, any age.

REGISTERED DUROC-JERSEY SWINE—Both sexes. Big-boned type. B. F. Kendall, Hardwick.

REGISTERED DUROCS—Crimson Wonder stock. Young stock, both sexes. L. D. Collins, Denair, Cal.

HEAVY BONED DUROCS—A few service boars for sale. Ormondale Co., Route 1, Redwood City, Cal.

REGISTERED DUROCS of guaranteed breeding. All ages. Weaned pigs, \$10. H. E. Boudier & Son, Napa.

DUROC JERSEYS—Sow and boar pigs from Registered Stock. Low prices. Delta Farm and Live Stock Co., Colton, Cal.

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DUROC JERSEYS—Herd boars. E. N.'s Colonel and Tulare Boy. Sweepstakes winner at Fresno, 1915. Choice breeding stock. J. P. Walker, Visalia.

CROLEY'S BALANCED HOG FEED—the cheapest feed to fatten hogs. Write Geo. H. Croley Co., Inc., Live Stock Supplies. 631-637 Brannan St., San Francisco.

REGISTERED DUROC-JERSEYS—Service boars from prize-winning stock are money-makers. They grow faster. New England California Corporation, Ripon, Cal.

FIRST PRIZE HERD—Comprising the three most noted families of the breed: Golden Model, Crimson Wonder and Colonel. Offering line bred show winners and show prospects in each family as good as can be found in United States. Also weaned pigs. Seeing is believing. It will pay you to investigate this offer. Haden Smith, Woodland.

THE DE VILBISS HERD of Large Type Durocs. A few 6-mo. boar pigs for sale that would weigh in show condition 350 lbs.; at maturity 1000; price \$50 and \$75. Am booking orders for spring and summer pigs, weanlings, \$25 up. One sow, a daughter of the World's Grand Champion boar and bred to a son of the World's Grand Champion sow of 1915, price \$350. One yearling gilt, daughter of 1st prize Senior sow at State Fair 1916, bred to 1st prize Junior yearling boar of same show, price \$250. Yours for better hogs. J. M. DeVilbiss, Patterson, Cal.

Yorkshires.

LARGE YORKSHIRES—The ideal hog for the progressive farmer. Young stock for sale. A. L. Tubbs Co., Calistoga, Cal.

Chester Whites.

BILLIKEN HERD OF CHESTER WHITES—The type that is ready for the market in less than seven months. The easy feeders and big producers; sold out of bred gilts and service boars; October farrows to offer as follows: 8 boar pigs and 18 sow pigs; these are from 6 different litters and 3 different sires. Order now before these are all sold. Description and prices on application. C. B. Cunningham, Mills, Cal.

REGISTERED IMPROVED CHESTER WHITES—Grizzly Bear Ranch, East Auburn, Cal.

Essex.

LITTLE BLACK ESSEX—New crop nearly ripe. A few fine youngsters left. L. W. Mill-sap, Yolo, Cal.

Hampshires.

BELLA VISTA HAMPSHIRE SWINE—from prize-winning stock. J. W. Henderson, First National, Berkeley.

Tamworths.

BEAVER LODGE TAMWORTHS—Service boars. Write for prices and pedigrees. A. G. Lane, Amsterdam, Cal.

DAIRY CATTLE.

Holsteins.

A. R. O. HERD OF HOLSTEINS—Alex. Whaley, Tulare, Calif.

BREEDER OF HOLSTEIN-FRIESIAN CATTLE—Dr. Ben Stetson, Napa, Cal.

REGISTERED HOLSTEIN CATTLE—E. E. Freeman, Route B, Modesto, Cal.

REGISTERED HOLSTEIN BULLS for sale. Sunnybrook Ranch, Willits, Cal.

REGISTERED HOLSTEIN-FRIESIAN CATTLE—J. M. Campbell, Escalon, Cal.

REGISTERED HOLSTEIN BULLS for sale. C. L. Morse, Route B, Modesto, Cal.

CHOICE HOLSTEIN bulls for sale. No females. Millbrae Dairy, Millbrae, Cal.

GOTSHALL & MAGRUDER—Breeders of Registered Holstein-Friesians. Ripon, Cal.

BREEDERS OF REGISTERED HOLSTEIN CATTLE—McAlister & Sons, Chino, Cal.

REGISTERED HOLSTEIN BULLS, \$50 to \$150. Glorieta Stock Farm, Woodland, Cal.

CREAMCUP HERD—Registered Holsteins; Pontiac calf calves. M. Holdridge, Modesto, Cal.

REGISTERED HOLSTEINS—A. W. Morris & Sons, Corp., Importers and Breeders, Woodland, Cal.

BREEDERS OF REGISTERED HOLSTEIN cattle and Berkshire pigs. Whittier State School, Whittier, Cal.

THE HENDERSON CO.—Breeders and importers. Registered Holsteins. Sacramento Bank Bldg., Sacramento.

TWO SERVICEABLE SONS of Colantha Sir Pontiac Aaggie for sale. Moorland Farm, K. W. Abbott, Milpitas, Cal.

FOR SALE—Two registered Holstein cows with A. R. O. records. Write for particulars. J. W. Benoit, Route C, Modesto, Cal.

PACKWOOD FARM HOLSTEINS—Fine young bulls of serviceable age out of tested A. R. O. cows. W. F. Mitchell, Visalia.

J. H. HARLAN, WOODLAND, CAL.—Breeder of Registered Holsteins. Sold out at present. Watch for announcement on King Valdega.

THE MCCLUD RIVER LUMBER CO., McCloud, Cal.—High-class thoroughbred Holstein bulls for sale. Write for prices and pedigrees.

TULARE GUERNSEY AND HOLSTEIN Farm is offering young bulls of both breeds. Excellent breeding. Prices reasonable. W. J. Higdon, Tulare, Cal.

FOR SALE—Carload or less, full-blood, unregistered, tuberculin-tested cows and heifers. 3-year-old Holstein bull from registered sire and dam. All in fine condition. E. S. Burrough, Cloverdale, Cal.

FOR SALE—Two registered cows, one with record 24.59. Sister to other one made 23.10 as a two-year-old. Both bred to a 30-lb. sire. Geo. Kounias, Modesto.

REGISTERED HOLSTEINS—Grandsons of King Segis and of world's record cow Cream-elle Vale. Will build up the production and value of your herd. Write or call and see them. F. H. Stenzel, San Lorenzo, Cal.

GRANDSONS OF HENGVERELD DE KOL and out of A. R. O. cows for sale. Prices reasonable. Write for pedigrees. Many years of constructive breeding has made my herd one of the prominent ones of the San Joaquin Valley. R. F. Guerin, Visalia, Cal.

FOR SALE—From 1 to 70 extra fine, straight well-marked, light-colored, registered Holstein heifers, from 8 to 20 months old. Those old enough are being bred to a first-prize son of Prince Gelsche Walker, whose dam has a high yearly record. Some of these heifers are sired by bulls whose dams have from 35 to 37 pound records. They carry the very best blood of the breed and are good enough for any herd anywhere. Prices to fit any pocket-book. Geo. A. Smith, Corcoran, Cal.

Jerseys.

JERSEY BULLS from Register of Merit cows. C. D. Hayworth, Modesto, Cal.

REGISTERED JERSEYS—Young bulls and bull calves. T. B. Purvine, Petaluma, Cal.

YOUNG REGISTERED JERSEY BULL Calves at reasonable prices. O. J. Ames, Oakland.

JERSEY BULLS—Sons of Gertie's Lad and Gertie's Son's Victor. A. A. Jenkins, Tulare, Cal.

BREEDER OF REGISTERED JERSEY CATTLE—Duroc Swine. Young stock for sale. W. J. Hackett, Ceres, Cal.

CHOICE REGISTERED JERSEY FEMALES—Fresh and Springers. Breeding and individuality the very best. McLouth, Orland, Cal.

REGISTERED GUERNSEY BULL—No. 24342 from A. R. and imported stock. Write for prices and pedigree. A. G. Lane, Amsterdam, Cal.

JERSEY BULLS AND BULL CALVES—Sons and grandsons of 2 and 3-lb. cows. None better. Cheap for quality. N. H. Locke, Lockeford, Cal.

VENADERA HERD OF JERSEYS offers calves from Register of Merit Cows with official yearly records. Write for list of bulls. Guy H. Miller, Route 1, Modesto, Cal.

Guernseys.

BELLA VISTA GUERNSEYS—Males from A. R. dams, \$100 up. J. W. Henderson, 1st National, Berkeley.

TWO REGISTERED GUERNSEY BULLS—A. R. breeding; of serviceable age. Also a few bull calves. E. R. Frey, Byron, Cal.

REGISTERED GUERNSEY BULL—Two years. Best imported breeding, extra size and a show animal. H. S. Van Vlear, R. D. 2, Lodi, Cal.

EDGEWOOD FARM GUERNSEYS—First in the show ring and in official records. Few animals of either sex for sale. Edgewood Farm, Santee, Cal.

PACIFIC GUERNSEY HERD—Cattle selected from the best imported and Advanced Register Stock. Now offering choice bulls. C. S. Rasmussen, Lodi, Cal.

Ayrshires.

AYRSHIRES—Registered; all ages. E. B. McFarland, 412 Claus Spreckels Bldg., San Francisco.

AYRSHIRES—Registered—75 head. All ages. Young stock for sale. Le Baron Estate Co., Valley Ford, Cal.

FAIRVIEW AYRSHIRES AND DURHAMS—Bred for quality. Choice young stock. Geo. Fay, Sheridan, Nevada.

BEEF CATTLE.

SHORTHORNS—Fair Oaks Ranch, Willits, Cal.

SHORTHORNS—Carruthers Farms, Mayfield, Cal.

GEORGE WATTERSON—Breeder registered Herefords. Bishop, Cal.

SIMON NEWMAN CO., Breeders of Registered Herefords, Newman, Cal.

REGISTERED HEREFORDS—H. H. Gable, Diamond G Ranch, Esparto, Cal.

HOPLAND STOCK FARM—Registered Shorthorns. Prices on application. Hopland, Cal.

INNISFAIR DAIRY SHORTHORNS—Registered young bulls for sale. Alexander & Kellogg, Suisun, Cal.

REGISTERED AND UNREGISTERED—Shorthorn bulls for sale. Paicines Ranch Co., 320 Sharon Bldg., San Francisco.

BREEDERS OF REGISTERED SHORTHORNS—Milk strain. Choice young stock for sale. John Lynch Ranch, Box 321, Petaluma.

REGISTERED YEARLING SHORTHORN Bulls—Heavy-boned, thick-necked Scotch and Scotch-topped breeding. Ormondale Co., Route 1, Redwood City, Cal.

D. O. LIVELY STOCK FARM, INC., 216 Hobart Bldg., San Francisco, breeders of Hereford cattle. A few choice heifers for sale. We buy and sell livestock on commission. Farm at Mayfield, Cal.

SCOTCH AND SCOTCH-TOPPED SHORTHORNS—We have the largest herd of straight Scotch cows in California. Foundation stock of both sexes for sale; also a choice lot of range bulls. Barco Ranch, Hollister, Cal.

SHORTHORNS—Herd headed by grandson Whitehall Sultan. Calves sired by \$10,000 Prince Imperial for sale. One or a carload for sale. Get our prices before buying. Butte City Ranch, Box P, Butte City, Glenn Co., Cal.

SHEEP AND GOATS.

CHAS. KIMBLE—Breeder and Importer of Rambouillets. Hanford, Cal.

BISHOP BROS., SAN RAMON, CAL.—Breeders and Importers Shropshires.

DORSETS AND ROMNEYS—Dorset ram lambs for sale. John E. Marble, Los Angeles.

KAUPKE BROS., WOODLAND, CAL.—Breeders and Importers of Hampshire sheep.

SHROPSHIRE—Ewes and Ewe lambs for sale. International winner heads flock. Butte City Ranch, Box P, Butte City, Cal.

F. A. MECHAN ESTATE, Petaluma, Cal.—Breeders and Importers of Shropshire, Rambouillets and American Merinos, both sexes. Also Red Polled cattle. Take electric car at Petaluma or Santa Rosa for Live Oak Ranch.

HORSES AND MULES.

REGISTERED SHIRES—Black Hawk Stock Farm, Importers and Breeders. Easton & Ward, Proprietors, Burlingame, Cal.

MISCELLANEOUS.

FEED, FREE RANGE, State, Government land, any amount. Booklet free. Joseph Clark, Sacramento.

CROLEY'S BALANCED DAIRY FEED—the cheap milk producer; and Croley's Calf Meal—the best California calf raiser. Geo. H. Croley Co., Inc., 631-637 Brannan St., San Francisco.

A Banker's Experience in Financing Dairy Farmers.

(Continued from first page.)

the better dairyman he becomes the more certain are we that his deposits with us will be enlarged in later years.

Poor Cows Poor Risks.

"Naturally, many poor cows have been purchased; and we have at all times encouraged borrowers to dispose of them at beef prices rather than keep them in their herds. In such cases we agree to loan additional money for the purchase of a good cow. For instance, a dairyman might have paid \$80 for a cow and find she can't earn her keep. We advise him to sell her to the butcher for, say \$50, and loan him an additional \$50 to buy a good cow. True, we have more money involved in the deal, but we are surer of getting it than if the farmer kept the 'boarder.' Good cows are more plentiful now than they used to be; so we advise every new borrower to sell any cow that will not produce 300 pounds of fat in a year and agree to loan him enough more money to get a good one."

Financing Purebreds.

Not only has Mr. Flaherty's bank done an extensive loan business on grade cattle, but on purebreds as well. This is what he says in that respect: "Of course we early saw the desirability of purebred herds in the community; and as the Jerseys seemed to prove entirely satisfactory, we have financed the purchase of approximately 100 registered Jerseys during the past two years. We realize the advantage of community breeding centers and are lending our support to the purebred Jersey movement in the hope that this may become the Jersey breeding district of California. Our loans on purebred cattle have been made in the same manner as those on grades, except that the purebreds have been insured against accident and sickness with a reputable insurance company. Two or three of them died, but we always received their full value from the insurance company."

Several times during our conversation, Mr. Flaherty emphasized the belief that anything which makes the farmer more prosperous is certain to be reflected in the deposits of the country bank. Nothing more clearly proves his sincerity in this than the following statement: "This year we are going still further in our attempt to finance the dairy industry by setting aside \$10,000 which will be loaned to dairymen for the purchase of silos. These loans will be made on open notes, but the financial responsibility of the borrower will naturally be an important factor. This, we believe, should improve the risk on our dairy cattle loans and add to the financial resources of the community at the same time."

Bankers Benefit.

From a farmer's standpoint the arrangement was bound to be satisfactory, especially in view of the fact that in many instances the bank financed the entire transaction and has been lenient with borrowers at times when such leniency seemed to be warranted. But bankers will be more interested in knowing how it has developed the banking field of Glenn county.

Probably the best evidence that it is thoroughly sound and practicable is the fact that every bank in Glenn county now does a cattle loan business; but a more concrete example of the benefits may be seen in the report of the bank with which Mr. Flaherty is connected. There it is shown that in less than four years the bank has increased its deposits from nothing to over \$220,000. "Of course," he remarked, "this is not all due to the loans we have made on dairy cattle; but we attribute no small amount of our success to that feature of our business, as it has induced more prosperous conditions for our farmers. Neither do we assume credit for the rapid strides the dairy cow is making in this community; although we believe we have contributed our share towards her advancement."

SHEEP TO EAT WEEDS.

[Written for Pacific Rural Press.]

Sheep just to clean up weeds and a little alfalfa on a small place are kept by Tom Dutra of Stanislaus County. They cost nothing and return a nice profit in wool and lambs. Mr. Dutra got a grade Hampshire ewe in the winter of 1915-16. She was bred to a neighbor's buck and in May dropped two lambs. Along in September he bought a buck and bred these lambs in early December. The old ones were sheared in the fall, yielding, as Mr. Dutra remembers it, 13 pounds each of wool that sold at 16 cents per pound.

It took him about 15 minutes to shear each one. With the sheep upside down and its head between his legs, he started shearing at the neck, then sheared its belly and legs inside, then let it stand up while he sheared the sides and back.

A little shed is provided for shelter under a tree. The investment is small, feed negligible, profits high in proportion, and many weeds kept down.

PREFERS SLOP FEED FOR RANGE HOGS.

[Written for Pacific Rural Press.]

Although self-feeders have been found entirely satisfactory with hogs that have had some grain from time of weaning to fattening on the New England-California Corporation's ranch in San Joaquin county, Superintendent Vandever states that he has not secured such good results with hogs that have been allowed to range on the bottom lands of the ranch from pignood.

His objection to the free feeder system with such hogs is that, not being accustomed to a regular supply of grain before them at all times, they eat too ravenously and do not digest their feed as well as they should. For that reason he prefers feeding his grain soaked in the form of slop to his range-raised feeders.

Wash your hands and put on clean clothes before milking. Do not milk with moist hands. The practice tends to contamination.

COWS LOVE SALT AND MUST HAVE IT

Experiments Prove That Without It Their Vitality Suffers and Their Milk Runs Low.

Simplest Method of Supplying Needed Amount Is to Salt Hay While Stacking or Baling.

Salt is such a common thing that the very important part it plays in the health and milk yield of the dairy herd is perhaps not realized by many farmers.

Experiments conducted at the Wisconsin State Experiment Station prove conclusively that salt should be supplied to dairy cows unless the ration furnishes a sufficiency thereof. It is calculated that the minimum quantity in the food to keep a cow of 1000 lbs. live weight in flourishing health is that which is equivalent to $\frac{1}{4}$ oz. of salt per day, and that a cow in milk needs as much more as will restore the proportion removed in the milk, namely, a little over $\frac{1}{2}$ oz. of salt for every 20 lbs. of milk.

The conclusions from these experiments are briefly as follows:

"In every case the cows exhibited an abnormal appetite for salt after having been deprived of it for two or three weeks, but in no case did the health of the animal, as shown by the general appearance, the live weight, or the yield of milk, appear to be affected until a much longer time had elapsed. This period of immunity varied with individual cows from less than a month to more than a year. There was finally reached a condition of low vitality in which a sudden and complete breakdown occurred. This stage was marked by loss of appetite, a generally haggard appearance, lusterless eyes, a rough coat, and a very rapid decline in both live weight and yield of milk. If salt was supplied at this period recovery was rapid. In one case potassium chlorid was given instead of common salt (sodium chlorid). Considerable of the potassium salt was eaten, though cows ordinarily refuse to touch it, and recovery followed as quickly as when common salt was supplied—evidence that not the lack of the sodium but the lack of chlorin was responsible for the troubles. The breakdown due to the lack of salt usually occurred after calving, when the milk flow was heavy, and generally the cows giving the largest amount of milk were the first to show distress."

Farmers who salt their hay when stacking or baling have found the plan an excellent and profitable one. The salt more than pays for itself in the increased weight of the hay, and besides improving the feed, it removes the danger of musting by checking the growth of molds when the moisture content of the hay is high. This is particularly true of alfalfa hay.

Twenty pounds of salt to each ton of hay should be used, which should be sprinkled on by hand as each three feet of the hay is stacked.

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STOCKTON, CAL.

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In terms of dollars and cents the Holsteins are talking most effectively for themselves. Purebred Holstein cattle are the choice of every public institution or organization which attempts to produce milk in a scientific manner. Just ask a man who owns Holsteins, if you want to hear a story of prosperity. Every angle of Holstein superiority is fully covered in the books and pamphlets which are sent free for the asking. There's big money in the big "Black and White" Holsteins.

Send for FREE Illustrated Descriptive Booklets. The Holstein-Friesian Association of America F. L. Houghton, Sec'y, Box 230 Brattleboro, Vt.

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More calves have been raised on Blatchford's Calf Meal than on all other milk substitutes combined.

100 lbs. makes 100 gallons of milk substitute, costing only one-third as much as milk. Prevents scouring and insures the early maturity of sleek, handsome calves.

It is steam-cooked and no trouble to prepare or use.

Write for Pamphlet "How to Raise Calves Cheaply and Successfully with Little or No Milk." At dealers, or

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Petaluma.

THICK, SWOLLEN GLANDS

that make a horse Wheeze, Roar, have Thick Wind or Choke-down, can be reduced with

ABSORBINE



also other Bunches or Swellings. Nobliater, no hair gone, and horse kept at work. Economical—only a few drops required at an application. \$2 per bottle delivered. Book 3 M free. ABSORBINE, JR., the antiseptic liniment for mankind, reduces Cysts, Wens, Painful, Swollen Veins and Ulcers. \$1 and \$2 a bottle at dealers or delivered. Book "Evidence" free. W. F. YOUNG, P.D.F., 88 Temple St., Springfield, Mass.

Raising Poultry for Profit

ADVERTISING HATCHING EGGS.

[Written for Pacific Rural Press by Susan Swaysgood, Pomona.]

In marketing your product, don't forget that the State Market Association is behind you, helping the small farmer and poultryman to come into his own. But always God helps them who help themselves and it is the same with this association. It won't pay to sit back and wait for the wagon to come along and give you a ride to an easy market. You must do your part.

If you want a city trade for fresh eggs you must advertise. Then you must have up-to-date, clean containers, with your name and the name of your farm or ranch on in nice large letters. We can't do business now without the printer. He is our main-stay in letting people know what we have to sell. And it takes a good bit of common sense to choose the right mediums for advertising. If you want to advertise hatching eggs you need a medium that circulates among the class of people that hatch and raise chickens. It would not be profitable to advertise in a city paper because, as a rule, city people are not interested in hatching eggs.

And there is a difference in city papers. If possible, choose the one that circulates among the people who have money to buy the things you have to sell. And no matter what you are advertising, don't expect to build up a profitable trade from one or two advertisements. Keep at it. If you are trying to sell to farmers or fanciers, you must remember that they are busy people and unless you remind them that you still have hatching eggs to sell, they will think you are out of business. Mr. Har-ker, of the Fanciers monthly, always says of an advertiser who stops his ad, "He is dead." And so far as business is concerned he is right, for there is no class of business so soon forgotten as the advertiser of hatching eggs. What I always did was to cut the ad down in slack time to just a card. This tells the reader that you are still in business and gives him your address. This method of keeping your name before the reader is much better than having a big ad for a few weeks, then dropping out of sight. This is the season when the spring advertiser is flush, shortly most of them commit the folly of dropping their ads, because they are sold out of stock or it is too late for eggs. Now if you value future business, don't do that, but reduce the size of your ad and keep your name before a public that always appreciates business rules.

HOW TO SELL.

If you have to sell hens to make room for your chicks, sell to reliable commission men if possible. If you are situated so that you cannot ship, and have to sell to the man at the door, stand up for your price. Good fat hens should bring 22 cents a pound; yet a neighbor was told by one man he could only pay 17 cents. And after you have agreed about the price ask to look at his scales. I don't say all these men who buy poultry and eggs at the small far-

mer's door are dishonest, but there is a big proportion of dishonest men in it.

CLEAN UP THE YARDS.

When removing old stock to make room for the growing young, all yards must be absolutely clean if you expect the young stock to thrive. If there is not time to grow a green crop on the ground, at least spray it well with some good germicide and then turn it over with a spade or plow. Cabbage or kale gives the best results in cleaning ground for poultry. These are both rank feeders and it takes some strong plant feeder to use up the droppings, or the gasses that are liberated from them, in order to make the ground sweet and clean.

QUESTIONS ANSWERED.

To the Editor: Had three hens die in about a week. On opening them, found white spots on liver; did not notice anything wrong with them until I found them dead; then their combs were a little dark, but did not notice any difference before they were dead. I feed sprouted barley in morning and wheat and gyp corn in the evening, with what bran and clabbered milk they will clean up during the day, and all the shells and grit they need with run of alfalfa patch. Can you suggest some remedy?—G. E. G., Tipton.

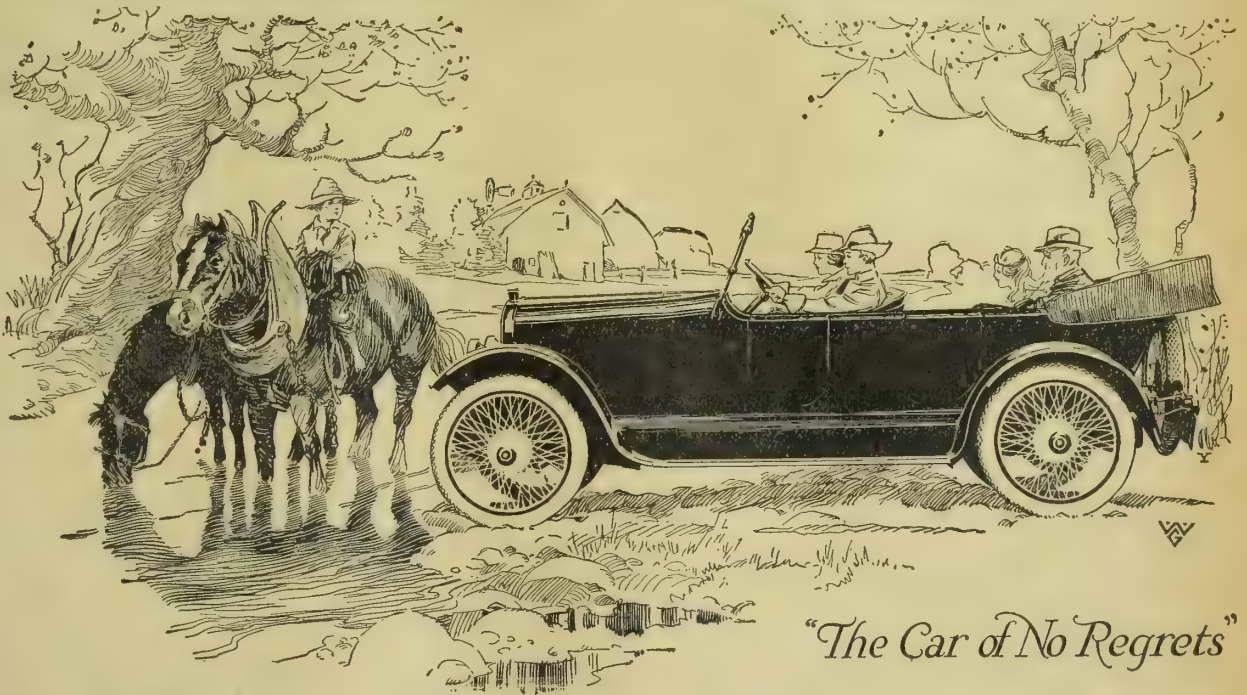
This trouble seems to be tuberculosis. If you have any more deaths I would suggest that you send the liver to the Davis Experiment Station. Your feed appears to be all right. There is some doubt that these hens may have had a congested liver, but it is either excessive use of condiments or starchy foods, or bad beef-scrap that causes that and as you do not mention using powders or mash feeds I feel sure it is not congestion. If it is tuberculosis it will pay you to

get rid of the whole flock, then clean and spray your grounds before venturing to put any more chickens on it. Until you know, it will be as well to give the flock a little liver medicine—ten drops of nitro-hydrochloric acid in a quart of drinking water will stir the liver to better action, and may do away with the trouble. Give this about three days, then rest three days and give another three.

Turkey Eggs Fertile Ten Days After Mating.—A hen turkey began laying three or four days after mating with male birds. Will these eggs be fertile? If not, how long before they will?—G. R. A., Wheatland.

[Answered by Susan Swaysgood.] All males must be with hens ten days before eggs are safe to hatch.

Don't allow the bull to discover his own power. Treat him with kindness, but firmness, and never allow him to be teased. Don't allow him to run with the herd.



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UNFAILING SERVICE on FARM or BATTLEFIELD

Four luxurious body models mounted on the famous King chassis adopted for light armored cars by the U. S. Army and U. S. Marine Corps

FOURSOME—\$1585—(Shown above)—Designed for those who desire the sport type of car, with long, low, rakish lines yet in perfect taste. "Narrow and "racy," this car seats four in comfort, has lengthy leg-room and is provided with four doors. A locked compartment just behind the rear seat gives generous and convenient storage space. The two front seats are of the "bucket" type. At their back is a combination tonneau and handy lamp which may be removed from its socket and carried about the car. Color: deep maroon.

TOURING—\$1585—With all the advantages of a 120-inch wheel-base, this car has the roominess of a Six of 126 to 128 inches due to compactness of King V-type motor. Has many novel conveniences, and upholstery and finish are of the highest grade. The ideal large-family car. Seats seven. Color: dark green.

SEDAN—\$2150—A year 'round car of the most luxurious type, upholstered in highest grade cloth and equipped with divided front seats. Sides completely removable in a few minutes without leaving car, and as easily replaced. A special compartment behind rear seat is provided for storage of side sections. With sides in place this seven-passenger model becomes a perfect closed car, all sections fitting without possibility of rattle and with no appearance of being improvised. Three colors: beaver brown, deep maroon or suburban blue.

ROADSTER—\$1585—A very popular model with farmers, physicians and salesmen, because of large storage space. Has two roomy compartments; one behind front seat and the other under rear deck. Comfortable for three. Color: French gray.

ALL PRICES QUOTED MAY BE ADVANCED AT ANY TIME

Write for descriptive matter and name of nearest dealer

Wire Wheels \$100 extra—all models

Prices F. O. B. Detroit

KING MOTOR CAR COMPANY, DETROIT, MICHIGAN

ACORNS FOR POULTRY.

[Furnished by Prof. M. E. Jaffa, University of California.]

The practice of the use of acorns as a food by the American Indian is still kept up, and if the acorns were prepared for chickens in a manner similar to that adopted by the Indians, there would be no objection whatever to their use as poultry food, and no harmful results could follow. Acorns without any preparation, are used successfully in turkey raising, as they supply a certain bitterness which acts as a tonic for the turkey. With laying hens, however, it is a different proposition. The bitter principle in the acorn would probably cause digestive disturbances if extensively fed. They may be prepared, however, so that they will form a good food for poultry. The shelled nuts should be split, dried and ground with a mortar and pestle. The sifted meal

is placed in a convenient vessel and leached to free it from the bitter principles present. It seems not improbable that improved methods of removing the tannin and bitter principles in most varieties of acorns, might result in utilization of the acorn crop which is fairly large and generally wasted.

The leached meal could be used in the mash as a substitute for some of the mill by-products, provided a sufficient amount of some highly nitrogenous food was used, as acorns are low in protein. Just how much, would depend upon what were the other ingredients of the mash. A very small quantity should be used at first, and there is no reason why two to three pounds of the leached meal could not be used in the mash. When it is realized that the Indians use this meal as a mush or porridge, it is very easily understood that it could not be harmful in any way to fowls.

ANALYSIS OF ACORNS.

	Shell	Analyzed.				Calculated to Dry Matter			
		Water.	Ash.	Protein.	Carbo-hydrate.	Shell.	Ash.	Protein.	Carbo-hydrate.
Acorn, Q. lobata—									
Kernel		34.39	1.39	4.18	54.65	5.39	2.12	6.36	83.30
Whole	17.8	27.92	1.13	3.39	45.38	4.38	2.49	1.59	4.73
Acorn, Q. lobata—									
Kernel		7.50	2.40	5.20	76.30	8.66	2.70	5.62	82.32
Whole	28.5	5.40	1.70	3.70	54.60	6.10	30.12	1.79	3.91
Acorn, Q. meryi—									
Kernel		4.10	2.40	8.10	48.00	37.40	2.50	8.55	49.81
Whole	35.6	2.60	1.60	5.20	30.90	24.10	35.60	1.64	5.33

About Cedar Oil.

[Written for Pacific Rural Press by Susan Swaygood, Pomona.]

A subscriber writes me that according to what I said some time ago she applied cedar oil to her chicks, and when she wrote she was wondering whether they were going to survive from the effects. Now I can only say in this as in all other remedies, they must all be used with common sense. When that is lacking, no remedy is safe, for the little chick has only a slight hold on life to begin with and if a person takes hold and rubs a poison (all these things are poisons to chicks) into a chick's system at the point most sensitive, the head, why they are going to suffer and perhaps die.

I do like to be helpful, but sometimes I vow to myself that I will not tell anybody what to do in these cases again, for I hate to know of the torture little chicks have to endure at the hands of people who do not use common sense in applying them. What I said was to rub a few drops

under the hen's wings and on her breast, and also it would not hurt to stroke a little around the chick's neck. This lady gets a dish and goes to work rubbing it in the chicks' heads, wings, vents and all around the necks until they pant. If she had used one drop of cedar oil to ten drops of common sense the chicks would be as lively as crickets.

Poultry Notes.

Mrs. H. R. Hageman of Ontario claims that she has the champion egg layers of Southern California. She has 24 nine-months-old White Rock pullets that in one month laid 515 eggs.

Kentucky has long been noted for her celebrities. The latest is a hen which has laid 83 eggs in 83 days. Some of her celebrities have not done so well as that.

John D. Yates of Modesto is now setting 400 eggs daily, of white and brown Leghorn, to fill his small chick demand. He will keep his hatchery running till July 10.


T. D. Neilson of San Lorenzo has laid a hen egg on our desk that is a record breaker. It weighs a trifle over 4 1/2 ounces.



BABY CHICKS.
BABY DUCKS.
BABY TURKS.
BABY GEENSE.

Hatching Eggs. Rabbits, Dogs, Cats, Pigs. Everything in Hair, Fur and Feathers.

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Coulson Co. Petaluma Cal.

Poultry Breeders' Directory

Rates in this directory, 3c per word each issue; or if carried weekly for one year, 2 1/2c per word.

RHODE ISLAND REDS—Eggs, \$1.00 for 15. P. M. Cox, Sonoma, Cal.

WHITE PLYMOUTH ROCKS—Hatching eggs from splendid layers. Mrs. J. B. Tupper, Route 4, Ceres, Cal.

HATCHED CHICKS from Barred Rocks. R. I. Reds, White Leghorns. Good stock. Send for circular. G. L. Hawley, Madera, Cal.

BLACK MINORCAS—Largest egg; whitest flesh. Eggs, \$1.00 per 13; \$5.50 per 100. Edward A. Hall, E. F. D. 1, Watsonville, Cal.

WHITE WYANDOTTES—Blue-ribbon winners. Eggs, \$2 to \$5. Chicks, pullets, cockerels. E. W. Stawetski, Route 2, San Jose, Cal.

CHICKENS, DUCKS, GEENSE, GUINEAS, Pea Fowl, Pigeons. Wm. A. French, 545 W. Park St., Stockton, Cal.

ANCONAS—First-class stock. Reduced price, \$2.50 per fifteen. Chicks, 25c each. Few choice birds for sale. J. B. Bell, Livermore, Cal.

INCUBATORS—For Essex Model Incubators at factory prices, write Geo. H. Croley Co., Inc., Poultry Supplies, 631-637 Brannan St., San Francisco.

MODEL POULTRY FARM—White Leghorn specialists. Our thirteenth year. Baby Chix and Hatching Eggs for sale. W. C. Smith, Prop., Corning, Cal.

SILVER AND GOLDEN PHEASANTS—\$5 pair; eggs, \$2.50 for twelve. Nine Silver Camp pullets, one cockerel. Mrs. B. S. Spaulding, Woodland, Cal.

EASTMAN'S BRED-TO-LAY Barred Plymouth Rocks—chicks, eggs, cockerels. We organize and trapnest. Fairmead Poultry Farm, Fairmead, California. Box P.

BABY CHICKS—From select free-range White Leghorn stock. Place orders early. Prices on application. Western Hatchery, Petaluma, Cal. W. S. Waldorf, Prop.

HICKS JUBILEE HATCHERY, Petaluma, Cal.—White Leghorn and Black Minorca chicks and hatching eggs. Circular "How to Raise and Feed Chicks" free.

BABY CHICKS from S. C. White Leghorns from trapnested hens with records from 192 to 297 eggs. Also S. C. Black Minorca chicks and eggs. J. W. Benoit, Route C, Modesto, Cal.

S. C. RHODE ISLAND REDS—230-egg record in 12 months. Hatching eggs, Chicks, Stock. Also Rose Comb Reds. Mating list ready. Wm. Larm, 3915 39th Ave., Fruitvale, Cal.

HOGANIZED AND TESTED—220-egg type White Orpingtons and Buttercups. Hatching eggs, chicks and cockerels for sale. Reasonable prices. For particulars, write M. Woodhams, San Mateo, Cal.

BABY CHICKS—We hatch from our own stock of 10,000 vigorous, healthy S. C. White Leghorn hens of heavy laying strain. Write for price list and further particulars. George Brothers, Petaluma, California.

BABY CHICKS—HATCHING EGGS—White, Buff, Brown Leghorns, R. I. Reds, Barred Rocks. Sturdy chicks from well-mated fowls. Prompt, efficient service. Write for circular. Campbell Poultry Ranch, Campbell, Cal.

PRIZE WINNERS—Houdans, Barred Rocks, buff, black, white Orpingtons; black Langshans; R. I. Reds; Silver Laced Wyandottes. Settings, chicks, cockerels. Trio Indian Runner Ducks—laying—\$5. C. L. McGee, 1635 Julia St., Berkeley.

MAY AND JUNE CHICKS—Will lay this fall if from our early maturing strain. Our Leghorns and Reds begin laying at 4 1/2 to 5 months. Leghorns, \$10 per hundred; Reds, \$12.50 per hundred. Brooke Farm (Rancho del Paso), 807 J St., Sacramento, Cal.

BABY CHICKS—From large, healthy, vigorous, heavy laying thoroughbred Single-Comb White Leghorns. \$10 per 100; \$2 per 100 when order is booked, and balance 5 days before delivery. I pay the express to your nearest express office. H. A. Schlotthauer, Exeter, Cal.

"FINEST HATCHERY IN THE WORLD"—Baby Chicks, White Leghorns, and Rhode Island Reds, settings, 100's, 1000's, hatched right in our \$60,000 brick and concrete hatchery from our quality heavy layers. Reasonable prices. Stock, Hatching Eggs. Bebbie Poultry Farm and Hatchery, Sunnyvale, California.

BARRED PLYMOUTH ROCKS—COCKERELS—Cockerels—Cockerels—Yes, we have them; also Hens and Pullets—all bred from our Champion Winners at California's leading shows. Also hatching eggs. If it's Barred Rocks you want, get in touch with me right away. Have bred them exclusively for nineteen years. Send for Catalog. Chas. H. Voden, Box 396, Los Gatos, Calif.

EXTRA QUALITY White Leghorn chicks, 12c until March 1st, then 10c. Carefully lined from MacFarlane, Young, Martin and Cyphers strains of foundation stock. Eggs \$1.50 per 15, \$2.50 per 30, \$5.00 per 100, \$50.00 per 1,000. Acres of free range connected with our breeding pens, 20,000 feet under roof. Only Jubilee incubators used; disinfected every hatch. Don't save 2c per chick in buying and lose a dollar per pullet

in raising; get the Best and Succeed. Newton Poultry Farm, Dept. 1, Los Gatos, Cal. Catalogue free.

TURKEYS, DUCKS AND GEENSE.

MAMMOTH BRONZE TURKEY EGGS—During May at \$2.50 per 10, \$20 per 100. M. M. Reiman, Planada, Cal.

BRONZE TURKEY EGGS—\$3.50 per dozen, immediate delivery. Brehm Bros., St. Helena, Cal.

FOR SALE—Mammoth Bronze Turkey Eggs Eastern stock prize winners. Mrs. Robert Farrell, Bolinas, Cal.

BRONZE TURKEY EGGS—By the setting or hundred. Also fine young Toms. Albert M. Hart, Clements, Cal.

COLORED MUSCOVY DUCKS—Quiet, quackless. Weigh up to 10 lbs. Good layers. Eggs, \$1.00 for 12. P. M. Cox, Sonoma, Cal.

MAMMOTH BRONZE TURKEY EGGS—\$3.50 per setting. Toulouse Geese eggs, 25c each. Mrs. M. Coghlan, Walnut Creek, Cal.

Classified Advertisements

Rates in this directory, 3c per word each issue; or if carried weekly for one year, 2 1/2c per word.

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TO REDUCE THE HIGH COST OF LIVING, send for our Wholesale to Consumer Catalog. Smiths' Cash Store, 106 Clay St., San Francisco.

PATENTS THAT PROTECT are procured through Pacific Coast Patent Agency. Savings and Loan Building, Stockton, California. Established fifty years.

AT LAST THE PERFECT SILO—THE Star Round; No hoops. No bolts. No experiments. Any one can erect. Close price. Address D. O. Lively, 215 Hobart Bldg., San Francisco.

SECOND-HAND WATER PIPE and Screw Casing. New threads and couplings dipped in hot asphaltum. All guaranteed. Send us your inquiry. Shecter Pipe Works, 396-8 Howard St., San Francisco.

GROCERIES WHOLESALE—Our prices are the lowest and our quality the highest. Dollars saved on every order. Freight paid within 100 miles. Send for catalog. Freezes and Company, Mail Order Grocers, 1264 Divisadero St., San Francisco.

EVERY SIZE WROUGHT IRON WATER Pipe and screw casing water pipe, guaranteed as good as new. Prices right. Send for catalogue. We beat no one; everybody gets a Square Deal. Weissbaum Pipe Works, 160 Eleventh St., San Francisco.

SEEDS, PLANTS AND TREES.

VALENCIA TREES—From selected buds. Magnolia Nursery, Whittier, Cal.

WANTED AT ONCE—30 sacks Tepary beans. Send sample and state lowest price. K. Knutsen, Turlock, Cal.

SUDAN GRASS SEED—Local grown and inspected, 35c per lb. while it lasts. Black amber sorghum, choice quality, 5 1/2c per lb. Modesto Farmers Union, Modesto, Cal.

SEED CORN—Egyptian white, large pure white kernels. High germination test. None better offered. Also milo maize, feterita, and Egyptian wheat. Modesto Farmers Union, Modesto, Cal.

ALFALEA SEED—There is a difference in the varieties and strains of alfalfa seed. Send your address for sample and our low price, and we will tell you just how our seed is selected—and why. Bomberger Seed Co., Modesto, Cal.

SEED BEANS—We sell direct to the grower. Buy now before the advance. Our stock is carefully selected. Satisfaction guaranteed. Tell us the nature of your soil and we will suggest the best variety. Modesto Farmers Union, Modesto.

WANTED.

WANTED, MARRIED COUPLE—Man experienced in general farm work and wife to cook for owner whenever needed. References required. Address, P. O. Box 34, Menlo Park, California.

WANTED—Sober and industrious man for orchard work, must be able to handle team and accustomed to irrigating. Good opportunity for right man. State references and experience. Address, Box 520, Rural Press.

WANTED—Young men and women to attend the Western Normal Courses—Normal and Academic. The Normal Course gives an adequate preparation for teaching, at a great saving in time and money. Academic course gives practical finish to education. Write for Bulletin "A." Western Normal, 524 E. Market St., Stockton, Cal.

COUNTRY LANDS.

STATE, GOVERNMENT AND INDIAN Lands.—Barrains overlooked. Free New Blue Booklet. Joseph Clark, Sacramento.

WANTED to hear from owner of good ranch for sale. State cash price and description. D. F. Bush, Minneapolis, Minn.

B. S. COELHO, CORCORAN, CAL. Owner—150 acres improved subdivided alfalfa dairy. Stratford. Keeps 85 cows. C. E. Robertson, 105 Montgomery St., San Francisco.

RANCH TO LEASE OR FOR SALE—9500 acres in Tehama County—8000 acres rolling hill land, 1500 low level land. Suitable for stock and general farming. Some fruit. All well fenced. Summer range in Trinity County also. Address, P. O. Box 124, Cottonwood, Cal.

ORCHARDISTS AND DAIRYMEN—Before you invest, investigate Mountain View, in the center of Santa Clara County's fruit and dairy section, 5 miles from Stanford University, 35 miles from San Francisco. Rich soil, abundance of water. Ideal climate. Write for catalogue. "California's Choice Acres." William P. Wright, Mountain View, Santa Clara Co., Cal. The Oldest Real Estate Office in Northern Santa Clara County. Established 1901.

A RARE OPPORTUNITY to secure a 20-acre Almond or Fruit ranch. Best of soil; two and one-half miles from town. No cash payment. Purchaser to bear the cost of improving only. This should appeal to salaried people who have in mind the securing of a country home that will insure a life income property. This offer is by owner and no commissions paid. For particulars apply to A. L. Hobbs, 507 New Call Building.

Four Real Bargains

1—Big Bull Tractor used as a demonstrator; has plowed about 20 acres; equip with Hyatt Roller Bearings, High Tension Magneto, Dust Trap, etc.; fully guaranteed. 10-20 H. P. 1916 model.

TRACTOR PLOWS

1—J. I. Case "Power Lift" Disc Plow, with wheel weights; used about 12 acres as a demonstrator; 3 disc, but can be used as a 2 disc.

1—J. I. Case "Power Lift" Mouldboard Plow, 3-12-in. bottoms; can be used as a 2-12. Used as a demonstrator. In perfect shape.

1—P. & O. "Little Genius" "Power Lift" Mouldboard Plow, 3-12-in. bottoms; used as a demonstrator. In perfect condition. Can be used as a 2-12.

As we are going out of the Plow business, we can also offer you some new two and three bottom J. I. Case plows "power lift" at a considerable reduction from the list price.

Hughson-Merton, Inc.

530 Golden Gate Ave.,

SAN FRANCISCO

Save \$200

Save \$65

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Mrs. Best's Letter.

SOME OF THE NEWEST THINGS SHOWN.

Dear Friends: Among the very newest things the shops are showing are the three-piece suits of silk for summer wear. They are simple in design and excellently adapted to large women. The coats are three-quarter length, full, and loosely belted. The long straight lines prevail. The deep V neck is finished by a flat small collar and flat reverses. The sleeves are medium in width, neither loose nor tight and end in a small flat cuff. The skirts are made medium full, gathered at the waist into a loose girdle of the same material. Some have two or three tucks of three-inch depth, others are stitched with silk, and still others are embroidered. The blouse is also simple; of the same color as the skirt and coat, but made of georgette crepe. The new square neck and V neck without softly flowing ruffles are shown, and some are still shown with the becoming large soft collar of white. Some of the skirts are elaborate, with gold or silver thread embroidery and these have the same bright note on the blouse half concealed under the georgette. Some of the blouses have the embroidery running around the blouse six inches up from the waist and then joined to the net or silk lining. Others have, by means of two straps of embroidery over the shoulders, an assimilated suspended effect. The sleeves are made full and without a lining. If they end in a cuff a bit of rose color is introduced there and a picot or hand rolled edged flounce drops gracefully over the hand. Most of these suits have been shown in dark blue taffeta with elaborate embroidery. The embroidery is about nine inches deep on the bottom of the coat and usually runs up the front and back of the skirt in panel effect or comes where the coat ends in a band. Pretty combinations of goods and colors have been shown too. Among them are tan satin and brown cloth, and grey cloth with blue silk.

Everywhere the long lined, loose dress is shown this spring. It comes in blue serge for street wear, in Jersey and sport silk for sports wear, and in taffeta and georgette for afternoon wear. The dress hangs from the shoulder and is loosely caught in at the waist by a girdle of the same material, or by one of the new girdles of large stones and metal filagree work. Some of these dresses are only slightly gathered on the shoulder and others have a yoke onto which the material is gathered or plaited. The sleeves are full and end in a snug cuff. The afternoon dresses are usually of tunic effect, some merely having a drop skirt, and others, when the tunic is opened at the sides like a mandarin coat, have an entire skirt. In pale blue and pink georgette crepe dresses the underskirt is usually heavily braided or plaited, or the tunic will hang flat and braided. Taffeta bands on the tunic and skirt help to give the dress more weight. The neck is finished in square or V shape by a braided band. A small flat collar appears in the back only. These dresses are very satisfactory, for they are light and dainty, pretty for afternoon and informal evening wear.

THE HOME CIRCLE

Over these dresses, of course, one must wear a coat, and there are many styles to choose from. The gay top coat of heavy material and prettily lined has been much advertised for motor wear. These come in Bolivia and Burella cloths in full flaring styles. Some swing from the shoulders and others have deep yokes. Most of them have big convertible collars, patch pockets and deep cuffs. They are very similar in style to the winter coats, but are shown in bright rose, blue, gold and green. There are some box-plaited models in three-quarter length to wear with separate skirts and street dresses. Dressy coats are shown in similar styles, but of silk, or silk and cloth combination. One dressy yet substantial coat that was different was of blue broadcloth and grey worsted. The main body of the coat and the sleeves were of blue but the worsted was applied in irregular style on the full flaring skirt. The shawl collar was of worsted as were the deep cuffs. The coat was belted loosely and had no pockets. Another pretty combination was of tan Jersey cloth, banded with blue taffeta. The coat hung loosely and had a flat blue collar and cuffs, blue belt, and deep band on the bottom. It was lined with blue too, and a blue sailor hat trimmed with tan ostrich tips was shown with it. All the coats are characterized by flaring on the bottom, large collars and cuffs, and braid trimmed pockets.

ROSABELLA BEST.

EGGS, AND HOW TO COOK THEM.

Egg Balls.—Boil eggs hard, cut in half, and take out the yolks, and mix with a few bread crumbs, chopped meat, melted butter, cream and salt and pepper. Mold into balls the size of an egg yolk. Put one in each half of the egg whites, set in a pan, and pour over them a teacup of cream. Sprinkle over some bits of butter, and brown in the oven.

Curried Eggs.—Mince a small onion very fine, and brown it in a tablespoonful of butter in a hot frying-pan. Mix a heaping teaspoonful of curry powder with a half cup of milk, pour into the pan and let it boil until thick; break the eggs in carefully and poach them in the mixture. Squeeze a little lemon juice over them before serving.

Poached Eggs with Cream Sauce.—Break fresh eggs into boiling water slightly salted. When set, remove from the water with a skimmer and pour over them the cream sauce: One teacup of sweet cream, a little chopped parsley, a tablespoonful of butter and a tablespoonful of flour mixed smoothly together, and salt and pepper to season. Boil three minutes and pour over the eggs.

Fricassee Eggs.—Boil a dozen eggs ten minutes. When cold, peel and slice. Season some grated bread crumbs with salt, pepper and nut-

meg, and beat the yolks of three raw eggs very light. Dust the eggs with flour, then dip into the beaten eggs, then into bread crumbs, covering well on both sides. Fry in hot lard.

Scalloped Eggs.—Break eight eggs into as many saucers, sift bread crumbs over each, dot with butter and season with pepper and salt. Fill the saucers with milk, bake till the eggs are set and serve hot.

Baked Eggs.—Separate the whites and yolks of six eggs, putting each yolk by itself in a cup. Add to the whites a saltspoonful of salt and a quarter of a saltspoonful of pepper; then beat them to a stiff froth, spread them on a buttered dish, and slip the yolks on top, laying them a little apart, and bake five minutes in a hot oven, or until they are a light brown. Dust pepper and salt over the top and serve hot.

Scrambled Eggs.—Melt one tablespoonful of butter in a saucepan. Beat four eggs light, and add a half teaspoon of salt and turn into the pan. Stir over a hot fire one minute and serve.

Fried Eggs with Pickles.—Put enough butter into a hot frying-pan to entirely cover the pan, break in as many eggs as it will hold, dust them with pepper and salt, cook to the required degree, and put them on a hot dish; meantime chop a large pickle fine and put it in the pan after the eggs have been taken up. Leave one minute, then put it on the eggs and serve at once.

Steamed Eggs.—Butter a dish and slide upon it six eggs broken as for poaching. Strew over them small pieces of butter. Set the dish over a pan of boiling water and turn another dish over it. In about four minutes the whites will be set, then sprinkle with salt and serve.

MARKING NAPERY.

Editor Home Circle: I wish to give a set of table linen as a wedding present, and would like information as to how it should be hemmed and marked.—Mrs. J. M. P., Soledad.

If you desire to, the cloth and napkins may be hemstitched, but the very fine linen from abroad is hemmed. The hem on the napkins is very narrow and that on the cloth not a great deal wider. Of course, you understand this is done by hand. The correct marking is the initial of the maiden name, as the wedding gifts are popularly supposed to be presented to the bride. On the cloth, the marking is placed so that when the cloth is in use the letter or letters are at the left of the person serving. The napkins should be marked so that when folded the initial will be in the center. In many cases there is a designated place on the pattern of the linen for the marking.

When meat soup is ordered for a convalescent, prepare it the day before and skim the fat off.

A UNIQUE AND DELICIOUS MARMALADE.

Peach and pineapple combined make a delicious preserve or marmalade. Use one-third shredded pineapple to two-thirds peaches, peeled and sliced, three-quarters pound of sugar to the pound of fruit, and cook carefully, with frequent stirring, until thickened and clear.

Good Health.

[By H. E. Pastor, M. D.]

Consumption and Climate.

About the first thing in the way of a remedial move that comes into the mind of a person who finds himself afflicted with tuberculosis is the question of climate. This matter—and it is important—has quite recently been touched upon by Assistant Surgeon General John W. Trask, U. S. Public Health Service, in one of his reports. Wild animals, he points out, are less prone to sickness than their fellows in captivity, usually housed in artificially heated buildings. Range cattle are freer from disease than those which are housed. And the indoor life in heated dwellings is no more favorable to man than to other animals.

Now, the climate best suited to the tuberculosis patient is the one which furnishes the most favorable conditions for outdoor life the greatest number of hours of the day, and the greatest number of days in the year. And while we are not writing this item with the intention of inviting an influx of one-lungers or no-lungers to California, we believe this State comes as nearly conforming to the requirements of this "best climate" definition as any other in the sisterhood of States. Its temperature is equable during most of the year, there is neither excess humidity nor excess aridity in the populated areas, the winds except for a few months in the late summer season are not violent, the atmosphere is clear, and the skies sunny. Dust and smoke—mechanical irritants—are not common. A thin pall of smoke and murk may sometimes cover the lower levels of our manufacturing cities, or a little dust on a windy day be encountered in the countryside; but such conditions are not common here.

It is not advisable as a rule for the victim of pulmonary tuberculosis to go away from home in quest of better climatic conditions. The unfortunate one can usually get the most climatic benefit by taking advantage of favorable weather conditions in his own locality. Sleep outdoors on a porch, if you have one, in ordinary weather, and in a room with open windows and doors when it is cold and stormy. The stay-at-home has better food, better care if under intelligent supervision, and is altogether more comfortable and safer than the one who goes to some distant place for the will-o'-the-wisp of a "better climate." So, unless the atmosphere of your home place is raw and cold for long stretches at a time, stay and make the best of climatic conditions where you are.

Health Jottings.

Asparagus induces perspiration.

Spinach is useful to those suffering from gravel.

Honey is wholesome, strengthening, cleansing, healing and nourishing, and the most digestible of sweets.

Tomatoes are a powerful cleanser for the liver, and a good remedy for indigestion.

Eggs contain a large amount of nutriment in a compact, quickly available form. Beaten up raw with sugar, they are useful for clearing and strengthening the voice. The beaten white of egg, with sugar and lemon juice added, relieves hoarseness.

THE SONG OF THE LONELY DUCKLING.

[By L. K. Hirschberg.]

Far across the meadow came a mournful little squeak.
I saw a little ball of fluff and little yellow beak.
A tiny duckling struggled thro' the grass that barred his way
And as I listened carefully I thought I heard him say—
Just a little water for my little beak to dabble in;
The other ducklings in the yard will not make room for me.
Just a little puddle for my little feet to paddle in,
Just a little pond for me.

I took my can of water and I made a little hole,
I filled it full of water-drops to please his little soul.
He dabbled, dabbled, paddled, spit-tered, spattered very gay.
And as I listened carefully I thought I heard him say—
Just a little water for my little beak to dabble in;
Nothing can be nicer than this hole so small and wee.
Just a little puddle for my little feet to paddle in,
Just a little pond for me.

THE STRONGEST THING IN THE WORLD.

This is quite a true story, and Christopher is a real boy. Although he has grown big now, I could take you to see him tomorrow if you wanted me to do so. Well, one cold, wintry morning, in a certain village, a woman opened her cottage door and found on the step a basket and in the basket a little baby boy. Somebody must have left him there; but although the cottage woman carried him indoors, she just couldn't keep him, because she had quite enough children of her own. So she took him to a house in the village where they looked after friendless little children, and there they took him in. All they could find out about his name was the word "Christopher," which was marked on his little night-shirt.

Christopher, of course, began to grow up, but the people who looked after him were not kind to him. He hadn't enough to eat and was pushed here and there. No one loved him as a father and mother would, so how could he grow up a nice boy? Sure enough, he didn't. Nobody would have him to work, because he would worry the pigs and let the sheep run out of the fields. He made all the children most awfully afraid of him. I know one little girl who used to burst out crying every time she saw him if she was alone. But don't say, "What a beast!" for Christopher didn't know how jolly it is to be nice. He had nobody to care about his being good, and it is dreadfully hard to be good when you've never had any one to love you and tuck you in at night.

Well, Christopher got worse and worse, and he couldn't get a smile from anybody. Even the best old man in the village said, "He's a bad fellow, Christopher; he'll never be cured." Christopher couldn't get any work and he couldn't get any money; but no one seemed sorry.

Yet there was a dear old lady near the village who had some cows, and she wanted somebody to bring them from the field each night and morning, to milk them, and to see that the shed was cleaned. So she said to somebody, "I wonder how that Christopher would do?"

That somebody replied: "Oh, don't take him! He'll kill the cows and ruin you. Why, nothing in the world could make him do anything or make him better."

Then the old lady said a queer thing. This is what she said:

"Well, I'm going to have him look after the cows, and I'll see if the strongest thing in the world will cure him."

She didn't say what the strongest thing was, and everybody thought that she was a silly old lady. But she took Christopher; and somehow the cows didn't die, and the cow-shed was kept clean. Nobody ever heard her scold Christopher. She got him a new suit of clothes, and she gave him five shillings a week, and nobody could find out that Christopher wasted the money in silly ways.

By and by Christopher, who had been the cheekiest boy you can think of, stopped being cheeky, the children coming home from school stopped being afraid of him, and his face became quite shiny and happy.

Then people went to the old lady and said, "How did you ever make Christopher so different?"

She said, "Oh, I tried the strongest thing in the world." Nobody could make her say anything more. This is really, really true.

Now guess what the strongest thing is. It changed Christopher; and if it could change Christopher, I am sure it could change the horriddest person you know. — Christian Commonwealth.

WHAT EVERY FARM SHOULD HAVE.

Every farm should have its buildings painted, as it adds immeasurably to the appearance of the place. Apart from this, painting is true economy, as it prevents decay.

Every farm should have trees, flowers and grass. In a land of flowers we should use them freely to add to the attractiveness of our farm homes and avenues of trees are a delight to all who behold.

Every farm should have a system of waterworks. Running water is one of the greatest of all boons, as a saver of labor.

Every farm should have a good lighting system. For convenience, cleanliness and simplicity, nothing is better than electric lights, but where these are not obtainable, acetylene lights are a good substitute. If compelled to use lamps, see that they are good and furnish a good light.

Every farm home should have good reading matter for the whole family. Books, papers and magazines are the connecting link between the farmer's family and the world at large. Have the supply as generous as the circumstances will permit.

SPELLING A COW'S MOO.

Some years ago, when Lucy was a little girl, learning to write, the teacher gave her this to copy: "M-o-o, moo."

"What is it?" asked Lucy, looking puzzled.

"That is 'Moo,' the noise a cow makes, Lucy."

Then Lucy began to copy "Moo." But she did it in a queer way. She made an M at the beginning of each line, and followed each M with a whole string of o's all across the slate, like this, Mooooo.

"But that isn't right, Lucy," said

the teacher, when the little girl showed her the slate. "You must copy the word as I have written it. So,—'Moo.'"

Lucy looked at the teacher's copy and then at her own attempts, and then she shook her head decidedly. "Well, I think mine is right, Miss Jones," she said; for I never saw a cow that gave such a short 'Moo' as you wrote down!" — Harper's Round Table.

The governor's wife was telling Bridget about her husband. "My husband, Bridget," she said proudly, "is the head of the State militia." "O'tought as much, ma'am," said Bridget, cheerfully. "Ain't he got th' foine malicious look?" — Southern Woman's Magazine.



TO SACRAMENTO

Fast electric trains leave San Francisco every 2 hours during the day.
One way fare \$2.50.
Week end round trip \$3.35.
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Convenient and comfortable electric train service from Bay Cities to Sacramento Valley points, including Woodland, Marysville, Oroville, Colusa, Gridley and Chico.

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Phone Sutter 2339.

The Household Sentinel

KELLOGG'S ANT PASTE

PREPAREDNESS

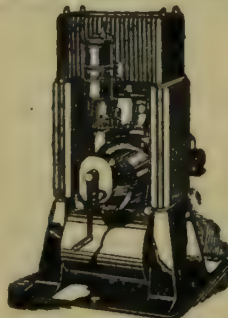


MAKES ANTS DISAPPEAR

Kellogg's Ant Paste stands guard for the housewife in her annual battle with the Ant Nuisance. With this faithful ally, she can drive every ant out of the house in 24 hours. Look for the rattle cap package.

25¢ AT ALL DRUGGISTS

THE RETREAT OF THE ANTS



Uni-Letric
GASOLINE-ELECTRIC UNIT
LIGHTING SYSTEM

Electricity for Farm Homes

At one-third cost of juice from Power Company (this includes interest on cost of plant). It is the simplest and most economical plant on the market.

No Batteries—No Switchboard—No Rheostat

Will operate 50 lights 7½ hours for 11c. Will also operate electric fans, irons, small motors, etc. If your buildings are not wired, send us plans and we will give you full instructions so that you can wire them yourselves. Material furnished at lowest cost.

Karl A. Hedberg
ELECTRICAL ENGINEER.

104 Clay Street,

San Francisco, Cal.



Uncle Sam's Pure Food Law

Insures your food being pure upon delivery. It cannot keep that food pure after it has been opened.

The Spark Automatic Cooler keeps all kinds of food pure and wholesome without trouble, expense, or ice.

In the home that has a Spark Automatic Cooler there never is fear of illness from contaminated food. It is an absolute necessity that adds luxury to living.

Ask your dealer—he knows.

Send for the booklet telling how the Spark does its work without cost or ice.

A Post Card Is Sufficient

Hammer-Bray Co.
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IN WRITING KINDLY ADDRESS DEPT. C

The STEPHENSON Patent Cooler

No Ice Required

Perfect Ventilation
Absolutely Sanitary



Awarded first prize wherever exhibited. If not for sale at your dealer's, write for particulars and prices.

L. Anderson Co., Mrs. MARTINEZ, CAL.

Floral Department.

[By Geo. N. Tyler.]

SEASONAL HINTS ON FLOWERS.

Owing to the cold, late spring most plants in the garden are two or three weeks behind in their growth. Carnations that were planted out in March and early April should be pinched out. Get right down in the heart of the plants and pull it out. This will cause them to branch close to the ground. If they have run up a flower shoot, cut it off one inch from the ground, and they also will branch. They require water and cultivation while growing, and a rich mulch of half-rotted manure is very beneficial during the hot summer months. Asters are slow in getting started; also most of the tender annuals. It is not too late to plant out any of the above plants if you have neglected to do so.

Sweet peas are now coming into bloom and should have an abundance of water, both at the root and foliage; but do not let any flower go to seed. Roses are very backward this spring, and the conditions are just right for mildew and aphids. These you can prevent by timely attention.

The cause of mildew on roses is sudden changes of temperature, or they may be in a strong draught. An ideal location for roses is an open eastern exposure, where they are sheltered from strong winds, and are shaded from the hot afternoon sun.

You can from now on put in all the cuttings of chrysanthemums that you can procure. Put in cutting clear up to the end of June and they will make a nice flower on single stems, but will not grow tall and spindling like the early struck plants, and you can plant them closer together.

Bulbous stock that is through flowering should have all seed pods picked off, and encouraged to grow as much as possible. As soon as the tips of the foliage turn yellow cut them off within six inches of the ground and let the sun in to ripen the bulbs for next year's bloom.

To go back to sweet peas. While doing some repair work I stood a 12-inch plank against a row of sweet peas on the south side. It was there for about a week, and the part of the row where the board was, started into quick growth, and the vines are twice the size of the rest of the row. This shows that they require a mulch to keep the roots cool and moist. Leaves and lawn clippings make an ideal

mulch, or you can use straw, shavings and various other materials.

Put in coleus and all green-house cuttings from now on, and they will make nice plants for this summer. Ferns are in strong growth, and the foliage should be sprayed every day, and the atmosphere kept moist.

PLACES SERVICE ABOVE PROFIT.

"No man is a great newspaper man who makes a fortune out of journalism," declared Colonel Edward S. Wilson, editorial writer of the Ohio State Journal, in a talk before a class in journalism at the Ohio State university. "If he does his name is forgotten by posterity. Journalism is above money returns; it occupies the high altitude of human duty."

Touching on the field for women in the journalistic line, Colonel Wilson said he was of the opinion that the spiritual influence of women is what is needed in journalism today. "Intellect," he said, "is faulty and full of errors and cannot be trusted, but the spirit can."

"The main thing with an editor," he continued, "is his personality. If he is a true editor he will be a true man. He cannot make a good editor unless he has the Christian spirit. This personality should make itself felt in the editorial. How can you do this? Get down on the human plane. The only real intelligence conveyed is through the heart; you cannot instruct a man wholly from the intellect."

"Keep your temper. Don't get mad. When you write an angry editorial lay it aside for a few hours and you will not print it. I've done that a hundred times. Let a spirit of optimism prevail in the editorial columns. Avoid controversy. Nothing is ever settled by newspaper argument. It simply deepens the chasm between the two views."—American Press.

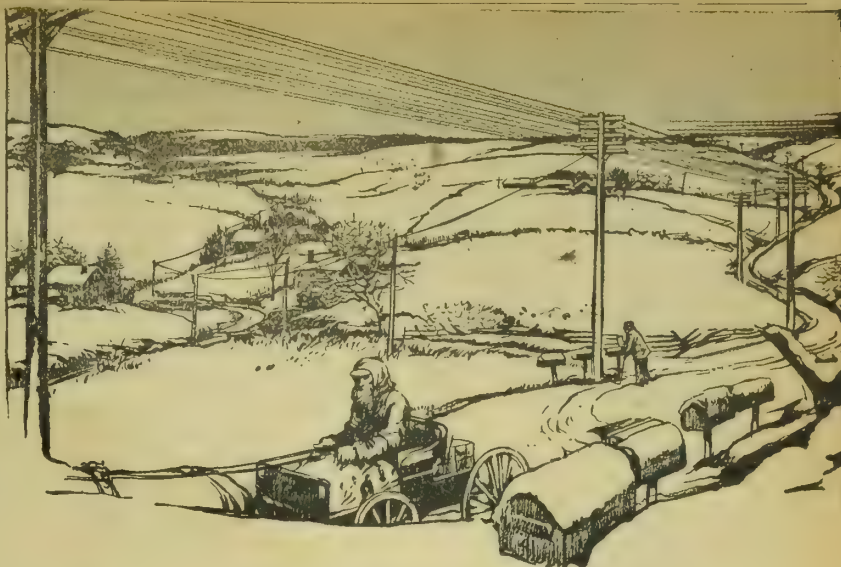
CARE OF SHOES.

The life and good looks of a shoe may be greatly prolonged by care. The use of shoe trees keeps the shoe in shape when not being worn and to a certain extent prevents the running over and general untidiness of appearance. If the heels are kept well straightened, the appearance of the whole shoe is improved. Nothing will get a shoe out of shape quite so quickly as to have the heels run down.

Patent leather shoes are less likely to crack if treated with vaseline occasionally. Tan shoes should be well polished before they are ever worn, to prevent spotting from water. Light tan shoes can be very much darkened by polishing with the darker tan polish at home, while the shoe stores will have them dyed if one so desires.

White shoes, whether cloth or buckskin, clean well with the preparations on the market and for white kid can be used benzine or gasoline with corn meal.

Two Irishmen were being drilled in marching tactics. One was new at the business, and his companion explained orders to him. "Now," said Mike, "when he says 'Halt!' you bring the foot that's on the ground to the side of the foot that's in the air and remain motionless." — Exchange.



Standards of Service

In rural communities clusters of mail delivery boxes at the crossroads evidence Uncle Sam's postal service. Here the neighbors trudge from their homes—perhaps a few yards, perhaps a quarter mile or so—for their mail.

Comprehensive as is the government postal system, still the service rendered by its mail carriers is necessarily restricted, as the country dweller knows.

Long before rural delivery was established the Bell System began to link up the farmhouse with the neighboring towns and

villages. One-fourth of the 10,000,000 telephones in the Bell System are rural. They reach more places than there are post offices. Along the highways and private lanes the telephone poles lead straight up to the farmer's door.

He need not stir from the cheerful hearth ablaze in winter, nor grope along dark roads at night for friendly news or aid in time of trouble. Right in the heart of his home is his telephone. It is the American farmer's key to the outside world, and in no other country is it found.



AMERICAN TELEPHONE AND TELEGRAPH COMPANY
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**The price
remains
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The nation over!**

The same price the nation over—never more, never less! \$17! And the same Guarantee, the same perfect Fit, the same careful Workmanship, the same splendid Wear! Styleplus are more than ever a great hit. Don't buy clothes you haven't seen and tried on. Buy your clothes direct from the nearest Styleplus dealer where you get personal attention, just what you want, the right style and the right fit.

You know the price before you go into the store—\$17 always, everywhere. Watch your local newspapers for advertisements of the nearest Styleplus Store. Look for Styleplus in the Store Window. Look for the Styleplus Label in the coat collar. If there should not be a Styleplus Store in your town, ask your favorite dealer to order a Styleplus suit for you.

Style plus all wool fabrics + perfect fit + expert workmanship + guaranteed wear
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**Styleplus \$17
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"The same price the nation over."
(Price in Cuba \$23)

Specialists in Specimen Stock for Landscape Work.

Hardy Rhododendrons, Azaleas, Boxwoods, Hollies and a complete line of Coniferous Evergreens.

WRITE FOR PRICES.
COTTAGE GARDENS NURSERIES, INC.
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FORTY VARIETIES OF FERNS

in 4-in. pots now ready, 25 cts. each, \$2.50 per dozen. Am booking orders now for choice varieties of CHRYSANTHEMUMS, commercial, show, single and pompons. Forty varieties of PELARGONIUMS in 4-inch pots will soon be in bloom, 25 cts. each, \$2.50 per doz. Also a large variety of other stock. Send for catalog.

GEO. N. TYLER, Brookdale Nursery, Los Gatos.

DAISY FLY KILLER



placed anywhere, attracts and kills all flies. Neat, clean, ornamental, convenient, cheap. Lasts all season. Made of metal, can't spill or tip over; will not soil or injure anything. Guaranteed effective. Sold by dealers, or sent by express prepaid for \$1.

HAROLD SOMMER, 150 DeKalb Ave., Brooklyn, N. Y.

SAN FRANCISCO.

San Francisco, April 25, 1917.

WHEAT.

Open market trading in wheat so light during past week that it is very hard to furnish reliable quotations. Sellers still receiving scattered shipments, but offerings at the Merchants' Exchange, and on the street, are practically nil. Prices sharply higher, with not enough California Club and Northern Bluestem on hand to warrant quotations on these varieties. Preliminary reports from the Northwest indicate a good crop for the coming year, but also state that a good share of the output is already contracted by agents of foreign governments. Northern Red is bringing a top of \$4.35 per cental on small lots, but the highest quotable offering is five cents below this. Sonoma wheat, cleaned, \$4.00@4.25 Northern Club, 1.00@1.20 California Club, per ctn., None offered Northern Bluestem, None offered Northern Red, \$4.10@4.30

BARLEY.

Barley futures prices kept pace with the advance on spot offerings during the past week, with the December option especially firm. July options were ten cents higher than at the close of last week and spot feed barley is forty cents per cental higher as a result of the good shipping demand. A large number of interior points still report a feed shortage, and their call, added to the local demand, is rapidly forcing prices higher as available supplies are cleaned up. On last Monday several carload lots brought \$3 per cental; but it is only in lots of this size that this lower end of the quoted range can be secured. The future prospects are reported by buyers for local houses to be anything but rosy, and those who have been traveling through the dry-farming section say that the crop is beginning to head out already, despite the fact that the stalks are in many cases only a foot above the ground. They say that in most sections the crop is beyond the help of further rains.

Shipping, ctn., Nominal
Brewing, Nominal
Choice feed, ctn., \$2.00@3.15

OATS.

White feed oats advanced \$8 per ton this past week as the result of a cleaning up of supplies of red feed stock, and there is every indication to point toward still higher figures here. Local holdings are confined to small scattered lots, and dealers report that it would be impossible to fill an order for two carloads here without forcing prices still higher. Red feed, None offered
White, \$2.90@3.00

CORN.

Local stocks of milo were practically cleaned up here during the past week, and this situation was reflected in the higher quotations on Egyptian stock, which is now being held at \$3.90@4.00 per cental. Even high prices like these have failed to attract many offers. No Eastern stock has been either received here, or reported as on the way to this market.

(First-hand prices on strictly first-class grain, San Francisco.)
Eastern Yellow, ctn., bulk, Unsettled
California, sacked, \$3.15@3.20
Milo Maize, None offered
Egyptian, \$3.90@4.00

BEANS.

Three varieties of beans proved exceptions to the general rule during the past week, and failed to advance, but the rest of the list still climbs merrily. But what is of even more importance to the producer than this strong city market was the increase in prices offered to producers for contracts. Several contracts for limas at \$10.25, with immediate advances of fifteen per cent on the normal production of the producer who contracted, were reported. In Southern California 10½ cents was offered for 1917 limas; 7 cents for teparies; and offers of 9½@10½ cents on large and small whites were also noted in Central California. Pinks are being contracted at 8 and 9 cents; and 1,000 sacks of spot pinks from Sutter Basin recently brought 10 cents. As far as the producer is concerned, the market still rules everything in his favor; and there is no immediate need of his selling in order to realize handsome profits. Some brokers are sending out rumors that the government is to take full charge of the crop situation and set prices, but there is very little chance that the producer would be the one to suffer from such a move. As far as can be learned, none of the larger farmers have "fallen for" this scare-talk and contracted at the prices being offered by the brokers named. Figures just given out show that during 1916 \$1,344,745 worth of beans were imported into this country via the San Francisco custom house, as compared with \$1,852,567 the year before.

Bayos, per ctn., \$11.50@11.75
Blackeyes, 9.25@9.75
Cranberry beans, 11.50@12.00
Horse beans, 7.00@7.50
Small Whites (south), 14.00@15.00
Large Whites, 14.00@16.00
Pinks, 12.00@12.25
Limas (south, cleaned), 15.50@15.75
Red Kidney, 12.50@13.00
Mexican Reds, 11.00@11.50
Tepary beans, None offered
Garbanzos, 5.00@6.50

HAY.

Persistent efforts on the part of California dealers and farmers have had no apparent effect toward breaking the big shortage existing in this State, as receipts at San Francisco again showed a decline. Arrivals here last week were 1378 tons, as compared with 1589 tons the week before that and 1711 tons the week preceding that. Nearly 85 per cent of those came from Oregon and Washington; and such California hay as did come, was largely brought in on contracts. The larger dealers contract with big consumers for monthly deliveries of their seasonal orders, and do not draw the stock out of their up-country warehouses until it is needed for the contract fulfillment. All

THE MARKET REPORTS

Figures Given are Independent and Reliable.
Prices Quoted as Paid to Producers.

types of California and Northern hay were advanced
Wheat, No. 1, \$33.00@35.00
No. 2, 28.00@30.00
Tame oats, 28.00@33.00
Wild oats, 24.00@29.00
Barley, 27.00@30.00
Alfalfa, 24.00@27.00
Stock hay, 16.00@18.00
Straw, per bale, 1.00@1.25

FEEDSTUFFS.

Quotations on feedstuffs continue to advance merrily, with the steady demand cleaning out the holding of the lower priced offerings. Oil cake meal, coconut meal, tankage, and rice middlings joined the ranks of "none offering" in the local market, and there is every prospect that several other items will be in this list by next week. It is reported that a few scattered lots of oilcake meal are held in Oakland at \$58 per ton. Cracked corn tops the feedstuffs list at \$73 per ton; with alfalfa meal the cheapest at \$34 per ton.

(Per ton, San Francisco.)

Beet Pulp, per ton, None offered
Alfalfa meal, per ton, \$33.00@34.00
Bran, per ton, 43.00@45.00
Oil Cake, None offered
Coconut cake or meal, None offered
Cracked corn, 72.00@73.00
Middlings, 58.00@60.00
Rolled Barley, 60.00@62.00
Tankage, None offered
Rolled oats, 58.00@60.00
Rice middlings, None offered
Rice bran, 35.00@36.00

POTATOES, ONIONS, ETC.

Potatoes are still advancing, with export business sending them up. Delta stock now commanding a better figure than Oregon goods. New Bermuda onion seed stock offered here from Texas at \$3.25@3.50 per cental. Increased receipts have brought green onions and other vegetables down.

Asparagus, per lb., 2½@5 c
Peas, per lb., 4 @5 c
String Beans, per lb., 15 @17½ c
Wax Beans, per lb., 15 @17½ c
Hubbard squash, per lb., 2½@3½ c
Summer squash, per crate, \$2.00@2.25
Lettuce, crate, 50@90c
Celery, Delta, crate, 1.00@1.50
do, Southern, crate, None offered
Tomatoes, crate, Not enough to quote
Rhubarb, box, 50@75c
do, Mammoth, 1.00@1.25
Potatoes, ctn., Delta, 55@55.50
Salinas, Cleaned up
Oregon, 55@55.25
New, per lb., 6@8c
Sweets, per lb., 5c
Onions, green, per box, 16@1.25
Bermuda (seed), per ctn., 3.25@3.50
Garlic, lb., 1@3c

POULTRY.

Easier tone in the local poultry market, induced by the increased offerings of late. The high prices asked for feed have been

responsible for the heavier offerings, and there is hardly any recovery to be expected for a time.

Turkeys, live, lb., 22@24c
do, dressed, large, lb., Nominal
Broilers, 1¼ to 1½ lbs., 30@35c
do, under 1 lb., 26@28c
Fryers, 26@30c
Hens, extra, per lb., colored, 25@26c
Small leghorn, 22@23c
Smooth Young Roosters, per lb. (3 lbs. and over), 30@32c
Old Roosters, per lb., 15@16c
Geese, per lb., 20@22c
Squabs, per lb., 35@40c
Ducks, 24c
Old, 21@22c
Belgian Hares (live), 14@15c

BUTTER.

Butter quotations fell off this past week six cents per pound as a result of increased receipts here and a falling off in the demand from Eastern buyers. The New York and Chicago butter markets commenced to waver early last week, putting a practical halt to buying from that source here; and local prices were forced off by the piling up of current receipts. Seattle continues a buyer here, and the Alaska Packers Association is still in the market in a small way. The United States Government, which last week awarded contracts to local houses calling for \$80,000 pounds of butter, has increased this to \$80,000. The additional lot will be furnished by Monotti, Larimer & Solie at the same figure as was accepted on their bid for 150,000 pounds. This million pounds will be shipped from Eureka, the first lot of 40,000 pounds leaving Crescent City last week for the East, and will be all filled before the last of May. Present market indications point to easier prices.

Thurs. Fri. Sat. Mon. Tu. Wed.
Extras, 39 38½ 38½ 38½ 38½ 38½
Prime firsts, 38½ 38 38½ 38½ 38½ 38½

EGGS.

Egg prices have followed the lead of the Eastern markets and there is every indication that further sharp declines can be expected. The speculative element, whose storage activities all over the country have been the main factor in holding egg quotations up of late, has apparently decided to let well enough alone; and markets have slumped under the influence of increased receipts. Storage holdings in San Francisco last week were approximately 56,000 cases, as compared with a total of 51,000 for the same time in 1916. When the differences in cost of this year's holdings and last year's is considered, the reason for the halting of speculative trading can readily be seen. Local conditions are practically unchanged from last week, but the sharp break in the New York and Chicago markets proved too much for local traders to overcome. For the next couple of weeks the Eastern market trend is going to govern California prices to a very large degree. Sonoma county egg production will be

10 per cent below normal due to reduction of flocks on account of high-priced feed.

Thurs. Fri. Sat. Mon. Tu. Wed.
Extras, 35 34½ 33 30 33½ 31½
Extra firsts, 33½ 33½ 32 29½ 32 30½
Extra pullets, 30 31½ 30 27½ 31 30
Ex. 1st pul., 29½ 31 29 27 30 29½

CHEESE.

Increased production has figured in bringing easier prices on Flats and Jack types of cheese during the past week. Y. A.'s, 25c
Fancy Calif. Flats, per lb., 20c
Monterey Cheese, 20@22c

DECIDUOUS FRUITS.

There were no changes in the selling prices on Newtown Pippin apples here during the past week. Further inroads were made into the available supply.

Apples:
Bellflower, box, Not enough to quote
Newtown, fancy, \$1.00@1.75
do, ordinary, 1.00@1.15

CITRUS FRUITS.

The citrus lines were without quotable change during the past week. A good shipping demand was reported, and several large lots were sold for foreign delivery within a month.

Oranges:
Navel, fancy, per box, \$2.65@2.90
do, Choice, 1.85@2.25
Tangerines, 1.75@2.00
Lemons:
Fancy, per box, 3.25@3.50
Choice, 2.75@3.00
Lemonettes, 1.75@2.25
Grapefruit, fancy, 2.75@3.00

DRIED FRUITS.

Market tone steadied up very noticeably. An especially brisk call for apricots and figs is reported, and more interest is being shown in spot prunes. (Net to growers, bulk basis, f. o. b. shipping point.)

Apples, new crop, 5½@6 c
Apricots, per lb., 15 @16½ c
Figs, bulk, 1916, Not enough to quote
do, 1917, 5½@6½ c
do, white, 1917, 6 @6½ c
Calimyrna, 1917, 9 @10 c
Prunes, 4-size basis, 1917, 5½@6½ c
Prunes, 1916, 7½@8½ c
Pears, 6 @7½ c
Peaches, 1917, 7½@8½ c

BERRIES.

Prices on all varieties of strawberries broke noticeably during the past week, partly the result of increased offering but mainly the result of inferior quality. A large amount of moldy stock is being offered here now. Sonoma county berry crops estimated by F. B. Bill of the Sebastopol Berry Growers, Inc., are short due to poor cane growth on account of drought last year. Estimates are: Lawtons, 75 per cent normal; Logans, 85 per cent; and Mammoths, 90 per cent.

Strawberries (per crate):
Southern, \$1.00@1.25
Fresno, 1.50@1.75
Longworths, per drawer, 65@75c

HOPS.

Sacramento, 6 @9c
Sonoma, 7½@9c
Mendocino, 8 @9c

OILS.

Pearl Oil, per gal., 9c
do, cases two 5s, 17c
Headlight, bulk, 10c
do, cases two 5s, 18c
Eocene, bulk, 11c
do, cases two 5s, 19c
Gasoline, bulk, 20c
do, cases two 5s, 28c

LOS ANGELES.

Los Angeles, April 24, 1917.

BUTTER.

Receipts of week ending April 24, 360,010
Receipts of past week, 280,050

There has been a sharp decline in this market since our last review. The surroundings of the market all favored lower prices, both East and West. The production in the Central West and East increasing under the influence of the more spring-like weather there and lower markets with better receipts here, caused buyers to put prices down. But at the lower range of values there was a very fair demand. The cold storage stocks also showed a slight increase compared with a year ago. San Francisco declined 5½c up to Monday and Chicago 3c and New York 3½c, while here California extra creamery sold down 6c. Still the market here is 8c higher than a year ago. But at this decline there was more buying on 'change than for some time, the packing house interest being in the market. The receipts for the week were 4,370 less than the week previous, but 70,960 more than the same week last year. Tuesday brought no change. The receipts were light, but Chicago was off 2c and New York 1½c and San Francisco unchanged; this had a bearish influence upon the market here. On 'change buyers held back and did nothing. California extra creamery, 33c
Prime first, 32c
First, 31c
Daily quotations:
1917— Wed. Th. Fri. Sat. Mon. Tu.
Extra, 39 39 39 36 33 33
1916—
Extra, 25 25 25 25 25 25

EGGS.

Receipts (railroads) for week ending April 24, 1917, 3,467 cases.
Receipts (railroads) for week ending April 24, 1916, 4,225 cases.

There were more in the past week and the demand was not so strong. While the consuming trade made fair purchases, and the cold storage people held back and bought more cautiously and sparingly. The cold storage holdings here now are 10,411 cases more than this time last year, which, with the improved receipts, encouraged buyers to bear down on prices. The receipts of fresh eggs by rail for the week were 3,467 cases and

Special Citrus Market Report

Los Angeles, April 24, 1917.

Shipments of citrus fruits from southern California from November 1 to April 22: Oranges 30,064 cars, and lemons 3,457 cars. Same time last year: Oranges 17,470 cars, and lemons 2,802 cars.

Shipments from central California from November 1 to April 20: Oranges 4,062 cars, and lemons 164 cars. Same time last year: Oranges 4,411 cars, and lemons 146 cars. The markets East the past week were interfered with by bad weather and wire troubles. Fancy fruit held steady, but all others were slow sale to a little lower. Receipts were pretty good and fair offerings were had of Florida and imported fruit. Lemons met with a poorer market than oranges. There are on hand and available for sale the next thirty days 41,000 boxes of foreign lemons against 121,000 boxes same date last season. Notwithstanding this shortage in foreign lemons, the market the past week was dull and lower.

Locally the market the past week was very quiet. All oranges were slow sale, even the large sizes that have been selling fairly well heretofore. Hence local packers were bidding a ¼@½c lower for oranges. Oranges were being bid for at

1¼@1½c per pound in the grove picked. Grapefruit unchanged at 2@2½c per pound in the grove picked, but very slow sale. Nothing doing in tangerines. Lemons dull and weak at 1@1½c per pound for the best in the grove picked. Culls have to be sold for what they will bring.

AUCTION SALES.

New York, April 23, 1917.

Fifty-one cars selling today. Market steady. Wires down and market report in consequence incomplete. There were 1,803 boxes of Florida Valencia sold at 95c to \$5.60, averaging \$2.75; 3,330 cases Spanish Valencia, repacked, sold at \$1.50 @2.70, averaged \$2.00. California navels averaged \$1.30@3.15. Lemons averaged \$1.00@2.50.

Boston, April 23, 1917.

Thirty-one cars sold. Market doing better on oranges and lemons. California navels averaged \$1.50@3.20. Lemons averaged \$1.60@3.50.

Philadelphia, April 23, 1917.

Seventeen cars sold. Market higher on oranges and lemons. California navels averaged \$1.30@2.60. Lemons averaged \$2.00@2.80.

HIGH PRICES FOR 1917 CROPS ASSURED.

From all the information at hand there will be an unprecedented demand for every variety of foodstuff that California can grow during the present season. Not only is the call for supplies practically unlimited, but our crops of grasses, grains, and fruits will be in all probability below normal owing to the unusually cold winter and the lateness of the growing season. Grain dealers are doing little business even now for want of supplies, and the spot crop of fruits of all kinds, dried and canned, is practically closed out. Prunes are steadily advancing and there is keen rivalry for the rag end of the raisin hold-over. The California Peach Growers' Association announced the withdrawal of certain grades of peaches, which have been sold out, and say that the entire 1916 pack will disappear within the next thirty days. Advance orders for the 1917 crop, confirmed at opening prices, are already piling up. It looks as though the California rancher will be in position to practically dictate the price of everything he grows this season, especially in the line of products peculiar to our State. It behooves him, therefore, to turn out and put in the best marketable shape possible every pound of California produce conditions permit. To this end he should be actuated not only by motives of self-interest, but by a spirit of high-minded patriotism. Go to it!

there were 2,000 cases of Petalumas in to go into cold storage. The market here declined 3/4c on extras up to Monday, 2c on case count and 1 1/2c on pullets. San Francisco for the same time declined 3/4c.

In Chicago the market broke 1 1/4c and in New York 1 1/4c up to Monday. Still the market here is 9c higher than this time last year. Tuesday, with light receipts and San Francisco sharply higher, the market was advanced 1c, but trading was light, as the Eastern markets were all lower.

Daily quotations:

	Wed.	Thu.	Fri.	Sat.	Mon.	Tu.
Extra	33 1/2	34 1/2	34	33	30	32
Case count	32	33	33	31	29	30
Pullets	29	30 1/2	30	29	27 1/2	28 1/2

1916—
Case count...22 1/2 22 1/2 22 1/2 22 1/2 22 1/2 23

POULTRY.
The continued high price of feed caused a flood of light broilers the past week and the market broke 7c under excessive supplies. Light hens declined 4c, heavy hens 2c and ducks 3 and 4c, and even at this reduction sales were slow. With the tourist now gone and only the home consumptive demand to depend upon, the market was the most quiet one for some time. Even at the low prices now prevailing, the masses are not using poultry to any great extent. Everything is slow sale. Fryers and turkeys, however, are unchanged.

We quote from growers:

Broilers, 1 1/4 to 2 lbs.	22@23c
Fryers, 2 1/2 to 3 lbs.	27c
Hens over 4 lbs.	21@22c
Hens under 4 lbs.	16@17c
Ducks	21c
Geese	15c
Roosters, 3 lbs. up (soft bones)	26c
Turkeys, heavy, 12 lbs. and up	29@30c
Turkeys, light	24@25c
Squabs, live, per doz.	\$1.50@3.00
Dressed	3.75@4.85

HAY.
The arrivals the past week were very light and under the light offerings a steady and firm market was had. But, as last week, the demand was mainly from the country and for horse hay. The dairy people continue to buy sparingly, using green alfalfa mostly. It is said the crop of new hay will be light and this to some extent offsets the want of a better demand than we have had the past two weeks.

We quote f. o. b. Los Angeles:

Barley hay, ton	\$21.00@23.00
Oat hay, ton	22.00@24.00
Alfalfa, northern, ton	20.00@22.00
Alfalfa, local, ton	22.00@23.00
Straw, ton	11.00@12.00

NEW VEGETABLES.
Prices of new vegetables held up fairly well the past week. Not enough in to break the market to any extent. Cab-

THE CALIFORNIA CURED FRUIT EXCHANGE

suspended business over a year ago and has since been in litigation with its alleged defaulting cashier, L. O. Walker. The litigation has closed with an agreement out of court which permits them to bring action against Walker in case it shall develop within five years that he now has property or that he conveyed property without sufficient consideration during the investigation. All suits are dismissed and all that remains is for the Exchange to sell its big modernly equipped packing house in Berkeley. Walker's \$2,000 bank account will apply on notes held by a bank against the Exchange.

bage is coming in slowly and in good demand. Asparagus also sold a little better. New onions are coming in more freely and are a little lower. Demand fair. New potatoes were in better supply, but as the quality showed improvement prices were kept up. Peas are coming in freely; slow sale and cheap.

We quote from growers:

Cabbage, per cwt.	\$4.75@5.00
Local and Northern, per lb.	7@8c
Imperial Valley	5@6c
New potatoes, per lb.	7@8c
Peas, per lb.	3 1/2@4 1/2c
New onions, silver skins and Bermuda, per lb.	7 1/2@8c

BEANS.
The advance of last week is still being maintained, and a very fair demand continues to be had from the country for all kinds of beans. As stocks are light, there is a feeling in the trade that they will all be wanted before seeding is over. The consuming trade, however, is taking very few beans at present high prices.

We quote from growers:

Limas	16c
Large white	16c
Small white	16c
Pinks	12 1/2c
Blackeyes	10c
Tepary	12c

BERRIES.
The strawberry season is now fully opened and receipts are coming in quite freely and the quality steadily improving. With increased receipts prices are working lower, but this puts them in the reach of more consumers and a more active demand is being had. A few blackberries were in during the week, but they were high and slow sale.

We quote from growers:

Strawberries, poor to choice, per 30 basket crate	\$1.35@1.50
Fancy, per 30 basket crate	1.75@2.00
Blackberries, per 30 basket crate	5.00

HONEY.
There is nothing new to note from a week ago. Still no extracting is being done in southern California. The cloudy cold weather has kept the bees from accumulating any honey. In some localities it is said that beekeepers are still feeding sugar, the bees not getting enough honey to keep them going. Hence we are unable to give quotations. But as the crop will be short, prices necessarily will be higher than last year.

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Special Livestock Market Report

San Francisco, April 25, 1917.

CATTLE.—More grass cattle are arriving than slaughterers can comfortably handle; though prices are not yet marked down. Reports from our field men show increased stock in Kern, Tulare, and Kings counties and all in pretty good condition; Pt. Reyes, Marin County, shipping about 50 dairy calves per day to this market on account of short feed; Shasta County livestock conditions under normal and range feed poor due to lack of fall rains; Stanislaus cattle in fair condition considering cold spring and many not likely to be in good condition when shipped; pasture very poor in the San Joaquin Valley and southern Coast counties and east side of Sacramento Valley. The U. S. Dept. of Agr. reports cattle in California to be in 96 per cent condition, which is the average of the past ten years. For U. S. they are in 94.4 per cent condition as compared with 95.2 average of ten years.

Grass Cattle—

Steers, No. 1	9 @9 1/4c
No. 2	8 1/2 @8 3/4c
Cows and Heifers	7 1/2 @7 1/4c
No. 2	6 1/2 @7c
Bulls and Stags	6 @6c
Calves, light	8c
Medium	8 1/2 @8 1/2c
Heavy	7 @8c

HOGS.—Freely offered, quite a few soft hogs, principally from corn feed. These are getting 2 to 2 1/2 cents less than the prices for hard, grain-fed stock. U. S. Dept. of Agr. reports condition of California hogs April 1 at 96 per cent as against 97 per cent for a 10-year average. Only 97 per cent as many breeding sows are on hand as on April 1, 1916. The report for U. S. is 95 per cent condition as compared with 93.8 per cent 10-year average, and 97.1 per cent as many breeding sows as a year ago. Kings County report shows very large number hogs all in good condition. Kern-Tulare report indicates great increase in all livestock the past 12 months, but the increase is greatest in hogs.

(Rough docked 10 and 20 pounds; piggy sows, 20 to 40 pounds.)

100 to 150 lbs.	12c
150 to 300 lbs.	14 1/4 @14 1/2c
300 to 375 lbs.	13 1/2 @14c

SHEEP.—Lambs are marked down slightly from high prices previously prevailing, and yearling lambs are now quoted at the same price as milk lambs—an unusual condition. It is due to the valuable wool on the yearlings. The Government report indicates California sheep condition April 1st 95 per cent of normal as compared with 97 per cent for a 10-year average. Corresponding figures for U. S. are 93.8 per cent and 95.5 per cent. Lambs lost in California from disease and exposure are placed at 85 per 1000 head, as compared with a six-year average of 69. For U. S., the figures are 60.3 and 58.6, showing California in much worse position than U. S. as a whole. An eastern paper is quoted as saying that there are 13,000,000 fewer sheep

in U. S. than there were in 1900.

Prime Wethers	11 1/2 @12c
Ewes	10 @10 1/4c
Milk Lambs	12 @12 1/2c
Yearling Lambs	12 @12 1/2c

WOOL.—The Government has signified its intention to take over the product of three northwestern mills. Everybody is working in the dark so far as the foreign situation is concerned, and there is no change from last week's quotations.

HIDES.—No important movement noted and no change.

Los Angeles, April 24, 1917.

CATTLE.—While there was no quotable change in the market the past week, its tone was hardly so firm. Most of the offerings were fed steers and in very good condition, but as there has been a falling off in the demand for beef resulting from high prices and the high cost of living all round, killers were less anxious for supplies, while the scarcity and high price of feed made country holders more willing to sell and meet buyers' views. California and Arizona furnished what cattle coming in and as a rule the arrivals were in very good condition. As feed is high and scarce, the later supply of good cattle, it is thought, will show a falling off. Calves continue to arrive freely and under the liberal offerings the market showed a decline of 25@50c per cwt.

Per cwt. f. o. b. Los Angeles:

Beef steers, 1000 to 1100 lbs.	\$9.50@10.00
Prime cows and heifers	7.50@8.00
Good cows and heifers	7.00@7.50
Calves	8.50@9.25

HOGS.—A fair demand was had for what hogs coming in the past week. The arrivals, however, were only moderate and most of the receipts were made up of light weights and showed that they had been forced to market to save feed. Choice packings hogs were scarce and killers were bidding \$1.00 per cwt. over quotations for what few coming in. A small lot of grain-fed purebred Berkshires averaging 170 pounds were sold during the week at \$14.50 per cwt. What hogs arriving were from California and Arizona; Idaho hogs still being drawn east by the high prices there.

Per cwt. f. o. b. Los Angeles:

Heavy, averaging 250@300 lbs.	\$11.50@12.00
Mixed, 200@250 lbs.	12.00@13.00
Light, 175@200 lbs.	12.00@13.00

Rough docked 20 pounds, piggy sows 40 pounds and stags 40 per cent.
SHEEP.—The market the past week was much the same as the week before. May be a little more quiet. The heavy hotel demand had during the tourist season being lost and the home trade buying sparingly at the high prices, showed itself during the week in the market, which was quiet. Prices, however, were unchanged, as the offerings were not heavy.

Per cwt. f. o. b. Los Angeles:

Prime wethers	\$9.00@10.00
Prime ewes	9.50@10.00
Yearlings	10.50@11.00
Lambs	13.00@14.00

BEEKEEPERS' OPPORTUNITY.

The United States needs tons and tons of honey. The Secretary of Agriculture says "only 20 per cent of the supply of sugar normally consumed in the United States is produced domestically. Unless normal imports of sugar reach our shores, therefore, a shortage of this food is inevitable." Practically all of the unusually large honey crop of last year has been sold at good prices; and in the face of the probable shortage of sugar there can be no fear of overproduction. It is the patriotic duty, therefore, of every beekeeper to take immediate steps to increase the present year's production.

Here are a few ways in which you can help to do this: If your bees are in box hives, get modern hives and adopt modern methods. Prevent natural swarming as much as possible and make increase by artificial division. Give your colonies plenty of room for storage, as gathering nectar often ceases when the bees are overcrowded. Give your bees extra attention and look for first signs of disease, treating all suspected colonies at once to prevent spread of disease. Notify your county bee inspector at once in case disease breaks out in your neighborhood.

This is a good time for the professional beekeeper to start out- apiaries, being careful, however, to not overstock the range. To those contemplating beekeeping, either as a side line or professionally, we would say "go to it." You will probably never find a better time, and you are helping to "win for democracy."

University of California. GEO. A. COLEMAN.

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THE PACIFIC RURAL PRESS

SAN FRANCISCO

MAY 5, 1917.

LOS ANGELES

How 150 City Boys Furnish Fruit Harvest Labor

[Written for Pacific Rural Press]



WHY produce food if we can't harvest it? The labor shortage for farming is about as serious as the food shortage. State Horticultural Commissioner G. H. Hecke says ranch labor is sure to be short. Prof. W. T. Clarke of the University of California says 20,000 ranch laborers are needed at this moment. President F. B. McKevitt of the California Fruit Distributors says fruit growers must get more labor at less cost or the crops will rot. Dean T. F. Hunt of the College of Agriculture says that, assuming a three-year war, 200,000 people now in the cities of California will be required on the farms. M. J. Moniz of Sebastopol says that berry growers are already trying to engage help for picking.

Men must do the sterner tasks of the war and the heavier work in agriculture. There will be a great vacancy in fruit harvest and packing, to be filled by women and children. School vacations must be extended. Work of city school children and women must be organized to save the fruit harvests and release men for the heavier work. Representatives of thirty-two agricultural colleges and commissions recently recommended the mobilization of more than 2,000,000 unemployed boys between 15 and 19 years for farm and munitions work.

BOYS' SOCIETY PICKS BERRIES THIRTEEN YEARS ON ONE RANCH.

That 75 to 150 city boys have returned to the same ranch year after year for about three months of berry and fruit picking, proves that similar projects can be organized to give city boys all over the State magnificent vacations, keep them out of the criminal courts, supply them with bank accounts and a reserve of good health, and ingrain strong moral and patriotic impulses in their characters.

In San Francisco is an institution, now forty-two years old, which was founded by "believers in boys for the purpose of giving them a better chance." It is non-sectarian and is supported entirely by volunteer contributions of those who believe in boys. Last year there were 358 of them in the Home provided by this "Boys' and Girls' Aid Society." Of these, 114 were committed to the Home by juvenile courts of thirteen counties of central California. Only boys can be cared for, due to financial reasons, and these range from 7 to 18 years old. Fifteen of the older boys have already enlisted in the army and navy since war was declared, due largely to the patriotic training received in the Aid Society school and the camp.

In the berry district of Sonoma county is a great-hearted woman, Mrs. Laura E. Barlow, who in 1903 had



Camp Perkins, where 150 Berry Picking Boys Camp All Summer.

100 acres of berries and the courage to co-operate with the Aid Society in using the boys to pick the fruit. It has resulted to her benefit as well as to the health and prosperity of an untold number of boys in the years since then.

That summer 75 boys from the Aid Society picked fruit for her. In 1904 and 1905 practically all of the boys from the school spent the summer there.

In 1906 it was seen to be no longer an experiment. Geo. C. Turner became superintendent of the institution that year. With Mrs. Barlow, he planned a permanent camp on her ranch, with wooden platforms for removable tents, a kitchen, store-room, sick-room, and with sanitary equipment such that when, later, the State law enforced sanitation

in rural workers' camps the State inspector pronounced this the best he had seen.

About 150 boys now annually spend three months there; and they are already this spring eager to go. They pick 250 to 300 tons of berries per year, nearly 10 per cent of the district's crop. They earned last summer between \$4,000 and \$5,000, being the best paid berry pickers and having helped with the prunes and in the canneries, etc., not confining their work to the Barlow ranch. They retained three-fifths of this money; two-fifths is retained by the society to pay expenses, including athletic equipment and Fourth of July fireworks, as well as food, supervision, etc. They were paid four cents per five-pound tray for picking cannery berries, thirty cents per twenty-two-pound crate for shipping berries, eight cents per tray for raspberries, and seven cents per lug box for about 200 tons of prunes.

COSTS \$8.35 PER MONTH PER BOY.

Food for the 150 boys costs the management about \$800 per month, or

\$5.35 per boy. The minimum necessary help has been found to include a general superintendent, cook, supervisor for each fifty boys, a woman for the dining "room" and one for the mending. These should be obtainable for, say \$450 per month, or \$3 per boy. At this rate the cost for 150 boys three months is about \$3,750. Since the boys earn about \$4,500, their vacations have yielded well above expenses and they have had a magnificent time. The expenses noted are based on hiring all help. They would be much less if mothers, relatives, teachers, etc., should volunteer their services and share that delightful camp.

CAMP PERKINS AMONG THE EUCALYPTUS TREES.

On a beautiful hillside among grand old eucalyptus (Continued on page 557.)



Berry and Prune Harvest Labor Problem Solved by City Boys.

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EDITORIALS

CALIFORNIA WAR PRIZES.

WE WRITE agriculturally as we ask our readers to think of what California has already gained by the war. It occurs to us that if the thousands who are now rushing to anticipate conscription with volition should never have to do more than wave a flag; if the stately war-craft now patrolling the Golden Gate should never fire a gun except in friendly salute to allied ships—even if a back-yard cabbage should never come to a head, California has already achieved great, fundamental agricultural gains by the attitude of her citizens toward the war. Of course we believe that all the world will come to be clearer in head and stronger in heart by the lancing of the autocratic fistula of central Europe, painful though the operation be—but we are not licensed to report upon that phase of the world trouble. Agriculturally the world is coming to be better off already through its new attitude toward its farming population, as we noted last week, and California is making great gains, not only in this general way, but in specific transactions which will have direct and potent influence in the development of the State and in the fairer foundations for the prosperity of its citizens. We refer of course to the crystallization of public opinion in specific transactions by the State Legislature which finished its seasonal work since the date of our last issue. This year's Legislature might have done more, it is true, because it left liquor evils uncorrected, but it really did notable things and was helped to the force of its doing, if not to the achievements themselves, by the strong awakening of the public mind to principles involved in these transactions by the wide conviction that the application of these principles is essential to public safety and efficiency in the building of a stronger commonwealth.

OUR GAIN IN PRODUCE MARKETING.

PERHAPS California's greatest gain, for immediate and permanent advantage to our food producing industries, was the enactment into State law of the principles of fair returns to producers for which Harris Weinstock so resolutely contended. It is true, perhaps, that he brought them into the lime light by a kind of personal initiative which the legalized "initiative" does not cover, but the "referendum" which he invoked to approve them was so irresistible and indisputable in its verdict that no personal impeachment of him or his motives was possible. His attitude and methods were perhaps modified somewhat by conference with those who were striving in different ways for the fundamental principles of producers' co-operation which he desired to enforce, but these modifications were a form of endorsement—a critical endorsement which every just man contending for the truth gains strength from. Col. Weinstock was not contending for personal advantage, for he, as we understand it, actually legislated himself out of office, and has to be recalled to service, if the Governor so desires. It seems to us very important that it should

be generally understood that Col. Weinstock is not in this business for office or income but for the enforcement of principles which he conceives to be patriotic, philanthropic and economically just to all his fellow citizens. We never saw the inside of his sack, but we believe that it contains something more negotiable than back-yard garden truck, and he is therefore free to contend for principles wholly apart from self-service through their advocacy. The general recognition of this fact is demonstrated by the popular support and the legislative endorsement which his contention has received. The new law, which is now in the Governor's hands, sweeps away the impossibilities and fallacies of the law of 1915 and prescribes a practicable and desirable line of duties, authorizations and volitions which are outlined in the act as follows:

To act as advisor to producers and distributors when requested; to gather and disseminate impartial information concerning supply, demand, prevailing prices and commercial movements, including common and cold storage of food products; to encourage the organization of co-operative associations among producers, distributors and consumers; to encourage standardization of California food products; to act as mediator, when invited, in controversies between producers and distributors; to extend the market for California products throughout the world. Advisory powers are assigned the State Market Director in carrying out many of these provisions. It also provides that the director is to engage in no other line of business during his term of office.

This is surely a line of regulatory, promotive and judicial work which can be turned to great advantage in reaching fair solution of California marketing problems. It fills what has always been lacking, a central hortative and executive authority possessing powers traditionally declared to be non-existent, for it will be at least morally powerful, not only to lead producers and consumers to the co-operation trough, but to make them drink. Recognition of the desirability of such powerful service by the State was doubtless sharpened by the war-attitude toward food distribution which has recently so strongly impressed itself upon the public mind. Whatever food regulation, if any, may be necessitated during the coming months, California will be fitted to intelligently undertake through the wisdom which the Market Director is commanded to secure, and the fairness of it to producers will be assured by the points of view which the Director has gained by his experience and by the public spirit and interest which have been so clearly recognized as actuating his undertakings.

CALIFORNIA COLONIZATION SYSTEM.

ANOTHER progressive affair, which the current interest in stalwart and enduring preparedness helped to put over, is the first act of a drama of State help for responsible and economic development, through a system of expertly directed, inspected and endowed colonization of qualified young farmers on subdivisions of selected land. Our readers have knowledge of the facts and experiences upon which the undertaking proceeds, for they have been set forth at considerable length in these columns during the last few months and an outline of the essential points of principle and method was given on page 532 of our last issue. Though others have participated in getting the thing into shape, the chief conceptions and convictions involved in it are the fruit of much meditation and open-eyed globe-trotting by Dr. Elwood Mead of the University of California and so much of it as will be immediately entered upon, will constitute laboratory work for a visible demonstration by his division of Rural Institutions of the University. While this demonstration is being sought, all doubting silurians of the individualistic school are expected either to learn to sit up and take notice or creep quietly under the sod, as they see fit. When results reach an end which will place an operative crown upon the work, it is expected that the State may adopt the system for good and all and private enterprises in land settlement will embody the same policies in their work—but this the future will determine. In case readers may not easily recall the features of the effort, the following rough outline may sufficiently indicate them:

The State will embark in an entirely new enterprise by which it is hoped to encourage the settlement of small, improved farms by qualified persons of moderate means. The administration of the act is to be carried out by an unsalaried board of five members and an appropriation of \$260,000 will be placed at the disposal of the board to purchase 10,000 acres of unimproved lands selected for good farming quality. The board is authorized to make necessary improvements and to subdivide the tracts and sell them to selected settlers, on loans with amortizing payments extending over a period not to exceed forty years, and with the right to repay the loan any time after five years. Unless the applicant is prepared to pay half the purchase price of his allotment, he would be required to apply to the Federal Farm Loan bank at Berkeley for 50 per cent of the appraised value of the land and 20 per cent of the value of the improvements, and the State will lend him additional money for his outfit, as he may require. The \$260,000 advanced by the State is calculated to be returned within fifty years, with interest at the rate of 4 per cent.

Aside from the arrangements by which all repayments and interest go to the State, as indicated in the last sentence above, the State has additional security for its money by the increased value of the land which its handling of it will create. In the case of the University Farm at Davis, the State has made not less than \$100,000 on the current value of the land since its purchase in 1906, wholly apart from the cost of the improvements it has made.

SAFEGUARDED BY SELECTION.

THE REAL security of the State's investment in land for subdivision rests upon the principle of selection, which is applied all through the operation of the act. The land is to be selected by the expert board for its quality and suitability to make good, profitable, small farms. It is not a scheme to gamble in poor land. Then the people who will be given the chance on such land will also be selected people—not anyone who has a farming dream and money enough to make a "first payment." The law says that the board shall have the right to reject all applications and it also says: "No applicant shall be approved who shall not satisfy the board as to his or her fitness successfully to cultivate and develop the allotment applied for." In the bill as originally drawn it was provided that applicants must be "between the ages of 21 and 35 years," but the Legislature struck out this limitation—probably in recognition of the fact that a Californian never knows that he is more than thirty-five. We presume, however, that the board will prefer young people as much as it likes and we shall not blame them. We quite agree with A. W. Foster, who has himself maintained a youthful spirit all through his long course of advancement from president of a railroad to field-marshal of a chicken ranch. Mr. Foster wrote the other day:

You cannot breed a race of farmers offhand. You cannot take middle-aged men or the broken-down wrecks of cities and make successful farmers of them. Youth is the essential of the raw product. More than in any other walk of life, the work must begin while body and mind are still in the formative state—the mind open to quick perceptions and the body able to gain the necessary robustness. Given that, I know of no other occupation that holds out a surer way to a satisfactory future. But it takes time to breed capable farmers.

And in connection with this State enterprise for land settlement, it must be remembered that it is a University undertaking and the University relieves itself of old men by asking Mr. Carnegie to pay their board. The great strength of the University lies in its faith in young men and women, jointly and severally. They are the ones who will get the State farms by showing that they deserve them!

GET BUSY ABOUT LABOR.

WE TRIED to write urgently last week to fruit growers to get busy individually and in organizations to secure their labor supply and if it was not in sight to get still more busy in digging it up. The same exhortation is now addressed to all farm producers, for it is becoming more evident that if a supply is to be had it must be dug up. From southern California an appeal is going to Washington to do some-

thing to offset the exclusion of Mexicans which the new law which went into effect this week seems to practically accomplish. They are not excluded as are Hindus and South Sea islanders, but their entrance calls for \$8 per head instead of \$4, as formerly, and a Mexican peon with \$8 would be an international curiosity. Probably the literacy test will also sharply reduce the supply, for that provides that all aliens over sixteen years of age who cannot read the English language or some other language, will be excluded from the United States. Presumably an employer might ante up \$8 per man at the border, but it will take pretty rapid work to make him read anything over night. It really looks as though in a war emergency the immigration lid was screwed on a little too tight. What can be done with seven-fold increase of the cotton area in the Imperial Valley district and the southern negro pickers held back by a similar demand at home? And there are other southern Califor-

nia labor requirements which are also acute. In central European countries farm laborers are given permits to enter for limited working periods and are hunted out again after harvest. These countries are handier at police work than we are, but there may be some way to manage it to get the labor which will be the measure of our production.

In the San Francisco district there is some prospect for a city contribution, for the county defense committee is arranging a house-to-house canvass of San Francisco for farm labor, the pledging of idle men to farm work, and will make an attempt to secure from the Board of Education the extension of vacations that will enable older boys to work in the country. We do not know the answers to these questions we are raising, but we do know that every crop community or organization of farmers ought to get very busy about its labor supply.

the great, great grandchildren of the generation you started in with. We are not sure that it is possible to catch up with the cabbage aphid after it has got a good start. The way is not to let it get such a start.

Corn for Silage.

To the Editor: I have very moist river-bottom lowland, and contemplate planting Indian corn for silage. What variety should I use and should it be planted as we generally plant corn for other purposes?—H. B., Burrel.

Tall growing dent varieties are chosen for silage. The greatest grower according to local observation is best, but if none such has been demonstrated or available, you can order of the seedsmen advertising in our columns, for they all make a specialty of furnishing good silage varieties. A little more seed is used per acre—say about one quarter more—and the corn is grown in rows 3½ feet apart, with plants eight or ten inches apart, instead of in hills. Just as good cultivation should be given as for grain, for full development of size and nutritiveness in the plant is desirable.

Make a Bermuda Lawn.

To the Editor: What can I do to kill wire grass? It gets in the lawn and it is impossible to keep it out.—M. R. O., Modesto.

If one has a blue grass lawn upon which he is willing to spend all the time and money necessary to root out intruders, wire grass (by which we suppose you mean Bermuda) can be continually kept down so as not to be noticeable, but we know of no easy killing method. For ordinary house-lawn purposes, in a hot valley, we would not try to kill a friend who will stick as close as Bermuda. Rake off all the top-growth when the frost kills it. Rake it clean or pare off the whole surface flat and smooth with a sharp spade. Do this every winter and you will have a new velvety lawn every summer. Mow it and give it a good watering about once a month and praise the Lord every day that he made it so easy for you.

Testing Land for Alfalfa.

To the Editor: I have forty-five acres of irrigated sandy land in Merced county, in which for the last five years I have raised beans; now the land is sowed to barley. I want to put it in alfalfa, but before doing so I would like to be sure that the land is good to raise alfalfa. Please tell me how to test the land and name some competent party to advise me.—Owner, San Francisco.

Messrs. Barley and Beans are among the very best soil experts practicing in California. Mr. Barley makes a specialty of rainy season investigation, and Mr. Beans is a famous authority on summer conditions. If they have worked on your place for five years without taking all your money away from you for expert fees, you can depend upon it that your land is good for alfalfa, and for almost everything else. Alfalfa is not a prig. All he demands is fairly good, deep land and decent farming.

Transplanting Beets.

To the Editor: After having transplanted beets and mangels I noticed that the majority of these plants turned prematurely to seed. What would you suggest as in regard to a preventive?—E. H., Alameda.

Fleshy rooted plants are always more apt than fibrous rooted plants to be thrown out of step by transplanting. By the set-back the biennials think they have reached the second season's growth and go to seed instead of making larger roots. The preventive is to transplant earlier, that is when the plants are smaller, and to lift them with a trowel so that they do not lose their laterals, as they do by pulling out of the soil.

California Weather Record

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau at San Francisco for the week ending at 5 p. m., May 1, 1917:

Stations—	Past Week.	Rainfall Data.		Temperature	
		Seasonal To Date.	Normal To Date.	Max'm.	Min'm.
Eureka .....	...	30.22	22.55	56	42
Red Bluff .....	...	17.00	23.31	82	43
Sacramento .....	...	12.81	19.01	82	46
San Francisco .....	...	15.72	21.33	74	46
San Jose .....	...	12.40	16.06	78	42
Fresno .....	.16	7.06	8.95	86	48
San Luis Obispo .....	...	22.54	19.60	84	42
Los Angeles .....	.04	15.02	15.12	68	46
San Diego .....	.04	9.78	9.60	62	52

By
the Editor

QUERIES AND REPLIES

Inquirer Must
Give Full Name
and Address

Ways With Beans.

To the Editor: As I wish to plant about 11 acres of pink beans this year and am inexperienced, will you answer the following questions in your paper: Number of pounds of seed to acre? Time to plant? How often to irrigate and cultivate? I have heard that if planted too early there will develop flies or worms in beans at harvest. Is this so? If irrigated at wrong time, I have heard the blossoms or small pods will fall off. How about it?—U. F. A., Richfield.

If you wish to plant pink beans on ground that is apt to be rather dry, drop the seeds about eight inches apart in rows three feet apart—which will take from 15 to 20 pounds of seed. On moist ground, drop at six inches in rows 30 inches apart, which may take from 25 to 30 pounds of seed. On dry land not to be irrigated, plant immediately, for it is now getting late. On moist or irrigated land, beans can be planted through May and into June, and later planting is preferred on such land in the interior valleys because there is less danger of the blossoms blasting in hot dry winds. Cultivate often enough to keep the surface mellow. Irrigate sufficiently to keep the plants growing well until the pods are set—if it takes all summer. The number of times depends upon the soil and how it holds the water for the plant. After the pods are formed, be careful not to irrigate too much nor too late. Late planting does often reduce weevil injury by bringing pods after the mother insect has finished egg laying, but under dry conditions if you figure too much on getting no pods for the bug you may not get any for yourself, and the same policy on moist land may get your crop into fall rain or frost. It is safer not to irrigate during bloom and setting. Previously applied moisture should be enough to carry the plant through this period. Therefore, be sure to get enough beforehand, either natural or by irrigation, for late irrigation on plants which have become too dry serves no good purpose and is apt to start a second growth on plants which should be maturing. If the plant is still growing well this is much less likely to occur.

Dangerous to Peach Trees.

To the Editor: I am thinking of sowing alfalfa between my peach trees. Can the trees stand as much water without injury as the alfalfa would require? I would like to check the ground off in larger checks than one row wide, which would leave some of the trees standing in the water when irrigating. The soil is rather heavy.—Subscriber, Wheatland.

On a deep, light loam the water might distribute itself fast enough to save the trees from injury. On a heavy soil the chances are that the trees would soon be drowned out unless you were very careful to irrigate very lightly and just frequently enough to keep the soil in the right condition of moisture. The best results with alfalfa would probably require on the average two or three times as much water as the best results with peaches.

Frost Injuries to Peach Twigs.

To the Editor: I have Tuscan cling peach trees four years old, which had a heavy setting of blooms but later on nearly all fell off and the leaves which started out were small. In some cases only half of the tree is affected and the other half has a good crop of fruit. Now, alongside of the affected fruit spurs there are coming new, healthy shoots. The affected fruit wood does not seem to have any life in it and upon close observation one can see small brown raised places on the bark of the fruit wood. I am sending some of the affected twigs.—Subscriber, Live Oak.

There are no signs of disease on the bark acute enough to explain the behavior of the trees. This behavior is covered by the discussion by Prof. Smith on the first page of our issue of April 21; particularly the effects of low temperatures in the latter part of that article. Parts of the tree being differently affected is probably due to different exposures to frost and chill and to different conditions of sap flow. This may affect whole branches or it may be manifested by twig injury all over the tree. Theoretically, the habit of a tree to start top buds first is due to concentration of sap and greatest pressure toward the ends of twigs. This condition also invites greatest injury by frost and gives us twig killing, while good shoots will start from uninjured parts below. If the chill does not amount to killing there may be a weak start of small leaves, as is shown by your specimens. Where it is practicable, it is desirable to cut back weak growth to points where good shoots promise strong growth of new wood. Branches which give only a few small leaves instead of good lateral shoots are apt to die-back later.

Kerosene Emulsion and Cabbage Lice.

To the Editor: I followed the department's formula for making the kerosene-soap emulsion, but the result was not to my idea of what it should be. It separated into two parts—a thick white curd and a milky liquid with a kerosene-blue shade. I strained and used this on my cabbage for green aphids, with no results the first or second application. Do you think it an improper solution, or should I use it oftener?—Subscriber, Walnut Creek.

Probably you did not pound the stuff enough to get a good emulsion. This may be done by churning, by revolving agitators, as in an egg beater, or by pumping the stuff back into itself with nozzle and force pump. The last is the commonest way. When the agitation is adequate practically the whole of the mess changes form and becomes like clabbered milk, and this is added to the ten or more times its bulk of water, according to the strength you desire to use. One to 20 is strong enough for plant lice. The essential is not in strength, but in getting the dope on the bug. What you strained out of your mixture would kill it—in fact everything in the formula would kill the bug if applied with sufficient force. Even the water would do that for an aphid. The dilution is not for the sake of the bug, but to save the plant from injury. Hitting the cabbage aphid is no easy job and you must keep at it until you get

Deep Cultivated Layer Saves Moisture.

[Written for Pacific Rural Press.]

In all the conservation talk now being buzzed, no element is of more importance than conservation of the scant water which has fallen. On dry-farmed land, the Eastern "dust mulch" of two inches is entirely inadequate for our long hot dry season. A minimum cultivated layer of four to six inches will be found most economical from the water standpoint. This layer with all its moisture and plant food must be lost to the roots of trees and plants. Therefore, the "cultivated layer" should be supplemented by subsoiling. Air and moisture, with plant food, should be placed and kept below the dried-out surface, so bacteria can exist to make the food available and roots can get to it.

Sheridan W. Baker of Sonoma County is one who has proved the practicability of this proposition by several years' trials. His neighbor, E. D. Seaton, is another.

Three years ago Mr. Baker plowed six inches deep in half of nine acres of prune trees about 18 years old, set 20 feet apart. In alternate furrows while they were open, he subsoiled six or seven inches deeper than that, except within six feet from the trees. This required only two horses. Next spring, when he plowed the orchard crosswise, on the half that had not been subsoiled the plow ran nicely along on the plowpan, but when it hit the subsoiled half the plow buried itself so that a wheel gauge had to be put on. Since then Mr. Baker has run the subsoiler about ten inches deep every fall in the orchard to break up a soft plowpan left by his weed cutter. Each year it is run crosswise of last year's direction.

The weed cutter is a six-foot blade which cuts about three inches under the soil, simply lifting the surface dirt and letting it fall without turning up any moist soil. On a piece of morning glory he used the weed cutter every Monday, running crosswise each time of the direction of the time before. Late in the summer some passersby said that he was drying out the soil. He kicked aside the surface mulch and balled up a handful of moist

dirt to throw at them. His soil is close to the hills and is not so heavy as Mr. Seaton's. Neither of these ranches is irrigated.

The Seaton orchard is of seven-year prunes and apples on adobe and near-adobe. When the trees were one or two years old, the ground was plowed as deeply as four horses could pull a 16-inch plow. A subsoiler followed in the furrows to a total depth of about 30 inches. Two years ago the orchard was plowed 16 inches deep by tractor. Last year it was plowed six or seven inches deep and worked up both ways with a three-shovel cultivator to get it in shape for the bar weed cutter. This was run through the ground six inches deep every two weeks until November 1, alternating two or three times with a shovel cultivator as deep as the horses could pull it.

"We like to keep the ground light and airy," said Mr. Seaton. "But we don't want to turn up moist under-soil where it would dry out and kill the bacteria. We cultivate late because we like to keep the trees vigorously growing in the fall when they are developing fruit buds. We have never had trouble from fall frosts. Frost doesn't hurt trees when the sap is receding and the leaves dying, anyhow, but sour sap may. One year we had a warm rain after our neighbor's trees had started to go dormant, but while ours were still green and growing. Our trees kept on growing. His young trees started new growth, then sour-sapped."

"We have four or five inches of dry mulch. The rest is moist all the year around. These trees did as well in the dry years of 1912 and 1913 as during any other."

"Last year we ran a 'middle break' plow two round trips 12 inches deep in each row, making four furrows four feet apart. This drained and aerated our heavy land, so this year it was like an ash heap. Adobe must drain out so it is dry enough to crumble when it is turned over or it will turn in slabs and remain in clods."

Citrus Fruit Quarantine Proposed.

A public hearing on the proposed quarantine on imported citrus fruit will be held at Washington, D. C., May 8. The proposed quarantine is due to the fact that citrus canker is known to exist in eastern and southeastern Asia, the Philippine Islands, Oceania, Malayan Archipelago, Japan, and South Africa, and that fruit infected with the disease is being imported into the United States from these regions. If adopted, the quarantine will prohibit the further importation from these sections of such fruit as oranges, lemons, and grapefruit.

The commercial importations from the countries affected by the proposed quarantine are so small at the present time that the chief danger is believed to consist in small lots of fruit brought in for personal use by returning travelers. As a precaution against the introduction of

citrus canker into this country, the importation of citrus plants has been prohibited since December of 1914. The disease, however, can be brought in on fruits as well as on plants.

Citrus canker has already made its way into the Gulf region of the United States, presumably in 1911, from the Orient. The Federal and State authorities are now fighting the disease and a vigorous attempt to exterminate it by the burning of citrus trees is being made, with prospects of success in several of the infected States. The campaign is expensive, however, as it involves the burning of between \$5,000,000 and \$10,000,000 worth of citrus trees. Moreover, the western fruit districts of California, New Mexico, and Arizona are still free from the infection and every effort is being made to keep them so.

FERTILIZING VIRGINIA PEACHES.

Four years of experimental work in fertilizing peaches at the West Virginia State Experiment Station at Morgantown, W. Va., has shown that the peach is a heavier feeder than most fruits, and that it uses a large amount of nitrogen and potash and a very small amount of phosphoric acid. Early work in that State gave better results from the use of complete fertilizers than from incomplete ones. Work with single elements at first was extremely unsatisfactory and in some cases rather dangerous. Later experiments show that trees treated with nitrogen not only were healthier and sent out more fruit buds, but that the use of this element doubled the growth of trees and the yield of fruit. The use of nitrogen and potash together influences the size of the fruit. The use of nitrogen on the various orchards produced an average income per acre of \$468.85 against \$275.43 from plots which were not treated with this element. "The theory that heavy fertilization with nitrogen injures the peach is shattered by these experiments."

STARCH IN APPLE TREES.

[By W. A. Price in Ohio Jour. Sci.]

During the dormant period, starch reserve is stored in the living cells of the pith, wood parenchyma, and medullary rays of the apple. With approach of spring, starch is found in the tissues of the bark, appearing first in the phelloderm and collenchyma. As the leaves begin to appear, starch begins to disappear from the various tissues in order as follows: Bark, wood parenchyma, rays, pith. It is used first from the youngest wood of the branches in the top of the tree, later from the lower portions of the tree, and finally from the roots. A portion of the starch reserve may never be used in the growth of the tree, but remains behind to be included in the heartwood, where it remains indefinitely and renders the wood susceptible to decay.

There were sales of prunes to the Eastern trade April 20 at 6½ cents basis, with premiums for two of the larger sizes, according to O. A. Harlan of Santa Clara County.

Cresol soap is out of the market and whale oil (fish oil) soap is hard to get. Liquid soap is not made now because potash is so hard to get.

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24 in. long, 7 in. wide	18.00
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How 150 City Boys Furnish Fruit Harvest Labor

(Continued from first page.)

trees is located Camp Perkins, so called in honor of President George C. Perkins of the society. Seven big wooden platforms contain twenty-four bunks each, in which lots of straw and mattresses are put each year and covered with tents. The officers' tents are not far away. Across the baseball ground from the boys' tents are benches about 50 feet long, where the boys scrub their heads before eating. A short trail leads to the great canopy under more trees, where a dozen tables 16 feet long furnish entertainment twice a day after God's blessing is asked upon the food. The kitchen, sick-room, matron's and cook's tents are nearby, the former two being screened against flies.

Among the trees are various swings, bars, and athletic equipment to supplement the perpetual baseball. Nearby is an open-air pulpit and plenty of seats, where religious services for the boys and the neighborhood have been held every Sunday. The organ and hymn books are owned at camp and local ministers have provided the sermons.

WORK AND PLAY.

Bugle reveille calls the boys at 5:30 a. m. In a half hour they dress, wash, clean their teeth (which is done twice per day) and proceed to breakfast at 6 o'clock. At the same time lunches of a variety of sandwiches and cookies or doughnuts are put up. At 7 a. m. the boys fall in line, respond to roll call and are detailed for the day's work. If they must go over a mile, the grower who uses them that day furnishes conveyance. The grower also furnishes water and proper toilet facilities. An hour at noon for lunch and three or four hours' work afterward finish the work. There is more leisure early in the season than later. The society supervisor credits the boys with the berries they pick and encourages generous filling of trays as well as clean picking. The grower's representative receives the berries and sees that everything is satisfactory. Some days the weather gets warm by 11 o'clock, but a cool breeze comes before noon and the weather is fine.

Recreation follows work, and continues two hours after supper. There are four or five uniformed baseball nines among the boys and there is always a game on during proper hours. They often play the Sebastopol boys at the local ball park. An adult umpire prevents troubles. Several times a week they go swimming in Green Valley Creek, less than a mile away; and on Sundays they take a bath there whether they need it or not.

Saturdays are holidays except in very urgent cases of shipping berries, none of which are picked in the afternoon. Blankets and beds must be aired, tents cleaned up, camp grounds put in shipshape, and then comes whatever sort of fun a well-supervised bunch of boys can devise.

Sunday is devoted to rest, letter writing, bath, clean clothes, religious services, etc. A retired Congregational minister, William Rogers, who for ten years gave the boys the

finest kind of Sunday talks, has recently passed to his reward.

Patriotism is taught in many ways. Always during daylight Old Glory floats from a tall flag pole; and two other flags decorate the entrance and the superintendent's tent. On Saturdays, Sundays, and holidays about twenty-five flags fly from the tents, etc.

On the Fourth of July, regardless of berries, the boys celebrate right. Athletic field events for prizes, baseball, and patriotic exercises fill the day. At night they have fireworks, and sometimes a big campfire. The celebration is attended by hundreds of neighboring people. This year two or three extra field days are planned.

DISCIPLINE AND ORGANIZATION.

"We prefer to reward good conduct rather than punish boys for bad conduct," says Mr. Turner. "The great problem is supervision in camp and fields. For field work, the boys are divided into four squads, each under a supervisor, and generally working in a different berry patch. Each squad is made up at the beginning of the season, and elects its own captain and lieutenant, who help in the discipline. In separate groups, the boys are divided into seven "tent companies," according to size. Each tent company elects a captain, who is responsible for good order in that tent. These captains report to the night watchman, who keeps records of conduct for each tent. Every second Saturday a prize is awarded to the tent having the best record. Since one boy might spoil the whole twenty-four boys' chance at the prize, this makes every one a peace officer on his own account.

The most coveted prize is a trip to the Russian River and a swim. Sometimes the winners get ice cream or candy or other rewards.

Some years the boys have been organized into a regular municipal government with an elected mayor, city clerk, police officer, and athletic committee. The greatest troubles in this camp are the constant additions of new boys from the juvenile courts requiring more supervision than the rest.

ASK SCHOOL SUPERINTENDENTS FOR HELP.

What has been so successfully done with such boys for thirteen years in one place proves that it can be done in other places. Our suggestion is that our readers who have harvest work that boys and girls could do should get together and advise with the County Superintendent of Education to arrange for squads of boys or girls to work for them this summer. Sharing the expense of camp and supervisors makes it light on all and will be far cheaper than to let fruit crops dry up. If mothers, teachers, relatives, etc., can share the camp life, it will be cheaper and perhaps better for the boys or girls.

It is too late to spray for peach curl leaf, warty walnut leaves, and dark corky spots on pear leaves.

In cutting pear blight you will spread it unless tools or cut surfaces are thoroughly disinfected.



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Rosin Spray

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Bean Varieties Demanded by Markets.

[Written for Pacific Rural Press.]

It is admitted that even the most despised bean in normal times will be brought into more general use by the present high trend of prices as substitutes for the better grades; and already this influence has been brought to bear on the less desirable kinds.

SMALL WHITES OR "NAVIES."

Small whites or "navies" have come to be recognized as the yardstick for bean price measurements, for their use is universal, an especially strong market being found for them in New York and Boston. The army demand is for navies at anywhere near reasonable prices. Their culture, however, is more limited than the colored varieties, and many predict that at present prices their use will be curtailed and cheaper beans substituted. In fact, rumors are current that both the allied governments, as well as our own, are reducing the percentage of "navies" in their latest contracts. The coast districts are the largest growers of this variety in this State.

LADY WASHINGTONS.

White, but larger than the "navy," Lady Washingtons have found favor in the Middle Western and New York markets and are recognized, it is said, as desirable to the army buyers. They are quite generally grown in the river districts tributary to San Francisco bay; and some are grown on the irrigated lands of the interior valleys.

MEXICAN PINKS.

Mexican pinks, grown in California, are reported to have been included in recent army and navy contracts because of the difference in price between them and the white varieties; and bean operators predict a more staple market for them in the future on this account all over the United States.

Markets have been established for pinks in the past, as far East as the Alleghany mountains; and because of the scarcity and high prices of red kidneys the past season canners have put up large packs of "pinks" and successfully marketed them.

The "Manchurian pink," a bean similar to our pink, but grown in Manchuria, has been exported to this country in limited quantities, finding a market in New York and the Northwest; but during the past year entire shiploads have been imported by England and France to relieve food shortage in those countries, so they are not expected to be market factors in this country the coming year.

LIMAS.

Limas are a distinctive California product. Our growers have a monopoly, inasmuch as they are grown in only limited quantities elsewhere. Report has it that army contracts call for some limas; but without this stimulus market conditions are bright. Their production, however, is limited to southern California coast counties.

MEXICAN REDS.

Mexican reds are in practically the same class as "pinks," except that they are darker in color. They, like

pinks, are grown under many conditions in California; but the market demand is generally far less insistent.

RED KIDNEYS.

Red Kidneys have been popular with the canners; but a short crop last season advanced them in price beyond the ideas of some canners, who, as previously stated, substituted Mexican "pinks" and "reds."

BAYOS.

Bayos are white, not as finely flavored as the Lady Washington; but substituted quite generally by restaurants for the former in soup making. Markets have been established for them in Texas and the Southwest, as well as in Alaska; but their production has been reduced along the Sacramento river, where they are mostly grown because of better returns from other varieties such as "pinks" and Lady Washington.

BLACKEYES.

Blackeyes are grown extensively in many parts of California for export to the southeastern part of the United States, where a market is found for them among the negroes. They are a good dry land bean, although difficult to harvest without "shelling out" badly and cracking.

TEPARIES.

Teparies are white, smaller than the navy. They originated in Arizona and are heavy producers on dry land; but their market qualifications are considered doubtful by experienced bean dealers, due to different cooking requirements from navy beans, for which they are generally substituted, and their greenish color. Present prices are no indication of their commercial standing, as they have been brought about through extensive seed purchasing of intending planters. Dealers in San Francisco report unfavorable experience with teparies during the past season, even to the cheaper restaurant trade. Rumors that they are to be used to mix with "navies" are dispelled by the statement that the operation would so deteriorate the quality of the latter that the price would not justify their use.

HORSE BEANS.

Horse beans have not been of great commercial importance because of their susceptibility to weevil. Because of this some houses refuse to handle them for export trade on account of losses occasioned by Government regulations on interstate shipments of weevil beans. Their culture is chiefly confined to coast districts; and markets are chiefly the New York Italian districts.

Garbanzos, pink beans grown in sections of southern California, have not been a particularly attractive market bean in the past, due, it is said, to lack of selection.

CRANBERRY BEANS.

Cranberry beans have been grown in a limited way along the rivers tributary to San Francisco and latterly in Santa Barbara county; but in the latter section limas are more profitable and will doubtless supplant the cranberry popularity, at least for this year.

It seems to be a question in California, not whether to plant beans but what variety to plant. Out of the varieties that have assured market, those which suit local conditions are the ones to plant. Market demand is very unsettled now, but what is known is summarized in the above article.

We are facing a world wide food shortage. For the sake of the hungry world as well as for the good of your bank account you ought to make every foot of your land produce its utmost. You can't possibly do this without fertilizing. Germany's crop failures for the past two years have been largely due to her inability to secure proper fertilizer materials.

GOLD BEAR FERTILIZERS

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Why Europe Makes Bigger Crops Than the United States

Average Production of European Crops is as Follows:

Wheat 33 bushels per acre
Oats 45 " "
Potatoes.....199.84 " "
Cotton in Egypt..400 pounds "

Average Production of American Crops is as Follows:

Wheat 14 bushels per acre
Oats 40 " "
Potatoes..... 97.15 " "
Cotton185 pounds "

European farmers use about 600 pounds to the acre of a Home-Mixed Nitrated Fertilizer containing 8 per cent of Phosphoric Acid and 4 1/2 per cent of Nitrated or Nitratable Nitrogen.

American farmers apply 200 pounds to the acre of a Fertilizer containing 8 per cent of Phosphoric Acid, together with 2 per cent of Nitrogen which is mostly unavailable.

The difference in results is largely due to the large amount of Nitrated Nitrogen used in Europe per acre as **Nitrate of Soda**. Our pitifully small American yields are due to failure to appreciate the necessity of using Nitrated Nitrogen.

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WAR IS DECLARED

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Use **WESTROBAC** to
Inoculate your **BEANS** for larger crops.

WRITE US FOR PARTICULARS.

Western Soil Bacteria Company

442 Sansome St., San Francisco

Vegetable Garden Suggestions.

[Written for Pacific Rural Press.]

Pumpkin Bugs.

To the Editor: Last year we lost practically our entire garden on account of the "pumpkin bugs." This year they are appearing very much earlier in the season. My squash and pumpkins are just out of the ground.—L. M. J., Walsh Sta.

Lay some shakes, boards, shingles, etc. between the hills and catch the bugs in early mornings; for, many will hide under them. Egg laying begins early, so catching one by hand now may prevent a thousand later in the season. You might dust part of the plants in each hill with arsenate of lead powder mixed with an equal quantity of flour or sulphur.

Doubled Size of Rhubarb Stalks.

In our garden in San Mateo County, the rhubarb started to go to seed early this spring. We cut off the seed stalks before the sheaths bursted and stopped that tendency. But the leaves and stalks would not grow much. We put bottomless boxes over three of the seven plants, after pulling all leaves but the very smallest. Two weeks later the rhubarb was pulled to eat. That in the boxes averaged considerably over twice as large as the best of that outside. The boxes were just large enough to fit over the plants, forcing the smallest leaves to point upward.

Artichokes.

Don't allow the artichoke buds to start to open; for then the fleshy bases will be tough and tasteless. If many are allowed to open new buds will not come. It is said that the size can be increased by tying a string around the stem tightly enough to make a marked depression in which the string lies. To get winter artichokes, let them flower in June and cut them off to the ground late in July, covering the roots then with a mulch and keeping them moist. New shoots will be bearing about Christmas. Artichokes do not thrive so well in very hot climate.

Garden Mulch Saves Water.

Lots of expensive water and cultivation are saved in O. E. Bremner's half-acre garden in Sonoma County by applying a straw or other mulch late in June among the corn, strawberries, currants, watermelons, etc. This keeps the ground moist nearer the surface and enables plant roots to feed in the soil where plant food is most plentiful and available.

CORN AND BEANS AS SECOND CROPS.

[Written for Pacific Rural Press.]

Indian corn can be planted any time between May 1 and July 1 with safety on the sub-irrigated lands in the Manteca and Ripon districts of San Joaquin County according to the experience of R. D. Rankin, who has harvested good average yields in years past.

Two years ago Mr. Rankin grew 40 acres of corn on land that was plowed well in February and planted May 8. That year he harvested 27 sacks to the acre, having an average weight of 134 pounds per sack. He also at times plants corn

as a second crop after taking off a crop of grain hay, and then irrigating the land before plowing for corn. This makes corn planting about July 1, but still the corn has time to mature before fall frosts.

Beans are also used as a second crop by Mr. Rankin. Two years ago he harvested nine sacks of Mexican Reds to the acre after first having harvested a 30-sack crop of barley on the same land. The beans were planted July 1.

ELEVEN TONS OF ALFALFA PER ACRE.

[Written for Pacific Rural Press.]

Early in April our attention was attracted to an exceptionally fine field of alfalfa in Stanislaus County that contained 40 acres and was owned by Standiford Boren. We were told that the field was sowed in March three years ago after thorough preparation of the land. The seed was broadcasted; and before it could be harrowed in, it began to rain; and before the field could be worked again the seed began to sprout.

It was the common Chilean variety; and during the first season the field yielded an average of eight tons to the acre, care being taken against too frequent irrigation, as the land sub-irrigates some, and it has been the experience of alfalfa growers in the section that two or three irrigations during the season are better than an irrigation for each crop.

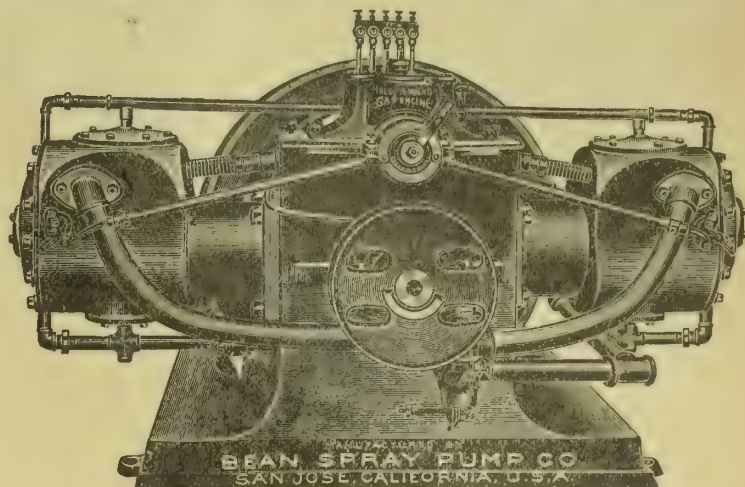
In 1916 Mr. Boren spread 300 pounds of gypsum to the acre after the first crop had been harvested; his theory being that the first cutting is good anyway because of the long growing season, but that subsequent cuttings are speeded up a little by gypsum. That year he harvested 11 tons of hay to the acre from the entire field. A liberal coating of barnyard manure was applied last winter with the expectation of maintaining a high average yield this year. The good even stand that he secured was largely accounted for by Mr. Boren by the fact that the rain followed directly after seeding, thus sprouting a larger percentage of the seed than would have otherwise resulted.

HEAVY YIELD OF SUDAN.

To the Editor: Answering your question, I have planted some sudan grass seed each year partly on sediment soil, partly on gravelly clay loam and partly on adobe. The gravelly clay loam did as well as any. The grass was always killed by winter frosts, but survived light frosts in the fall. My tonnage per acre for hay is only approximate. I should say that it averaged 2½ tons, but none of it was irrigated. I generally had two cuttings per season for hay and a more or less heavy pasture crop after. I cut my seed when dead ripe and beginning to shatter. After that there was a light hay crop or a very heavy pasture crop.

One year I cut oat hay the first day of June and immediately plowed the land and sowed it broadcast to sudan (the other plantings were in

BEAN Opposed Engines



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The Bean "Opposed" is a two-cylinder four-cycle engine with the cylinders placed on opposite sides of the crank shaft. This "Opposed" type has many advantages over single cylinder engines.

The opposed action makes the balance of the engine practically perfect—engine may be run at full speed in any place and under any conditions without destructive vibration. A heavy foundation is not necessary, as Bean opposed engines run smoothly and evenly.

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CONSTANT SPEED: The opposed type of construction affords constant uniform speed. Ordinary engines stop when the speed is cut down by momentary overload. Bean engines recover quickly.

SIMPLICITY: The Bean engine is free from complications. The mechanical movements are all simple and direct.

DEPENDABLE: Only best materials are used, and all parts carefully machined by expert mechanics; thoroughly tested before leaving our factory, and ready to run day or night.

BUILT-IN MAGNETO: Engines are furnished with Bosch high-tension magneto, requiring no batteries or coil. Some sizes equipped with make and break ignition if desired.

This engine is adapted to a wide range of uses. It is a practical outfit that can be used if you want a dependable power unit at your disposal night or day.

Write for information and let us tell you about the Bean Opposed Engine best suited to your requirements.

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SAN JOSE, CAL.

rows). There was not one drop of rain after this planting and I got about a third of a stand which I cut for hay. GEO. W. LANE. Morganhill.

Weather news is now received regularly by wireless at 270 amateur radio stations located in nine of the Northern and Western States. In this way the wireless operator is enabled to give his neighborhood the weather forecast as soon as it is issued.

The University of California has devised a very simple system of keeping farm accounts and business records and has been putting this system in practice with the Imperial county farmers through the Farm Bureau.

Plant Your POTATO Land
When Crop is off to

RHUBARB

If planted then you can expect BIG PROFITS by fall or early winter. OTHERS MAKING \$1,000 PER ACRE ANNUALLY—SO CAN YOU. Don't put it off any longer. April-May-June positively best months to plant. WRITE

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Give cows plenty of pure water.

Mechanical Power on the Farm

Users of tractors, engines, pumping plants, motor trucks, automobiles, electric motors, and other mechanical farm power are invited to make this department an exchange of their experiences and troubles.

CITIES MUST FURNISH POWER FOR GREATER FARMING.

[By Dean Thomas Forsyth Hunt, at the Agricultural Inquiry undertaken by the State Council Defense, San Francisco, April 23.]

What has a great city to do with the production of food stuffs for our allies? The answer is that if anything more is done than is already being done, it must be done by the people of the cities, primarily by those of the large cities. Most people think that the raising of a surplus of food products is a rural problem. It is not. It is an urban problem.

Every farmer is now working at top speed. He is using every dollar of capital and every ounce of muscle he possesses. The farmers are anxious and willing to help, but without the aid of the cities they are powerless to do more.

There are about one-quarter of a million persons in California engaged in agriculture and allied industries. There are approximately one million in other gainful occupations. In the United States as a whole of every three persons in gainful occupations one is engaged in agriculture; in California the relation is five to one. This is no time to discuss reasons. Suffice it to say that assuming a three years' war, one-quarter of a million people now in the cities of California will be needed to win this fight for democracy. Fifty thousand will be required for the army and navy and for ship building, and 200,000 will be required on the farms. Twenty thousand are needed at this moment in the open country.

It is time the American people began to deal in realities. It is all very well to talk about what women and children can do—and the more they do the better—but the need in this great emergency is strong, able-bodied men between the ages of 19 and 35. Unless we intend to depend upon the allies to win this war for us, one man out of every four now employed in the cities must change his occupation. There are many activities in the cities which are highly desirable in times of peace, which must be curtailed during this crisis. If the people of the cities do not solve this problem the German Government will solve it for them.

During the past week we have conducted an agricultural inquiry in 37 counties in California. Everywhere it is a question of power; more man power, more horse power, more mule power, more gasoline power, more electric power. It has become a refrain: "Power, power, power, give us more power. We have land but we do not have power."

Much transient labor has gone east to the munition factories. Even horses and mules have faded away. Everybody knows where they have gone. As soon as enlisting begins in earnest the situation will rapidly become worse. Every army division of 22,000 men requires 7,500 horses and mules. For every three men that enlist in the army, one horse or mule will be required to make them effective. Notwithstanding the fact that the motor truck saved Verdun, immediately behind the army of one million men there were 300,000 horses and mules. The number of horses cannot be multiplied during the period of a three years' war. If every farmer in the United States decided today to raise more horses, there would not be another single horse in this country tomorrow.

What is the answer? Substitution of gasoline power for mule power on California farms. What is needed is a corporation with a capital of \$5,000,000 to build and man farm tractors and then rent the man and the tractor to the man on the land. The capital and the men must come from the cities. Every dollar and every man in the open country is now employed.

I am putting it up now to the people of San Francisco to furnish the money and to furnish the men, if not by a group of financiers, then by popular subscription. The only sacrifice may be a possible loss of a few dollars. If the enterprise is well managed it may even pay dividends. But I am not putting this up to you on this basis, nor deciding the best method of doing it. If you desire to win this war here is your opportunity. This is the real need. Will you meet it? Loaning three billion dollars to our allies cannot help them greatly unless somebody has something to exchange for the money. If we do not have it, who will?

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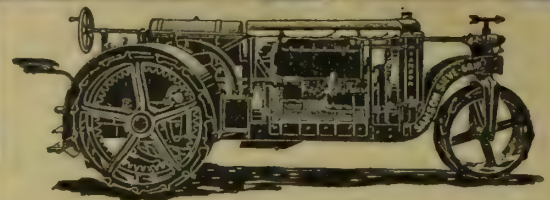
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California Hog Book

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WATER INCREASED PRUNE SIZES.

[Written for Pacific Rural Press.]

Sonoma County, which has long boasted of her freedom from irrigation, has found by experience on 500 or 600 acres put under irrigation last year, that the increased crops are better than the reputation for that kind of dryness.

At the county food investigation held in Santa Rosa April 18, it was stated that 5,000 acres, mostly of young orchard, could be irrigated from Russian River. Horticultural Commissioner O. E. Bremner is enthusiastic over the possibilities, especially on the lighter soils. On the adobe and heavy soils, moisture can be saved all summer by fine cultivation of the surface until early fall. F. A. Abshire, however, has irrigated 60 acres of prunes from a pump for six or eight years. He gets no greater tonnage, but much greater size, which is better than increased tonnage. A 12-horsepower engine runs a seven-inch centrifugal pump for him, lifting the water about 20 feet. He floods part of the orchard once; but the lighter part twice. "Everybody who has an orchard ought to irrigate," says he.

SMITH FORM-A-TRUCK.

[Written for Pacific Rural Press.]

Eight different sorts of wagon beds may be formed on the Form-a-Truck frame by using demountable sections. The body is designed to replace the body of a Ford car with a channel-iron frame on which the beds are built. It is guaranteed of one-ton capacity. The sections include a single wagon bed, solid side boards and end boards which hinge on so they may be used for a bulk-grain truck with scoop board at the rear, or the upper side boards may be flared or set flat for a flat rack. Two sets of panel sides and a pair of panel ends may be set on vertically for a stock rack, or the lower one may be flared for lighter bulky produce such as cabbage, fertilizer, seed cotton, etc. If a closed body is desired, the upper panels form the top by bending their hinges toward center. If a flat rack for hauling crated goods is desired, the side boards are set on flatwise and panels vertical from their outer edges.

SIPHONING WATER.

To the Editor: I want to siphon water from a ditch with a rise of a foot to irrigate some garden truck, trees, etc. Can it be done without power?—J. W., Oakdale.

If the land to be irrigated is below your ditch water level, it can be irrigated by syphon without power. Otherwise it can not. Unless you have a pump with which to start the water flowing through the siphon pipe, it will be necessary to turn the pipe upside down, fill it with water, close the ends, turn it over so one end is under water and the other end below water level, open the end under water first, then the outside end, and let it run.

POWER NOTES.

A light-weight electric tractor to displace hand work in the garden was shown at the University Farm picnic along with several other types.

The Earlimart district of Tulare

County is being converted to irrigation from wells. Considerable new alfalfa has been planted and prospects are fine.

A newspaper report has it that Henry Ford has given the British Government his patent rights and specifications for the Henry Ford tractor; and that he hopes to have many tractors ready for use in the United States by August 1. Several other machines have already been put out as "Ford" tractors.

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My Copyrighted Book "How to Judge Engines" tells how high-grade semi-steel engines are made, advantages over cast iron, how common coal oil in a WITTE reduces power cost 65 per cent. Write today and get my "How-to-Make-Money" folder, and latest WITTE Engine prices. Ed. H. Witte.



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General Agricultural Review

Field Crops.

The onion crop of Coachella Valley will yield farmers \$750,000.

Spinach is attracting much attention around Sacramento just now. Canneries are actively working on this vegetable.

There will be sixty per cent of a wheat crop in the Porterville section, perhaps more, and the output will be 250,000 sacks.

The high school boys of Los Angeles are now helping the beet growers of the Van Nuys district to thin their beets and save the crop.

Hop growers are warned to reduce their acreage as the demand is small and the prices very low. There is also a large surplus of holdover.

W. B. Russell of Los Angeles, who has just returned from a trip of inspection, estimates a shortage in the grain hay crop of Southern California of twenty-five per cent.

The Board of Education of Chino declared last week a holiday, to give the high school boys and grammar school boys a chance to work in the beet fields and help to save the crop.

The program for the Annual Rice Festival at Madison, to be held on May 12, has been completed and all Yolo county citizens are invited to participate. There will be a free barbecue at noon.

M. H. Cottrill of Biggs says the rice in the Doty warehouse is shipped out. A small amount held to the last sold for \$3.50 a hundred. The greater amount went earlier and brought small figures.

Farm Adviser Lee of Alameda county states that a larger acreage of peas has been planted in that county this year than last and that the prospects are for an increased acreage of tomatoes. Cannerys are offering \$10 a ton for tomatoes, agreeing to furnish the boxes.

The grain crop in the coast counties, from San Francisco south, is very spotted. In Monterey, the north part of the county, the prospects are for a fair crop, while in the southern half there will be very little grain or hay. In San Luis Obispo and Santa Barbara counties the grain and hay

crop looks very good at this time.

News comes from Huntington Beach that the Holly Sugar Corporation is sending out letters to beet growers around Huntington Beach stating that arrangements were being made for the company to pay a price for the beets based on the price received by manufacturers for sugar, the corporation sharing with the grower the extra profit derived from the high price of sugar.

The sugar made from the 1916 beet crop was 820,657 short tons (2,000 pounds each), which was about 54,000 tons less than in 1915, but 169,000 more than the average yearly output during 1910-1914. California's output was 236,322 tons, yielding 18.35 per cent of sucrose (pure sugar) in the total soluble solids of the beets. California's total acreage in beets was 141,097 acres.

Citrus and Semi-Tropical.

The outlook for a good fig crop in Stanislaus county is promising this year.

The Sierra Heights Citrus Association, recently organized at Lindsay, will erect a big packing house there.

Warm weather the past week has hastened the maturing of the Valencia orange crop, which, contrary to early reports, is now expected to be normal.

The California Fruit Growers' Exchange expects to market 3,500 cars of navels and 1,000 cars of other varieties of oranges this season after May 1st.

Practically all grapefruit nursery stock in Southern California has been shipped to Texas for planting. During the past two years hundreds of cars have been shipped.

It is announced from Redlands that there has been 627 more cars of oranges shipped from there this season than last, and the oranges have brought more money in the east.

It is said that the Valencia orange shipments this year from the Fullerton Placentia district will reach between 1,200 and 1,300 cars. The value of the crop is put at \$1,200,000.

Riverside county, the home of the orange, is changing to deciduous fruits. Already the acreage to the latter fruits is as large as of oranges, lemons and grapefruit, and planting now is largely in favor of deciduous.

Deciduous Fruits and Nuts.

Ventura county will have a fair crop of apricots. In the Ojai country the setting is very heavy.

In Pajaro valley investigation shows apricots and apples not to have been so badly damaged by frost and rain as was earlier thought.

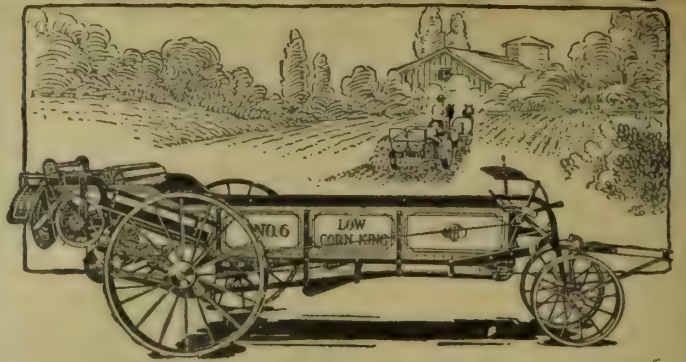
The Hayward district has this season the best apricot crop in Central California. Nearly all the orchards between Mt. Eden and San Leandro have seventy-five per cent of a full crop.

A ten-pound box of California cherries shipped to Detroit, Mich., and sold at auction April 30, brought the almost fabulous price of \$125, or at the rate of \$12.50 per pound.

Wyandotte and Palermo peach growers are contracting their crop at an average price of \$27.50 a ton to an Oakland cannery. The greater part of the tonnage consists of Muir peaches.

The walnut crop from Santa Barbara county south as far as Orange promises to be very large, if the blight does not affect it. Trees are now well loaded and but little blight in evidence.

The first cherries of the season were included in two eleven-pound boxes consigned last week, one to Chicago and the other to Kansas City. The cherries were large and of good color.



Settle the Spreader Question

THE farmer who uses a Low Cloverleaf, Low Corn King or Low 20th Century spreader these days is the man who makes the most money. His land increases in value when regularly fertilized. His crops grow better in quality and larger in yield when supplied with available plant food. Of all the spreaders on the market, the Low Cloverleaf, Low Corn King and Low 20th Century come nearest to doing this work as it should be done.

It is a long jump from the ordinary machine to the modern low spreader with its double beater and wide spread. Every farmer who knows the value of good spreading is buying one of these wide spread machines. As a matter of fact, no farmer can afford to buy any other kind, because the saving of time and labor and the better job of spreading done by a Low Cloverleaf, Low Corn King or Low 20th Century makes them worth more than ordinary spreaders.

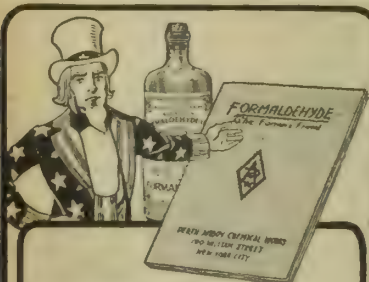
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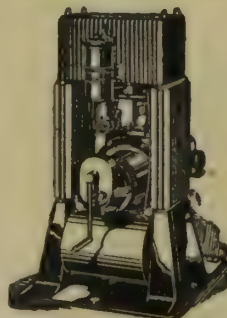
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The cherry crops in Santa Clara valley look well, and barring adverse weather, there will be a good crop of black cherries. Royal Annes are setting fully as good as the blacks in many soils.

Buyers are busily engaged in combing the apple districts around Pajaro for apples. As high as \$17 and \$18 have been offered with chances that the price may yet go as high as \$20 per ton.

A number of growers in the Sunnysvale district have been offered 12 cents per pound for the cherries in sight, but refuse to contract on that basis, as they believe that 16 cents will be offered before the fruit is in condition to market. The crop is reported to be less than one-half of normal.

The Federal labor union of unskilled workers, known as the Toilers of the World, comprising men, women and children employed as cherry pickers and packers, have formulated a demand for \$2.50 per day of ten hours work, commencing with May 1. All overtime at the rate of 30 cents an hour.

It is reported that J. R. Martin of San Francisco has signed a nineteen-year peach contract with Libby, McNeill & Libby of Chicago running from 1918 to 1936 inclusive, and covering a delivery of 65,000 tons of peaches, or 130,000,000 pounds. This is the largest fruit contract of its kind ever signed in California, and covers the crop of 1,000 acres yet to be planted.

Grapes.

The La Paloma Winery and Distillery has filed application with the courts for permission to disorganize.

The juice of wine grapes can be concentrated into a syrup that can be used for the canning of most kinds of fruit, Prof. F. T. Bioletti of the University of California asserts. Wine grape growers are advised to make other disposition of a part of their produce this year, rather than send the grapes to an already overstocked wine market.

Miscellaneous.

A Yolo county national farm association has been organized.

The supervisors of Riverside county have voted \$2,000 a year for support of a farm adviser.

The Canadian government has placed wheat, wheat flour and semolina on the free list, thus opening United States markets to Canada and Canadian markets to the United States in these products.

The Rural Press is informed that the German Kali Works, with offices at 25 California street, this city, have

decided to close temporarily their propaganda on this coast owing to the present war situation. They hope to resume operations when normal conditions return.

At a meeting of the directors of the Yolo County National Farm Loan Association it was reported that a total of \$60,000 in government loans have been filed.

The Riverside Bee Keepers' Association at a late session adopted a resolution advising the bee men not to sell their honey crop this year for less than 11, 10, and 9 cents a pound, for the three grades of the extracted product.

A correspondent recently visiting Santa Ana says: "Crops there look fine—apricots best in years, walnuts same; orange trees in bloom; sugar beets big acreage and look fine; barley fair; hay a little less than usual; labor very scarce."

The holdings of butter in cold storage in Los Angeles April 26, 1917, were 20,265 pounds against 6,229 pounds the same date last year, an increase of 14,037 pounds. The holdings of eggs in cold storage in Los Angeles April 26, 1917, were 56,176 cases against 43,314 cases the same date last year, an increase of 12,862 cases.

The meeting of the State Council of Defense with farmers of the Imperial valley last week was a full success. The visiting officials assured the farmers that the state of California would get behind the temporary weir, which it is proposed to build in the Colorado river at Hannon's heading. In return the farmers declared that they would plant 75,000 more acres than ever before to milo maize, tepary beans, peanuts and other late crops of vegetables, grain and forage.

Tulare Tree Planting.

The following table is furnished by Horticultural Commissioner Collins of Visalia, covering trees planted in Tulare county from Oct., 1916, to March, 1917:

Variety.	No. Trees.
Apples	2,622
Apricots	8,629
Almonds	5,341
Berries	76,592
Figs	17,104
Grape Vines	209,149
Lemons	4,017
Nectarines	1,427
Oranges	13,941
Olives	3,525
Pears	4,452
Peaches	40,640
Prunes	185,186
Plums	10,701
Pomegranates	2,196
Quince	1,488
Ornamentals	25,865

Crop Conditions in Orange County.

Roy K. Bishop, horticultural commissioner of Orange county, writes under date of April 28: "The crop conditions in this county are normal and many of the crops appear to be just a little above normal. The citrus are in a very excellent condition and blooming very heavily. Walnuts give every indication of heavy setting. Apricots are very heavy. The acreage has been reduced by taking out trees. Beets are in fine condition and making a fine growth. Thinning has been slow due to unsettled labor conditions. Barley hay and grain is about seventy-five per cent of normal. Conditions for beans are good

and the acreage will greatly increase. Condition of cabbage is below normal there being a large percentage seeders. Potatoes are in fine condition and making a good growth. Normal crop."

The ninth annual California Raisin Day celebration was carried out at Fresno last Monday with great enthusiasm. It is estimated that 100,000 people were present, including many notable persons and visitors from all sections of the State. The celebration was patriotic in character, and the proceeds of the festival are to be donated to the Red Cross fund.

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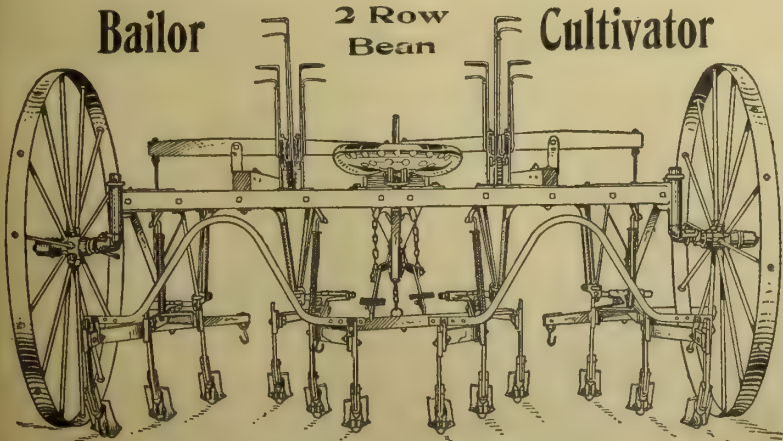
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Pin break, 12 shovel, balance frame, and suitable for use with sweeps and half sweeps. Center hung shovels, and successful three-horse draft equalizer. No neck weight.

Use one of these two-row cultivators and SAVE A MAN, SAVE A HORSE, SAVE YOUR TIME, and SAVE YOUR CROP while the saving is good.

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Oliver Chilled Plow Works Co.

9 MAIN ST., SAN FRANCISCO, or 821 TRACTOR AVE., LOS ANGELES

Profitable to Replace Poor Cows With Good

[Written for Pacific Rural Press.]

When he started to dairy at his present location near Sebastopol, Sonoma county, three years ago, C. S. Hamilton bought the herd of cows that were on the ranch. At that time his average income per cow was about \$7 a month and it did not take him long to see that he would soon be out of business on that basis.

Accordingly, he started to sell them off as soon as he could and replace them with the best cows he could get from the older and better Jersey herds of the county. That he has succeeded was shown by his January cream check from the Petaluma Co-Operative Creamery, which amounted to \$911 for the 57 cows he was milking, or about \$16 a cow for the average monthly production of over 37 pounds fat per cow.

In securing this production, Mr. Hamilton was handicapped by the meanest weather of the year for dairy cows, the first two weeks being very cold, and practically no green feed being available during the entire month because of the cold and dry weather. Production of most herds in the district at the time were away below normal for

the month even though heavy feed purchases were the rule.

While breeding was undoubtedly the most important factor in the herd's yield, feeding and care were also important considerations. Baled alfalfa hay was used for roughage most of the time, about 1,000 pounds a day being fed, supplemented with an 11-pound concentrate ration of cocoanut meal, shorts, and bran. The mixture of the latter for the entire herd per day was as follows: 180 pounds cocoanut meal, 210 pounds shorts, and 240 pounds bran.

Besides breeding and good feed, regularity of feeding and milking are essential to high yields in Mr. Hamilton's mind, and for that reason he is always punctual in his work.

With the actual demonstration of the value of good breeding before him, Mr. Hamilton has taken steps to perpetuate the producing qualities of his herd by securing a purebred Jersey bull for use on his cows. Only the heifers from the best cows will be retained for the future herd; and even those will be closely culled in order that the herd average may be still higher than at present.

More About Carobs for Stock Feeding.

To the Editor: I would request your valuable paper to encourage and spread the cultivation of one of the most valuable trees for California, so far neglected, and this is the St.-John's-bread tree—*Ceratonia siliqua*.

This tree thrives on dry hills in similar climates to ours, in Spain, Italy, Dalmatia, etc., and should prove a most valuable acquisition for our State.

The tree when full grown bears from 200 to 250 pounds of the so-called St.-John's-bread—a most valuable food for horses, cattle, hogs, etc., one pound being the equivalent of two pounds of grain.

The fruit contains from 30 to 46 per cent of sugar; 6 per cent nitrogen, etc. It is of a sweet, pleasant taste much relished by children.

In England it is an important constituent of many cattle foods.

The bark of the tree contains from 50 to 55 per cent tannin.

The tree is also very ornamental and furnishes shade to cattle. It will not grow on wet ground. The

seeds germinate when mixed in wet saw dust in about two weeks.

The most important item in transplanting is that the main root must be perfect. If broken off, the seedling will not grow well.

I hope the Rural Press will be able to induce a great number of landholders to start the cultivation of this plant.

FRED HOHLWEG.

Fairfax, Marin Co.

[This plant, which is commonly called carob in this country, has been introduced into California from time to time since pioneer days and old bearing trees can be found in many valley and foothill situations. It does exceedingly well and is handsome for ornamental planting and would be profitable for stock feeding according to standards prevailing from prehistoric times in Asia Minor. It can be purchased from California nurseries carrying ornamental trees in variety. Horticultural Commissioner Beers of Santa Barbara has recently taken much interest in its wider planting.—Editors.]

Breeding Into Purebreds

[Written for Pacific Rural Press.]

It has often been suggested that the surest way for the ordinary dairyman to get into purebred cattle is for him to secure one or two extra good cows and gradually increase his purebred herd by the natural increase. That this method is practicable is shown by the experience of C. A. Whitsett of Glenn county, who started with purebred Jerseys two years ago by purchasing two Jersey cows, 11 and 12 years old, from a prominent Jersey breeder. While old, both of these cows had Register of Merit records of over 500 pounds of butter fat in a year and both were bred at the time of purchase. Be-

cause of their records these cows cost a goodly sum; but they insure Mr. Whitsett a solid foundation for his future herd.

Both are heavy producers; and during the two years have dropped four calves, thus enlarging the herd materially, although the heifers are not yet fresh. The fact that they are both old does not interfere with their paying good interest on their investment; and in a few years Mr. Whitsett expects to be able to substitute his present herd of sixteen grade cows for heavy producing purebreds raised from these two cows and their progeny.

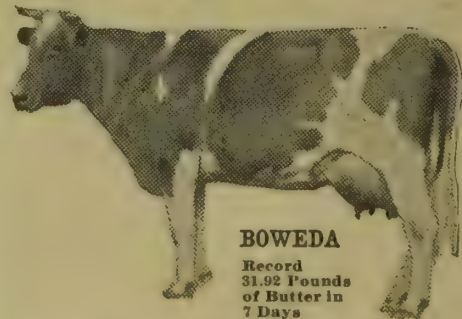
This Herd Offers Unequaled Possibilities for Records.

COMPLETE DISPERSAL

Stanford Holsteins

VINA, CAL.

June 5, 6
and 7



300

Registered
Purebreds
Tuberculin Tested

BOWEDA

Record
31.92 Pounds
of Butter in
7 Days

One of the Many Great Individuals

America's greatest sale of registered purebred Holsteins is to be held at Vina, California, June 5, 6 and 7, on the Stanford ranch.

By the infusion of the finest blood strains, this herd, founded by the late Governor Stanford in the early 80's, has been developed until it is without a peer. The dispersal of this herd is a great Holstein event.

A RARE OPPORTUNITY FOR ADVANCED BREEDERS, DAIRYMEN AND BEGINNERS.

In this grand herd to be auctioned at Vina are:

40 GRANDDAUGHTERS OF KING OF THE PONTIACS

40 GRANDDAUGHTERS OF COLANTHA JOHANNA LAD

20 GRANDDAUGHTERS OF SEGIS PONTIAC DE KOL BURKE

Just stop to consider what this blood means. King of the Pontiacs and Colantha Johanna Lad are the two outstanding proven sires of the day, and they are doing more than any other sires in the second and the third generations. Segis Pontiac De Kol Burke is one of the best bred bulls in the world and was senior and grand champion at the California State Fair in 1916.

WHY GO EAST FOR AN UNCERTAINTY WHEN SUCH GREAT STOCK CAN BE HAD FROM THIS PROVEN HERD THAT HAS NOT BEEN DEPLETED BY SALES?

IN THIS HERD ARE 40 A. R. O. COWS AND MANY OTHERS THAT WILL DO AS WELL OR BETTER. THE INDIVIDUALS ARE ACCLIMATED AND HAVE THE GREAT GROWTH POSSIBLE ONLY ON THE PACIFIC COAST.

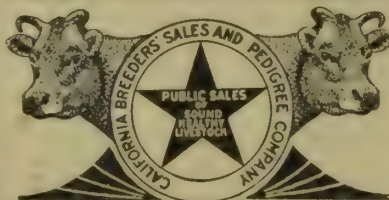
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An unprecedented opportunity to buy Register of Merit Jerseys will be afforded when we sell at public auction, absolutely without reserve or limit,

WILLOWWOOD HERD

60—REGISTERED JERSEYS—60

Owned by C. G. McFARLAND,

Tulare, California,

Thursday, May 17, 1917.

The sale will include:

13 REGISTER OF MERIT COWS with records averaging 516 lbs. butter in one year, including several records made under mature age.

16 DAUGHTERS OF R. M. COWS, the average records of the dams being 502 lbs. 1 oz. butter in one year.

16 COWS AND HEIFERS in calf to a half brother to Rosaire's Olga Lad, 19 R. M. daughters averaging 526 lbs. 3 ozs. butter in one year.

4 HEIFERS AND COWS in calf to a bull whose dam has R. M. record of 502 lbs. 3 ozs. butter in one year.

BULLS

A HALF BROTHER TO ROSAIRE'S OLGA LAD, sire of 19 R. M. daughters averaging 526 lbs. 3 ozs. butter in one year. 8 GRAND YOUNG BULLS and the dams of the eight average 526 lbs. 1 oz. butter in one year, all in Register of Merit.

Everything over 6 months tuberculin tested.

Catalog now ready. Copy free on request.

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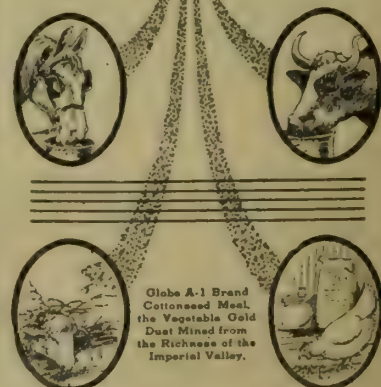
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Large or small lots. Any order executed.

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LIVESTOCK BROKERS

Two Hundred Sows as a Side Issue.

[Written for Pacific Rural Press.]

The numerous carloads of prime market hogs that are turned off at two to three week intervals from the Stanford University's ranch at Durham, Butte county, are mostly profit, according to Managing Foreman F. C. Franklin, because they are almost entirely a by-product of the 18,000-acre ranch on which they are grown.

It is the aim of Superintendent J. F. Van Loben Sells to keep about 200 brood sows on the ranch at all times, mated with purebred Poland-China boars. These are given the run of grain stubble, as well as of fields containing large oaks that furnish a plentiful supply of acorns, which cannot well be fed to the market hogs on account of their oily effect on the meat. More or less careful watch is given the sows, and at times of short feed supply grain is hauled out to them in the fields.

In the past the sows have farrowed in the open; but new hog quarters are being provided which will allow better care at farrowing time and a consequent increase in the number of pigs raised. No special dates are set for farrowing; but care is taken in breeding to insure against winter litters because of the difficulty in caring for pigs during cold and wet weather.

The natural conditions on the

ranch provide for a continuous supply of good feed, green feed being available soon after the winter rains commence in ordinary years and lasting till barley stubble comes on in the early fall. This in turn supplies fattening pasture till the rice is harvested, when another supply of stubble is available, this rice stubble carrying the hogs through till the green feed begins to grow again in the spring.

Except for dipping, which is done at regular intervals in a concrete dipping tank, where Creso dip and crude oil are used, the hogs receive very little hand labor till they are ready for the finishing pens. Usually they are about 12 months old at this time. Having had a good supply of grain most of their life, they are in prime condition for fattening.

During the past fall and winter the finishing ration has been crushed rice, tankage, and alfalfa hay. The rice is cooked in large iron kettles and fed in slop form in a dry corral. Five pounds of tankage is mixed with each 100 pounds of dry rice; and alfalfa hay is fed in racks. On this ration several carloads have gained an average of two pounds per hog per day for three weeks the past winter and have been good enough to top the market several times at a weight of about 200 pounds.

GUARDING CALVES AGAINST TUBERCULOSIS.

[Written for Pacific Rural Press.]

Regardless of the fact that they have their herds tested for tuberculosis at regular intervals, many dairymen and breeders suffer slight losses occasionally from the disease; and to overcome this the Bridgeford Co., at Knightsen, Contra Costa county, sterilize every bit of milk before feeding it to their registered Holstein calves.

Steam is used for this purpose, the milk being placed in a large galvanized iron tank after the other work is done in the morning. A steam hose is turned into the milk, heating it to a temperature of 160 to 170 degrees. After thorough heating, it is run out of the tank over a brine cooled milk cooler, the temperature being reduced to about 35 degrees. It is then set in the cooling room and held till feed time, when it is again warmed to a blood heat.

By this practice all of the calves' milk is known to be free of tubercular germs, despite the possibility that one or more of the cows may have contracted the disease since the last testing.

PASTEURIZATION LAW.

To the Editor: Please tell us the law on pasteurizing milk. Will it pay farmers who have only a cow or two to invest in a pasteurizing plant if they are selling butter to neighbors? In selling only butter, can cream alone be pasteurized? Must one pasteurize if cows are tested?—A. E. S., Lockwood.

Under the present law no one must pasteurize if they do not sell milk or cream for direct consumption. The law will probably be amended to include milk for butter. It applies to everyone regardless of number of cows or who are the consumers. Milk from cows which do not show tuberculosis when tested

free of charge by the State Veterinarian, Sacramento, need not be pasteurized for any purpose, and we would not invest in a pasteurizer unless the cow is diseased. If she reacts but looks healthy and the milk seems normal, pasteurize the cream only, if you do not sell milk, and raise calves on skim milk brought to boiling point per article in recent issue. A copy of the present law and proposed amendments can be obtained from Assembly Clerk, Sacramento.

MISTLETOE AS STOCK FEED.

To the Editor: Kindly answer in Pacific Rural Press whether or not ordinary mistletoe, such as forms in bunches in oak trees (principally), will poison horses, cattle, and goats if eaten by them. There seems to be much difference in opinion about the matter in Placer county, and the writer presumes that an answer will be interesting to many.—G. L., Auburn.

[Answer by Dr. H. M. Hall.]

Mistletoes have been known to stockmen and others for many hundreds of years and animals have browsed upon these plants to a greater or less extent for all this time and yet there has never been a demonstrated case of poisoning from them. Within the last few years some of our stockmen have been utilizing the mistletoe by cutting it and feeding to their animals, and there is no indication that it is harmful in any way. I think that if carefully investigated all so-called cases of poisoning by mistletoe will be found to be due to some other cause.

University of California, Berkeley.

See that bottles of serum and virus for hog vaccination have labels indicating the dates after which they should not be used. Fooling with bum serum is no joke.

Broken or sagging wire fences are more dangerous than well tightened wires.

Here are a few of the
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GET RID OF LICE

Let your hogs rid themselves of these blood sucking pests and keep free from cholera.

Do You Want Long Distance Backing?

We have a son of the California State Champion three-year-old for sale. Born October, 1915; Sired by PRINCE ALCATRA KORNDYKE, whose dam is TILLY ALCATRA.

The Dam of this young bull is not a fifty-lb. cow, but she has to her credit 21,208 lbs. milk and 860 lbs. butter in one year, which is the largest record ever made in California by a Junior three-year-old.

If you are in the market for a bull, it will pay you to visit our ranch and see what we have to offer—at prices that will surprise you.

J. S. GIBSON CO., Box 97, Williams, Cal.

"THE NAME GIBSON INSURES QUALITY."

Live Stock and Dairy Notes

Livestock breeders all over the State are invited to send on postal cards, notes regarding their sales, State and County Fair intentions, new stock, etc.

The Dairy.

Certificates of stock are being transferred among the shareholders of the Merced Creamery, following the increasing of capitalization some time ago from \$6,000 to \$30,000. The creamery is making steady gains in business.

Dummy cows are perhaps the most interesting part of the machinery of the new schools of farming which are springing up all over rural England for the purpose of teaching the rudiments of milking to young women volunteers for work on the land.

C. S. Rasmussen of Loloeta announces the sale of the following stock this year: Bull to John Roth, Solvang, Santa Barbara county; bull to R. Neilsen, Hollister, San Benito county; bull to A. Enos, Ferndale, Humboldt county; bull to J. M. Fretis, Elk River, Humboldt county; bull to Mantova & Company, Elk River, Humboldt county; bull to H. Thomsen, Loloeta, Humboldt county; heifer to J. H. McCloskey, Arcata, Humboldt county; bull to F. Fleckenstien, Arcata, Humboldt county.

When the California Holstein-Friesian Association meets at Chico June 6, some addresses will be given dealing with the great Stanford herd at Vina, the dispersal of which will be effected by a sale beginning June 5 and ending June 7. M. H. Tichenor, who has been commissioned by the trustees of Leland Stanford Jr. University to dispose of the 300 purebred Holsteins on the Stanford ranch, has received many requests for permission to make selections from the herd prior to the sale but these have been rejected so that everyone will have an equal chance.

The butter situation just now is a peculiar one. With stocks in cold storage April 1 as reported by the government, holdings of 265 firms were 6,208,763 pounds against 3,272,342 pounds held by 199 firms the same date last year. Yet in the face of this showing the price of butter here on the coast is 14 cents per pound higher. The same report shows that there was unloaded out of cold storage during March 9,470,701 pounds by the same firms, against 12,072,571 pounds the same month last year. In the face of this showing the central west and east has been drawing butter from California all spring. The result has been an increase in cold storage holdings in the north central houses and north Atlantic houses. There can be but one explanation of this hoarding of butter in the east, and that is an anticipation of an active export demand as soon as the United States and the allies force Germany to raise the blockade of the United Kingdom.

Beef Cattle.

In co-operation with the food supply committee of the State Council for Defense, the U. S. Forest Service is making plans to stock to their very fullest capacity the national forest ranges. If the stock can be secured and the money raised for necessary trails and water developments, an increase in the number on the ranges equivalent to 80,000 head of cattle might be made.

Swine and Swinemen.

B. F. Graham of Los Angeles is building up a pure bred ranch at Colton. He already has a large number of purebred Durocs and will soon add a Holstein dairy.

We have received from the American Berkshire Association a handsomely printed booklet which makes out a strong case for the Berkshire hog. Its belief is summed up in its motto, "One breed may rise—another fall, the Berkshire hog survives them all."

Shipments of mixed hogs from the Riverside district bring 13½ cents.

Recent sales made of Duroc-Jersey hogs by Peters, Lamson & Walker of Fontana are as follows: J. S. Pendergast of Redlands, boar by Defender and four sows; to A. H. Frank of Los Angeles, 15 sows and one boar; to Socialist Colony of Llano, 20 sows.

Seventy million dollars a year is wasted in the United States through hog cholera. This means that a billion pounds of hog meat is needlessly wasted every year by hog cholera. Dressed, these pigs would have yielded eight hundred million pounds of dressed pork and lard, or enough to give forty pounds of good food to every family in the United States.

R. H. Whitten of Los Angeles reports the following recent sales of pure bred Poland-Chinas from the Whitten ranch at Terra Bella: Allen Raymond, Winters, one boar and bred gilt; C. S. Booth, Delano, one boar and bred gilt; L. W. Boothe, Pasadena, two gilts; Mrs. L. H. Brady, Weaverville, pair of weaned pigs; Rev. R. W. Cleland, Eagle Rock, one boar; J. Harold Cloer, Porterville, one boar; Joe Cox, Gridley, boar and two gilts; E. J. Daetweiler, Porterville, one boar; W. T. Elliott, San Fernando, boar and three bred gilts; D. H. Forney, Fresno, bred gilt and two sow pigs; D. E. Goodwin, Pixley, one boar; Paul Hopkins, Willows, one boar; L. R. Lenfert, San Jose, one boar; Thos. H. Luney, Pixley, one boar and six bred gilts; R. M. McDarment, Porterville, three bred gilts; M. L. McDonnell, Cooperstown, one gilt; A. A. Quackenbush, Acampo, one boar; B. F. Ryder, Soquel, one boar and gilt; C. A. Rives, Burbank, two bred gilts; F. C. Splane, Calipatria, one boar; and S. M. Walker, Baldwin Park, one boar. Prices paid ranged from \$20 for weaned pigs to \$100 for bred gilts.

Sheep.

Three thousand sheep are feeding on the Spring Valley Water Company's lands near Crystal Springs lake, San Mateo county. They will soon be increased by 7,000 more. The company is making 13 cents a head a month for leasing land for this grazing purpose.

A sheep-shearing machine is being operated on a large band of sheep in Fresno county. The machine works on the principle of horse clippers and is run by a small engine. Two men are required to operate the machine and the fleece can be taken from upwards of 150 sheep in a day's run, it is said.

A single wagon load of wool brought into Livermore from John McGlinchey's sheep ranch in the Tesla district recently realized the record price of \$2,820.08. It was made up of 870 fleeces, which brought 40 cents a pound. It is said the same wool would now bring 50 cents.

A trainload of lambs was shipped last week from Brawley to the Denver market. Hitherto all the lambs raised in the Imperial valley have gone to the Los Angeles and San Francisco markets. Shipments of cattle, hogs and sheep and poultry continue active from the valley, most of them going to the Los Angeles and San Francisco markets.

One of the first to enter the mutton field in southern California is John E. Marble of Los Angeles. On his 120-acre ranch near Redlands is a flock of registered Romney and Dorset sheep, thought to be among the best in the state. The Romneys, four ewes and a ram, were imported from New Zealand. Three of these ewes now have lambs. The Romneys are an English breed noted for their hardiness and readiness with which they fatten. The horned Dorsets are also a mutton breed noted for their hardiness and early lambing and they make an excellent cross.

Horses and Mules.

John Lutz of Redding has imported a jack and eleven jennies from Missouri at a total cost of \$11,000. The jack alone cost him \$3,500.

Miller & Lux have bought the nine head of jacks recently shipped to Tulare from Tennessee, the consideration being \$14,000 for the nine. Part of this was in cash and the rest was taken in young mules from the Miller & Lux ranches.

Miscellaneous.

The cattle supply is the biggest in years on the ranges in Butte county.

The American Can Company announces that government restrictions will prevent supplying cans for certain commodities. It is predicted that canned pork and beans will soon disappear from the market.

Solano county farmers have declared war on coyotes, the enemy of the sheep man. Farmers offer a bounty of \$20 for each coyote killed. This, together with \$10 offered by the county, brings a coyote scalp up to \$30 apiece.

Crops of volunteer oats, barley and hay growing on the right of way of the Southern Pacific lines in California and Oregon have been offered to farmers free of charge today by the vice-president and general manager of the company. It was estimated that more than 12,000 acres are involved.

\$2,000 for Shorthorn Cow and Calf.

The Carruthers Farms sale of shorthorn cattle, held at Mayfield, May 2, was very successful. Bidding on cows and heifers was spirited and they averaged nearly \$500. Bulls were lower. One cow and calf sold to T. T. Miller of Los Angeles for \$2,000. Full report next week.

A New Shorthorn Herd.

T. T. Miller of Los Angeles, for some years a successful cattleman in the Imperial valley, has entered the blooded cattle field. He expects to build up one of the best and largest shorthorn herds in the state. His initial purchases—thirty-nine head, two bulls and thirty-seven females—have just arrived and are on his ranch in the San Fernando valley. They mostly represent the much-prized Cruickshank strain of breeding. The two bulls with this his first shipment are both fine individuals and show high breeding. Diamond Choice, 398,183, was bred by Bellows Bros., Maryville, Mo. A Cruickshank's heads his herd. Greendale Sultan, 491,351, was bred by the Greenfield Plantation, Miss., sire Lapedeza Sultan, 406,929. This bull contains both the Sultan and Cumberland blood and is a handsome youngster.

Among the cows are noted Maxwaller Gloster, 245,144, dam thirtieth Duchess of Gloster, bred by Carpenter and Ross, Mansfield, Ohio; Matchless E., sire Proud Monarch, 398,386, dam Lovelace E., 509,608, bred by Geo. Ferguson, Salem, Ontario; Linwood Augusta 2d, sire Baron's heir, 370,199, dam Augusta 116th, 121,346.

Mr. Miller will add other cattle to his herd until he has one hundred head, after which he expects to sell his produce. He will enter the show ring this fall and show at the leading California fairs. Andrew Simpson, formerly with Bellows Bros., and who prepared the grand champion bull at the last International show in Chicago, has been secured by Mr. Miller as his head herdsman.

LIVESTOCK DIRECTORY.

Rates in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

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Poland-Chinas.

MAKE BIG MONEY with our famous Whitten Ranch Big Type Poland-Chinas. Prolific breeders and profitable feeders. Grow rapidly, fatten quickly. Top the market at 225 lbs. in six months. Make greatest profit for feed consumed. Prices reasonable; satisfaction guaranteed. Send for free illustrated book, "Hogs for Profit," finest ever issued. Packed with valuable information; tells how to become successful. Ranch in Tulare County, but address owner, R. H. Whitten, 610A Security Building, Los Angeles.

LARGE NUMBER of excellent young boars ready for immediate service. Weanlings of either sex. Sired by Joker, first prize boar at Wisconsin State Fair, 1915. Sows and gilts, sired by Iowa Wonder and bred to Joker and Sunday's Chief. For prices and further information write Geo. A. Smith, Corcoran, Cal.

BOARS of serviceable age all sold. We have a few choice gilts bred to John Henry; an exceedingly choice boar. Also have a fine lot of Fall pigs, either sex. Bar N Ranch, E. A. Noyes & Son, Props., Sutter, Calif.

REGISTERED POLAND-CHINAS—Young boars ready for service. Weanling pigs, both sexes. Prices attractive for quick sales. J. H. Cook, Paradise, Cal.

CRAWSHAW'S CALIFORNIA CHINAS are prolific and profitable. Can fill your order for weanlings, either sex, for \$15.00 each. J. A. Crawshaw, Hanford, Cal.

LAKEVIEW STOCK FARM POLAND-CHINAS are money-makers. Satisfaction or money refunded. Geo. V. Beckman & Sons, Lodi, Cal.

POLAND-CHINAS—Big type combined with quality. Choice bred sows, gilts, boars. W. D. Trewhitt, Box 82A, Hanford, Cal.

REGISTERED POLAND-CHINA SWINE—Prize-winners. Finest stock in the State. \$20 up. M. Bassett, Hanford, Cal.

BIG-TYPE POLAND-CHINAS—Stock from the best herds of the Middle West. N. Hauke, Alton, Humboldt Co., Cal.

POLAND-CHINA HOGS—Large type. 200 lbs. in 6 months. I guarantee to please you. O. L. Linn, Linwood, Modesto, Cal.

REGISTERED POLAND-CHINAS and Duroc Jerseys. Cholera immune for life. T. H. Beckman, Lodi, Cal.

POLAND-CHINAS—Three extra fine boars, one large and two medium type. W. Bernstein, Hanford, Cal.

POLAND-CHINAS—Large type. The Browning Stock Farm. W. H. Browning, Woodland, Cal.

POLAND CHINAS—A few gilts left at \$15 each. Edward A. Hall, E. F. D. 1, Watsonville, Cal.

REGISTERED POLAND CHINAS—J. H. Hunsborough, Route A, Modesto, Cal.

BEAOKS RANCH herd of registered Poland-Chinas. W. J. Hanna, Gilroy.

Berkshires.

GRAPEWOLD FARM BERKSHIRES—World's Fair Grand Champion Grand Leader 2nd heads our herd, not only himself a champion, but the sire of champions. At the 1916 California State Fair his daughters won first in all of the senior sow classes, including the Grand Champion sow. At the 1916 Oregon State Fair a Grand Leader sow was Junior Champion. We are offering a number of choice boars of exceptional breeding and are also booking orders for Fall pigs. A. B. Humphrey, Escalon, San Joaquin Co., Cal.

CHOLEA IMMUNE BERKSHIRES—A dandy 750-lb. son of Star Value, \$75; sons of above ready for service, \$35; fine September gilts, \$30; November Ames Rival boars, \$25 to \$30; three months' pigs, \$15 each. All bargains. All registered. Order now and get choice. W. H. Waugh, Riverside, Cal.

REGISTERED BERKSHIRES—Progeny of Improver B. Young stock now ready for sale. Start your herd with breed and strain of established reputation for California conditions. Geo. G. Meckfessel, Berlin, Cal.

BERKSHIRES—I have one of the best herds on the Pacific Coast, including Grand Champion Sow, Reserve Grand Champion Boar under one year, Third Aged Boar, etc. Frank A. Brush, Santa Rosa, Cal.

EFFICIENCY FIRST BERKSHIRES—Ten firsts, all championships Nevada State Fair, 1916. Laurel Champion and Grand Leader breeding; any age. Joseph Wilson, Jr., Mason, Nevada.

IMMUNIZED NORMANDY BERKSHIRES—Good type. Breeding stock, any age, for sale at all times. Cast iron guarantee. Arlington Smith, Visalia, Cal.

BERKSHIRES—Bred sows and weanling pigs. Write for prices and pedigrees before buying. Butte City Ranch, Box P, Butte City, Glenn Co., Cal.

REGISTERED BERKSHIRES—Special offering. Three service boars at prices to move them quick. Write us. Imperial Stock Farm, Morgan Hill, Cal.

ROSE CREST BERKSHIRES—Rivals Champion Best blood. Open and bred gilts. Service boars. F. L. Hall, Perris, Cal.

CARRUTHERS FARMS BERKSHIRES—Cholera immune. Second annual sale August 2, 1917. Mayfield, Cal.

MODEL HERD BERKSHIRES—Bred for size and quality. Weanlings and gilts. J. L. Gish, Laws, Cal.

HOPLAND STOCK FARM—Registered Berkshires. Prices on application. Hopland, Cal.

REGISTERED BERKSHIRES—Geo. M. York, Modesto, Cal.

BERKSHIRES—Fair Oaks Ranch, Willits, Cal.

Duroc-Jerseys.

FIRST PRIZE HERD—Comprising the three most noted families of the breed: Golden Model, Crimson Wonder and Colonel. Offering line bred show winners and show prospects in each family as good as can be found in United States. Also weaned pigs. Seeing is believing. It will pay you to investigate this offer. Haden Smith, Woodland.

REGISTERED DUROC-JERSEYS—Service boars from prize-winning stock are money-makers. They grow faster. New England California Corporation, Ripon, Cal.

RANCHO RUBIUS DUROCS—All sold except a few July and September gilts. Extra good. Write for prices. Elmer Lamb, Ceres, Cal.

DUROC JERSEYS—Herd boars. E. N.'s Colonel and Tulare Boy. Sweepstakes winner at Fresno, 1915. Choice breeding stock. J. P. Walker, Visalia.

CROLEY'S BALANCED HOG FEED—The cheapest feed to fatten hogs. Write Geo. H. Croley Co., Inc., Live Stock Supplies, 631-637 Brannan St., San Francisco.

DUROC JERSEYS—Sow and boar pigs from Registered Stock. Low prices. Delta Farm and Live Stock Co., Colton, Cal.

REGISTERED DUROCS of guaranteed breeding. All ages. Weaned pigs, \$10. H. E. Boudier & Son, Napa.

HEAVY BONED DUROCS—A few service boars for sale. Ormondale Co., Route 1, Redwood City, Cal.

REGISTERED DUROCS—Crimson Wonder stock. Young stock, both sexes. L. D. Collins, Denair, Cal.

REGISTERED DUROC-JERSEY SWINE—Both sexes. Big-boned type. B. F. Kendall, Hardwick.

WINTON DUROC-JERSEY FARM, Winton, Cal.—High-class purebred hogs, both sexes, any age.

DUROCS—Defender, Clintie B and Golden Model strain. The big type. Allen Thompson, Tulare.

DOS HERMANOS REGISTERED DUROCS—Duveneck & Pickersgill, Ukiah, Cal.

DUROC-JERSEY REGISTERED HOGS—River Bend Farm, St. Helena, Cal.

REGISTERED DUROC-JERSEYS—S. S. Southworth, Napa.

BIG TYPE DUROCS—Quick maturing. Easy keeping. Frederick M. Johnson, Napa, Cal.

REGISTERED DUROCS—Either sex at all times. W. P. Harkey, Gridley, Cal.

THE DEVILBISS HERD of large type Durocs. J. M. DeVilbiss, Patterson, Cal.

Yorkshires.

LARGE YORKSHIRES—The ideal hog for the progressive farmer. Young stock for sale. A. L. Tubbs Co., Calistoga, Cal.

Chester Whites.

BILLIKEN HERD OF CHESTER WHITES—The type that is ready for the market in less than seven months. The easy feeders and big producers; sold out of bred gilts and service boars; October farrows to offer as follows: 8 boar pigs and 18 sow pigs; these are from 6 different litters and 3 different sires. Order now before these are all sold. Description and prices on application. C. B. Cunningham, Mills, Cal.

REGISTERED IMPROVED CHESTER WHITES—Grizzly Bear Ranch, East Auburn, Cal.

Essex.

LITTLE BLACK ESSEX—New crop nearly ripe. A few fine youngsters left. L. W. Millisap, Yolo, Cal.

Hampshires.

BELLA VISTA HAMPSHIRE SWINE—from prize-winning stock. J. W. Henderson, First National, Berkeley.

Tamworths.

BEAVER LODGE TAMWORTHES—Service boars. Write for prices and pedigrees. A. G. Lane, Amsterdam, Cal.

DAIRY CATTLE.

Holsteins.

FOR SALE—From 1 to 70 extra fine, straight well-marked, light-colored, registered Holstein heifers, from 8 to 20 months old. Those old enough are being bred to a first-prize son of Prince Geleche Walker, whose dam has a high yearly record. Some of these heifers are sired by bulls whose dams have from 35 to 37 pound records. They carry the very best blood of the breed and are good enough for any herd anywhere. Prices to fit any pocketbook. Geo. A. Smith, Corcoran, Cal.

GRANDSONS OF HENGERVELD DE KOL and out of A. R. O. cows for sale. Prices reasonable. Write for pedigrees. Many years of constructive breeding has made my herd one of the prominent ones of the San Joaquin Valley. R. F. Guerin, Visalia, Cal.

REGISTERED HOLSTEINS—Grandsons of King Segis and of world's record cow Cream-elle Vale. Will build up the production and value of your herd. Write or call and see them. F. H. Stenzel, San Lorenzo, Cal.

FOR SALE—Two registered cows, one with record 24.59. Sister to other one made 23-10 as a two-year-old. Both bred to a 30-lb. sire. Geo. Kounias, Modesto.

FOR SALE—Carload or less, full-blood, unregistered, tuberculin-tested cows and heifers. 3-year-old Holstein bull from registered sire and dam. All in fine condition. R. S. Burroughs, Cloverdale, Cal.

TULARE GUERNSEY AND HOLSTEIN Farm is offering young bulls of both breeds. Excellent breeding. Prices reasonable. W. J. Higdon, Tulare, Cal.

THE MCLOUD RIVER LUMBER CO., McCloud, Cal.—High-class thoroughbred Holstein bulls for sale. Write for prices and pedigrees.

J. H. HARLAN, WOODLAND, CAL.—Breeder of Registered Holsteins. Sold out at present. Watch for announcement on King Valdessa.

PACKWOOD FARM HOLSTEINS—Fine young bulls of serviceable age out of tested A. R. O. cows. W. F. Mitchell, Visalia.

TWO SERVICEABLE SONS of Colantha Sir Pontiac Aaggie for sale. Moorland Farm, K. W. Abbott, Milpitas, Cal.

THE HENDERSON CO.—Breeders and importers. Registered Holsteins. Sacramento Bank Bldg., Sacramento.

BREEDERS OF REGISTERED HOLSTEIN cattle and Berkshire pigs. Whittier State School, Whittier, Cal.

REGISTERED HOLSTEINS—A. W. Morris & Sons, Corp., Importers and Breeders, Woodland, Cal.

CREAMCUP HERD—Registered Holsteins; Pontiac bull calves. M. Holdridge, Modesto, Cal.

REGISTERED HOLSTEIN BULLS, \$50 to \$150. Glorietta Stock Farm, Woodland, Cal.

BREEDERS OF REGISTERED HOLSTEIN Cattle—McAlister & Sons, Chino, Cal.

GOTSHALL & MAGRUDER—Breeders of Registered Holstein-Friesians, Ripon, Cal.

CHOICE HOLSTEIN bulls for sale. No females. Millbrae Dairy, Millbrae, Cal.

REGISTERED HOLSTEIN BULLS for sale. C. L. Morse, Route 8, Modesto, Cal.

REGISTERED HOLSTEIN-FRIESIAN Cattle—J. M. Campbell, Escalon, Cal.

REGISTERED HOLSTEIN BULLS for sale. Sunnybrook Ranch, Willits, Cal.

REGISTERED HOLSTEIN CATTLE—E. E. Freeman, Route 8, Modesto, Cal.

BREEDER OF HOLSTEIN-FRIESIAN Cattle—Dr. Ben Stetson, Napa, Cal.

A. R. O. HERD OF HOLSTEINS—Alex. Whaley, Tulare, Calif.

FOR SALE—30 first-class milk cows. Address Occidental Dairy, Menlo Park.

Jerseys.

VENADERA HERD OF JERSEYS offers calves from Register of Merit Cows with official yearly records. Write for list of bulls. Guy H. Miller, Route 1, Modesto, Cal.

JERSEY BULLS AND BULL CALVES—Sons and grandsons of 2 and 3-lb. cows. None better. Cheap for quality. N. H. Locke, Lockeford, Cal.

CHOICE REGISTERED JERSEY FEMALES—Fresh and Springers. Breeding and individuality the very best. McLouth, Orland, Cal.

BREEDER OF REGISTERED JERSEY Cattle—Duroc Swine. Young stock for sale. W. J. Hackett, Ceres, Cal.

JERSEY BULLS—Sons of Gertie's Lad and Gertie's Son's Victor. A. A. Jenkins, Tulare, Cal.

YOUNG REGISTERED JERSEY BULL Calves at reasonable prices. O. J. Ames, Oakdale.

REGISTERED JERSEYS—Young bulls and bull calves. T. B. Purvine, Petaluma, Cal.

JERSEY BULLS from Register of Merit cows. C. D. Hayworth, Modesto, Cal.

Guernseys.

PACIFIC GUERNSEY HERD—Cattle selected from the best imported and Advanced Register Stock. Now offering choice bulls. C. S. Rasmussen, Loleta, Cal.

EDGEMOOR FARM GUERNSEYS—First in the show ring and in official records. Few animals of either sex for sale. Edgemoor Farm, Santee, Cal.

REGISTERED GUERNSEY BULL—No. 24342 from A. R. and imported stock. Write for prices and pedigree. A. G. Lane, Amsterdam, Cal.

REGISTERED GUERNSEY BULL—Two years. Best imported breeding, extra size and a show animal. H. S. Van Vlear, R. D. 2, Lodi, Cal.

TWO REGISTERED GUERNSEY BULLS—A. R. Breeding; of serviceable age. Also a few bull calves. E. R. Frey, Byron, Cal.

BELLA VISTA GUERNSEYS—Males from A. R. dams, \$100 up. J. W. Henderson, 1st National, Berkeley.

Ayrshires.

AYRSHIRES—Registered; all ages. E. B. McFarland, 412 Claus Spreckels Bldg., San Francisco.

AYRSHIRES—Registered—75 head. All ages. Young stock for sale. Le Baron Estate Co., Valley Ford, Cal.

FAIRVIEW AYRSHIRES AND DURHAMS—Bred for quality. Choice young stock. Geo. Fay, Sheridan, Nevada.

BEEF CATTLE.

SHORTHORNS—Herd headed by grandson Whitehall Sultan. Calves sired by \$10,000 Prince Imperial for sale. One or a carload for sale. Get our prices before buying. Butte City Ranch, Box P, Butte City, Glenn Co., Cal.

SCOTCH AND SCOTCH-TOPPED SHORTHORNS—We have the largest herd of straight Scotch cows in California. Foundation stock of both sexes for sale; also a choice lot of range bulls. Barco Ranch, Hollister, Cal.

D. O. LIVELY STOCK FARM, INC., 216 Hobart Bldg., San Francisco, breeders of Hereford cattle. A few choice heifers for sale. We buy and sell livestock on commission. Farm at Mayfield, Cal.

REGISTERED YEARLING SHORTHORN Bulls—Heavy-boned, thick-meated Scotch and Scotch-topped breeding. Ormondale Co., Route 1, Redwood City, Cal.

BREEDERS OF REGISTERED SHORTHORNS—Milk strain. Choice young stock for sale. John Lynch Ranch, Box 321, Petaluma.

REGISTERED AND UNREGISTERED—Shorthorn bulls for sale. Paicines Ranch Co., 320 Sharon Bldg., San Francisco.

INNISFAIR DAIRY SHORTHORNS—Registered young bulls for sale. Alexander & Kellogg, Suisun, Cal.

HOPLAND STOCK FARM—Registered Shorthorns. Prices on application. Hopland, Cal.

REGISTERED HEREFORDS—H. H. Gable, Diamond G Ranch, Esparto, Cal.

SIMON NEWMAN CO., Breeders of Registered Herefords, Newman, Cal.

GEORGE WATTERSON—Breeder registered Herefords. Bishop, Cal.

SHORTHORNS—Carruthers Farms, Mayfield, Cal.

SHORTHORNS—Fair Oaks Ranch, Willits, Cal.

SHEEP AND GOATS.

F. A. MECHAM ESTATE, Petaluma, Cal.—Breeders of Importers of Shropshire, Rambouillet and American Merinos, both sexes. Also Red Polled cattle. Take electric car at Petaluma or Santa Rosa for Live Oak Ranch.

SHROPSHIRE—Ewes and Ewe lambs for sale. International winner heads flock. Butte City Ranch, Box P, Butte City, Cal.

KAUPKE BROS., WOODLAND, CAL.—Breeders and Importers of Hampshire sheep.

DORSETS AND ROMNEYS—Dorset ram lambs for sale. John E. Marble, Los Angeles.

BISHOP BROS., SAN RAMON, CAL.—Breeders and importers Shropshires.

CHAS. KIMBLE—Breeder and Importer of Rambouillets. Hanford, Cal.

HORSES AND MULES.

HORSES—For sale, 3 and 4 year-old Percherons. Broke and matched, \$250 to \$300 per span. S. L. Skaggs, Madera, Cal.

REGISTERED SHIRES—Black Hawk Stock Farm, Importers and Breeders. Easton & Ward, Proprietors, Burlingame, Cal.

MISCELLANEOUS.

CROLEY'S BALANCED DAIRY FEED—the cheap milk producer; and Croley's Calf Meal—the best California calf raiser. Geo. H. Croley Co., Inc., 631-637 Brannan St., San Francisco.

FEED, FREE RANGE, State, Government land, any amount. Booklet free. Joseph Clark, Sacramento.

Are You Using World's Record Bulls

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Twin Holstein Bulls

The Greatest Combination Milk and Butter Breeding Known Today

No. 1 and 2 Twins. Colony Zarilda Newman and Colony Zarilda Cornucopia—Born March 26, 1915.

Whose sire, Aaggie Cornucopia Newman No. 80744, son of Margie Newman, and grandson of Aaggie Cornucopia Johanna Lad, Jr., No. 36974, who is the sire of Lutscke Vale Cornucopia. Milk one year 31,246.9. Their sire has two-year-olds to give over 100 lbs. of milk per day, three-year-olds to give 117.2 lbs. milk one day and butter 29.53 in seven days. His first eleven daughters to freshen average per week of butter nearly 19 lbs. and over 460 lbs. of milk in seven days. He is sure to be one of the leading bulls of the breed.

They have for dam the wonderful performer, Zarilda Clothilde 3rd De Kol, whose record as a Junior four-year-old has never been equalled for one, seven and thirty days. She now is being tested semi-official and in her performance so far bids fair to be the world's record milk cow. She has been twice over 123 lbs. milk in one day, twice over 800 lbs. milk in seven days, twice over 3300 lbs. milk in thirty days, once as a Junior four and now at six years old. Milk ninety days 9940 lbs., butter 338.62, and her owners claim she will give over 33,000 lbs. in twelve months, and over 1200 lbs. butter. Buy these bulls, as it may be your last chance to obtain such a wonderful combination of breeding. For further particulars write

LODGE VON HEIM

R. F. D. No. 1

BOX 15

KENT, WASHINGTON

Breed Mares to Sound Draft Stallions.

[By Wayne Dinsmore, Secretary Percheron Society of America.]

Maximum crop production requires plenty of horses, men, and efficient farm machinery. Powerful draft horses do more to compensate for labor shortage than any other factor. Gang plows of two 14-inch bottoms, with five powerful draft horses, will turn five to five and a half acres per day; will, on a 20-wheel disc harrow cutting 9 feet in width in the field, disc 14 to 18 acres per day; and on a 20-hole disc seed drill will seed 18 to 20 acres per day, and cover it in the same operation. Only heavy draft teams can make such efficiency possible. Horses weighing over 1600 pounds each in working condition are needed, and five of them to each farm teamster employed. Where such heavy draft horses are not available, smaller implements are used, and the daily turnover in work accomplished per man falls to approximately half that which is being done by men with heavy teams and plenty of them.

The United States does not need an increase in mere numbers of horses and mules. It does need an increase in well-proportioned powerful draft stock. There is no danger of an overproduction of draft horses within the next ten years, nor is there any danger of an overproduction of good thick farm chunks weighing 1300 to 1600 pounds. The latter can be, and are being, produced by breeding common light mares of mixed blood weighing 900 to 1400 pounds each, to sound, well-proportioned Percheron stallions. Every mare of this kind should be bred to the best draft stallion available, and every draft mare should be bred to the best stallion within reach.

The demand for heavy draft horses is already far in excess of the supply. Prices have increased \$50 to \$75 per head, and the difficulty of obtaining the very best draft horses has been so great that city buyers have been obliged to purchase horses that are only three years old this spring in order to fill the demands of their trade. The best informed men in the market respecting city trade are agreed that draft horses will never be entirely displaced in our large cities, and that they have already reached what is practically a solid basis for the future.

The demand for Percherons has shown steady improvement within the past twelve months. Importations are practically nil, and the steady increase in demand for good draft horses gives promise of a most excellent future for the shrewd farmer who realizes the advantage of using Percheron mares in his farm work.

Exports of horses to Europe for war purposes from September 1, 1914, to March 1, 1917, totaled 853,116 head, valued at \$182,994,406; and 289,062 mules, valued at \$58,051,914. British army officers have given unstinting commendation to the grade Percherons which have been sent from this country to Europe for artillery purposes. The effectiveness of the Percheron has been so great that studs of purebred Percherons have been established in Great Britain in consequence.

The vast majority of the mares in the United States will be bred or left unbred within the next ninety days. All good mares should be bred to the best available draft stallions.

Barley to Hogs Every Day

[Written for Pacific Rural Press.]

If a pig is fed some barley during his entire life, J. L. Mendenhall of Colusa County believes it is possible to turn him off at 200 pounds on 400 pounds of ground barley and all the alfalfa he will eat, in 400 days. Mr. Mendenhall has been a large grower of hogs for many years in connection with his extensive grain farming, using his alfalfa land to grow out the pigs and finishing them on stubble in the fall.

In hand-feeding grain, to brood sows, pigs, and shoats, he emphasizes the value of fine grinding before use, setting his own grinder so that it will make a very fine meal. Before feeding, all barley is soaked in water 48 hours so that it is thoroughly softened and easily digested. After

a pig weighs 50 to 60 pounds, he is given a pound more or less of this soaked ground barley per day and run on alfalfa pasture. According to Mr. Mendenhall's experience, that is the most economical way of feeding market hogs under his conditions.

Pigs farrowed in January and fed this way till after harvest and then turned onto the stubble are always turned off at 12 to 14 months old weighing 175 to 225 pounds and commanding the best market price because of their prime condition.

Hog shade will soon be needed. Fix up shelters on posts or corners of the fences, covering with brush or weeds. Don't waste feed by giving it to hogs that suffer unnecessarily with the heat.

PACKERS TO PAY HIGHER PRICE FOR BETTER HOGS.

To the Editor: The committee appointed by the California Swine Breeders' Association to meet the Los Angeles packers and discuss ways and means of more satisfactory arrangements for selling hogs, have reported as follows:

"In order to discriminate between the market value of good hogs and poor hogs, it was agreed that 77 per cent should be fixed as a killing per cent basis, and all hogs dressing above 77 per cent shall be paid for with a premium of 10 cents per hundred weight above the market price for every point they dress out above the base per cent. Further, there shall be no cut in market price for hogs dressing below 77 per cent."

The Hauser Packing Company, the Wilson Packing Company and the Cudahy Packing Company of Los Angeles, and the Western Meat Company of San Francisco, have agreed to the above.

CALIFORNIA SWINE BREEDERS' ASSOCIATION,
J. I. Thompson, Secretary.

ORMONDALE SHORTHORNS



Golden Goods, Jr.,
Herd Sire.

Our 1916-17 offering of yearling bulls is small but select. They are all heavy boned, solid red in color and of Scotch and Scotch-topped breeding. Suited for either the range grower or breeder.

DUROCS.

Our Durocs are of the big type, with big bone, well-arched backs and carrying good hams.

We have a few head of service boars, now ready for service, solid red in color and out of prize-winning animals.

Every Animal Positively Guaranteed

Whether you buy or not, visit our ranch, 7 miles from Palo Alto on Woodside Road. We welcome inspection. Prices and pedigrees on application.

Shorthorn Cattle
Duroc-Jersey Swine

ORMONDALE CO.

R. D. No. 1
Redwood City,
California.

Hillcrest Stock Farm

Shorthorn Cattle, Shropshire and Merino Sheep



King Lancaster, sired by King Edward,
grand champion bull State Fairs,
1909-10-11.

Shorthorn Bulls for Sale, sired by such noted bulls as King Lancaster, Knights Perfection, Greenwood Knight and Greenwood King. Nearly all offsprings of the famous King Edward.

These Bulls are conceded to be the best offering ever made from the Hillcrest Stock Farm.

For Particulars Apply

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Proprietor

Davis, California



Save the Hogs

HOG CHOLERA CONTROLLED, providing you vaccinate your hogs with I. S. V. Co.'s 20 C. C. Standard dose Serum. Your hogs will be immune against cholera. Ten C. C. Serum and 1 C. C. of Virus will immunize your 3 to 10 day old pigs their natural life if you use our high potent Serum and Virus, made under U. S. Government License No. 25. Learn how to vaccinate your own hogs and then you will know it is done right. Write for free booklet on Hog Cholera. Agents wanted in every county.

Inter-State Vaccine Co.

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BASSETT'S POLAND CHINAS



GRAND CHAMPION SOW,
P. P. I. E., 1915; Sacramento, 1916.

For many years at widely separated show rings, under many different judges of varying type ideals, my Poland Chinas have been consistent prize-winners. My herd is large and I cull closely. The animals sent out as breeders are the very tops of a large number. I KNOW that my kind of Poland China is a profitable farmer's hog, for I send carloads of them to the packer every year—uniform in size, high in quality, quickly and economically matured and finished.

Young stock, \$30 Up.

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REGISTERED BERK SHIRES

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RANGE BULLS, BOARS AND GILTS

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BULLS = Shorthorns = HEIFERS

REGISTERED AND TUBERCULIN TESTED.

Animals of either sex ready to deliver in car lots or singly.

H. L. & E. H. MURPHY,

Perkins, Cal

VETERINARY QUERIES

[Answered by Dr. H. B. Wintringham, Petaluma, Cal.]

[Subscribers wishing an immediate reply should send money order for \$1.00. No charge for questions answered through this department. Name and address of subscriber must accompany each query.]

Young Alfalfa Bloats Cows.

To the Editor: I have been pasturing my dairy cattle on alfalfa stubble all winter except when very wet. Usually I fed hay in the morning and did not turn them out until late forenoon. Two weeks ago I noticed signs of bloat for the first time. Am now out of hay and have kept cattle in yard until dew was off, but they still bloat some. Last week a heifer died within 20 minutes of the time bloat was noticeable. Two cows bloated but were soon relieved with soda and gags. Then one bloated and this treatment didn't work, so I stuck her with a trocar. The gas escaped slowly through the sheath, but a green liquid and semi-liquid kept clogging the outlet. The cow seems to be getting better. Please advise preventive measures, relief measures, and how to use the trocar.—C. J. B., Orland.

The young vigorous growth is causing the bloat. Give four ounces each turpentine and aromatic spirits ammonia in one quart of milk at one dose. If not relieved immediately use the trocar half way between the point of the hip and the last rib and an equal distance below the side point of the backbone.

Phosphorus for Milk Fever.

To the Editor: One of my neighbors came near losing a cow with milk fever. The cow was entirely paralyzed and expected to die at any moment. An old English doctor opened her mouth and injected some medicine in her tongue. In a short time the cow was up and is perfectly well and sound today. The doctor said he used phosphorus. Why is not this remedy mentioned in farm papers?—E. S., East Sound, Wash.

This animal would have been up by herself without treatment. Phosphorus would have no action which would relieve this condition.

Horse Has Scabby Itch.

To the Editor: A horse seems to have a humor of the skin. A scab forms and the hair drops off. Seems to itch. Feed hay and two gallons of barley daily. Have been bathing him with sheep dip.—O. D., Cloverdale.

Wash off the scabs with warm soap and water and dry. Then paint with Tincture of Iodine daily.

DR. T. B. SPALDING'S

Big Type, Prolific, Pedigreed Poland-Chinas.

Biggest and best blood lines of the breed. A Wonder, Big Bone, Smooth Price, Big Ben and Jumbo Fashion strains. Only tops tolerated on the ranch or offered for sale. Fancy gilts and boars. Owing to serious illness in family, must close out. For sale at prices that will soon move them. Route 4, Turlock, Cal.

H. B. THORNBERRY

Dealer in

JACKS, JENNETS

and

Gaited Kentucky Saddle Horses

Largest Importer in the United States.

P. O. Box 679, Stockton, Cal.



KIMBLE RAMBOUILLETS.

These sheep are purebred, large and smooth, with heavy fleece of fine, long, staple, white wool. Yearling rams and ewes. Individuals or carload lots. Prices reasonable. Correspondence solicited.

CHAS. A. KIMBLE, HANFORD, CAL. Breeder and Importer.

Mare Does Not Shed Hair.

To the Editor: A mare that I have had out on pasture all winter does not shed her hair. The skin is tight on her bones. A veterinary to whom I took her said she did not get enough to eat. He prescribed 30 powders, which helped her very much. Can you give me a recipe for something to make her shed her hair?—F. R. F., Stockton.

Have the following mixture put up: Fluid extract Nux vomica, 1 oz; fluid extract Gentian root, 1oz; fluid extract cascara sagrada, 1 oz; Fowler's solution, enough to make 12 ozs. Give one tablespoonful of this three times a day.

Bony Growth on Knee Cap.

To the Editor: A mare is lame in the foreleg due to bony growth on the knee cap. Liniment and blisters have no effect. The county veterinarian said he couldn't do anything for it—that it would wear away. It has been four months and she is no better. Has been on pasture most of the winter.—W. H. M., Woodland.

If a bony growth is interfering with the action of the joint it will have to be removed if possible or the animal will always remain worthless.

Hard to Pass Water.

To the Editor: One of my horses often tries to pass water; but with great difficulty passes very little.—J. M. S., Blocksburg.

Give one ounce potassium citrate at a dose and repeat as needed.

HOG CORRALS IN ALFALFA FIELD.

On the Joseph Wilson ranch in Lyon county, Nevada, is a four-acre field of alfalfa planted last spring.

Mr. Wilson intends dividing the patch into eight equal pens for his purebred Berkshire sows and litter.

Each pen will have a colony house and self-feeder, with the alfalfa furnishing plenty of green feed.

There happens to be a good supply of gravel on the piece, which will do much toward keeping the feet worn off.

Among the Wilson herd are three excellent sows, all prize winners at the Nevada State Fair, 1916.

Mr. Wilson expects much from his boar, Robinhood Laurel 10th, which will be shown at the coming California and Nevada State Fairs.

Select a dairy cow with a large feed capacity. This is indicated by an enormous paunch, long ribs well rounded and long space between the last rib and the hip bone.

A poor milker may cause as much loss to the owner of a dairy as a poor cow.

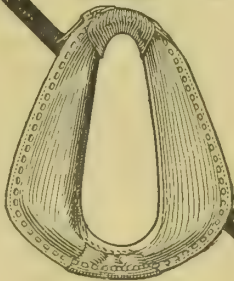
A GALLED HORSE MAKES NO MONEY

But a healthy horse, with shoulders free from galls, bruises or sores, does better work, makes money for you—besides you feel better about it, as well as the horse.

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horse collars are dependable; last and wear as you have a right to expect they would; and are the most economical to buy in the long run.

When a dealer offers you a *Hercules Harness*, Horse Collar or Saddle, he is offering you **THE BEST THERE IS.**



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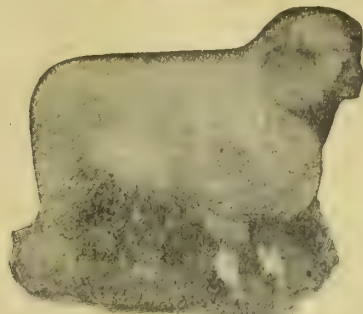
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THREE BLOCKS FROM THE FERRY

SAN RAMON SHROPSHIRE

WINNINGS P. P. I. E., 1915.

Aged Ram, First and Second. Yearling Ram, First. Ram Lamb, First, Second, and Third. Champion Ram. Yearling Ewe, Second. Ewe Lamb, Second and Third. Get of Sire, First. Pen of three Lambs, bred by Exhibitor, First and Fourth. Pen of four Rams, bred by Exhibitor, First and Fourth. Flock, any age, Second. Flock, any age, bred by Exhibitor, Second. Flock, one year old, First. Flock, one year old, bred by Exhibitor, First. Flock under one year, First. Flock under one year, bred by Exhibitor, First. Produce of Ewe, First, Second and Third. Premier Championship for Breeder. Premier Championship for Exhibitor. A total including American Shropshire Specials, of 15 Firsts, 9 Seconds, and 6 Championships. Purebred Registered Rams and Ewes. Individuals or Carload Lots. BISHOP BROS., Agents. SAN RAMON. Contra Costa County, California.



Champion Ram P. P. I. E.

Hauser's Digester Tankage

GIVES GREATEST VALUE FOR LEAST MONEY.

IT MAKES THEM FAT.

Hauser Packing Co.

Los Angeles

WORLD'S CHAMPION POLAND CHINA HERD



SUPERBA 220623.

Grand Champion P. P. I. E.
Over 100 of his sons and daughters.
All ages. Priced to sell.

ROUGH'S GREENFIELDS

Arlington Station, Riverside, Cal.



Grow Them Like This

with long, deep, meaty hams and well-sprung ribs. He stands shipping well and tops the market when he arrives. He makes the choicest bacon and dresses out with the least waste. For quality and profit, breed

Berkshires

They farrow large litters of lively, active pigs that are seldom crushed by the mother. These youngsters soon rustle for themselves, making rapid gains on inexpensive feeds. Berkshires mature early and fatten easily at any age. Hardy and vigorous, they thrive in all climates. Send for our freebook "Berkshire Hogs" and learn facts about this money making breed.

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TAM WORTHS

(The Bacon Hog)

Largest Herd in the State

DUROC-JERSEYS

Mature Stock and Weanlings of both sexes. Sure to please.

SWINELAND FARM.

W. O. Pearson, Prop. Woodland, Cal.

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in
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Blake, Moffitt & Towne, Los Angeles

Blake, McFall Co., Portland, Ore.

Cheap Shelter for November Lambs.

[Written for Pacific Rural Press.]

W. G. Records of Inyo county has fenced off a 100-foot square adjoining his sheep pasture with 6-foot 2-inch mesh wire fencing. Another fence of similar wire will encircle the lot, the second being placed on the inside of the posts, thus having a double fence about five inches apart. This five-inch space is to be packed with straw and will form the outside wall of the shelter or shed.

The 8-foot "straw and dirt" roof will slope inward to within three feet of the ground, the frame and

rafters being made of rough cottonwood boughs. This shelter, being closed on all sides, will afford excellent protection for the November lamb crop. *

Mr. Records' main idea for having the lambs come in the fall is that he is able to market them in the spring, when they are usually high; and he secures the service of his neighbors' bucks free of charge, since they do not wish to use them at that time. Mr. Records had lambs, born last November, that would dress out 30 pounds in March.

Big Tamworth Herd.

[Written for Pacific Rural Press.]

About the largest herd of Tamworth hogs in the State is that of H. E. Betts of Holtville, who keeps about 100 sows all the time. The herd header is Swineland King 2nd sired by Nimrod 3rd and out of Hazel M. 2nd. The 25 sows which

had farrowed since February averaged over 8 pigs.

Mr. Betts uses no wallows for his hogs. The drinking water is given in self-filling cups just large enough for each hog to get his head into. Eight of these cups are fastened around the base of a barrel set on a platform which raises the drinking cups just hog high.

Feeding troughs are of the station type.

Farrowing houses are portable, 7x9 feet. All 15 of them are in a row and all are covered again by a fly roof thatched with arrow weeds.

STATISTICS OF TUBERCULIN TESTS.

Following is the report of State Veterinarian Keane of tuberculin tests made by him under the new state dairy law:

TOTALS FOR MARCH.

Number of herds tested	579
Number of herds containing 10 animals and less tested	444
Number of herds containing 10 animals and less free	341
Number of herds containing more than 10 animals tested	134
Number of herds containing more than 10 animals free	18
Number of animals tested	5,576
Number of reactors	1,114
Number of suspicious	136

TOTALS TO APRIL 1, 1917.

Number of herds tested	1,962
Number of herds containing 10 animals and less tested	1,479
Number of herds containing 10 animals and less free	1,181
Number of herds containing more than 10 animals tested	482
Number of herds containing more than 10 animals free	91
Number of animals tested	21,083
Number of reactors	3,817
Number of suspicious	428

UDDER TROUBLES.

Sometimes a cow is difficult to milk because the opening in the teat seems too small. Get a milk tube, sterilize it and press into the opening so as to draw off the milk and stretch the orifice until it is large enough for a full flow. Sometimes a cow has a hard lump in the udder. Rub it every third day with a mixture of two drams of iodine in two ounces of lard until the lump disappears. Often when a cow is hard to milk or holds it up she will come all right from feeding a little bran or grain, as this diverts her attention from the nervous action which is the source of the trouble. When the calf comes, care in milking will prevent the milk fever. In case of attack pump air into the udder with a bicycle pump.

As a rule a heifer cannot be milked as rapidly as an older cow, but she should be milked just as thoroughly.



100 THE QUALITY SALE 100 Registered Holsteins

The sale at which you can strengthen the best herd in the State or secure the foundation for a high class herd. An especially choice selection of heifers will be offered in this sale, including

A Daughter of Spring Farm Pontiac Cornucopia out of a 31-pound dam that is a candidate for a big record.

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A Daughter of King Segis Pontiac, whose sons have commanded the highest prices in the United States and Canada.

A. B. O. Cows and Heifers bred to King Pontiac Segis Korndyke, a 30-pound son of King Segis De Kol Korndyke.

Splendid Heifers bred to King Segis Alcartra Abbekerk, a 30-pound son of the \$50,000 sire King Segis Pontiac Alcartra.

Great Heifers bred to Supreme Glista Pietje, son of Woodcrest Pietje Ormsby and a 32-lb. daughter of Prince Yoma Snofford 6th, who has a greater percentage of 30-pound daughters than any other bull living or dead.

BULLS

Young sires of real herd heading quality will be sold in this sale, out of dams with great semi-official records and 7-day records up to over 30 pounds butter.

WRITE FOR CATALOG NOW

Sale under management of

California Breeders Sales and Pedigree Company

C. L. HUGHES, Sales Manager, Sacramento, Cal.

AUCTIONEER—COL. BEN A. RHOADES

TIME AND PLACE:

Thurs., May 31, 1917

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SACRAMENTO, CAL.



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straw, cornstalks, bean straw,
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Blower built independent of cutter. Let you fan spin fast
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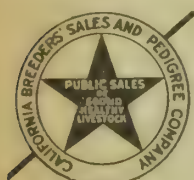
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Raising Poultry for Profit

DUCK FARMING.

[Written for Pacific Rural Press by Susan Swaysgood, Pomona.]

When properly fed, ducks make the quickest returns of anything in the line of feathers. While they eat more than chickens, in the growing stages, they will get along very nicely on coarse feed, provided they are supplied with animal food. Quick growth can never be gotten in ducks without the latter. And if it is possible to plant a patch of rape or other succulent green feed near where the ducks are to run, half the labor and feed bill can be cut off.

Duck raising is adapted more to the general farm than to the small place where room is precious.

The income from ducks may be divided into three parts, just as with other poultry, eggs, meat, and fancy.

If a person goes in for raising green ducks for market, room is not so much a matter of concern as is cheap litter and animal food. To get his ducks up to size and weight, they must be kept warm and have an abundance of animal food all the time during their short lives.

If the ducks are to be raised for eggs, it is best to be particular about getting a variety that will lay white eggs and also plenty of them. For this purpose a good pasture and an easy access to water is a great saving in time and money. If a pasture is not to be had, the next best method of keeping ducks for eggs is by making double yards. These need not be very high, three feet high is more than ample, the first yard need not be very large either, if the house is permanent. A better plan is to make the yards equal in size and have a portable house that can be moved from one yard to the other. While the green feed in one yard is being consumed, that in the other yard is growing. Of course, it is necessary to plant some quick growing green such as rape, oats, barley, or wheat.

I find that more people err toward underfeeding. One article of food, no matter how good it is, does not make a balanced ration for poultry or ducks.

Laying ducks need at least one feed a day of mash in which they receive a day's ration of animal food, beef-scrap, fish-meal, etc. At night they should receive a little dry grain, oats, barley, wheat, or cracked corn. In addition to the two meals a day, laying ducks, with a green run, should be supplied with sand, fine oyster shell, and plenty of water at feeding time in dishes in which they can wash up to the eyes well. This prevents them having sore eyes from the feed sticking on the feathers.

April and May are the best months to hatch for laying ducks, so that anyone who wants to try, and thinks it is too late, has yet time to get in the race.

HATCHING DUCK EGGS.

Of course there is not anything quite so good as a good motherly hen, with back-bone enough to set a whole month, but these hens are not always to be had; and when they are not, the incubator will do next best. The only difference be-

tween hatching duck eggs and hen eggs is that the heat should be kept a little lower for at least two weeks, after which it can be 103, and more moisture given. A pan or two of wet sand the last few days gives better results in rotting the shell than when the water is applied direct to the eggs. It is not necessary to drown the ducklings in order to apply moisture, but just keep the air in the incubator moist.

After every hatch, the incubator must be thoroughly sprayed and cleaned, as ducks cause a bad odor in the incubator and this would give the next batch some trouble.

As to varieties, the Indian Runners, when well bred, have been called the Leghorns of the duck family. They mature early, so can be hatched just a little later than the Pekin, which requires a longer season to reach full maturity. The Buff Orpington is a large duck and lays a white egg, and the claim for it is that it lays as early as the Runner.

SOME TURKEY DISEASES.

[Written for Pacific Rural Press by Susan Swaysgood, Pomona.]

Young turks in a natural state do not have many troubles, but as soon as we begin to feed and pamper them they have just as many troubles as chicks, and the troubles generally end in a much greater percentage of loss.

Err on the light side instead of the heavy side of feeding. I have seen strong healthy young breeders, just off the range, shut up in a house and fed corn. In two weeks they were dead. These were one year old too, and had been raised right. Shutting in close quarters is always a risk, but the shutting up is made worse by wrong feeding.

Owing to the habits of young turks, they are very apt to get colds in the head and eyes, so that catarrhal sore eyes and canker are about the first things young turks are troubled with. The eyes should be bathed in a rather strong solution of peroxide of hydrogen, and the canker, if it occurs in the mouth, head, or eyes, may be treated easily. Take a flat stick or some blunt instrument and scrape the cheesy lumps off and apply a little alum, a little powdered blue-stone or a weak solution of carbolic acid and water. If the latter is used, take care to not allow the water to run over well and healthy skin.

The next thing which gets turkeys, or perhaps one should put it first, is lice. They seem to attack

RECIPE FOR TOE-PICKING.

[Written for Pacific Rural Press by Susan Swaysgood, Pomona.]

One of our subscribers sends in a recipe for toe-picking. This is to feed a milk mash that costs \$3.90 cents a sack. This must be gotten from Portland, Ore., so I don't think many will want to try it. Besides there is no need of it. A bare teaspoonful of salt in a quart of water will stop toe-picking. The only thing to remember is to not repeat the dose of salt and water but just once.

Too much salt and water causes indigestion. It is not a thing to be

given in repeated doses, nor is it needed, for one dose is enough. If the chicks begin again in, say a week after, why they can be given another dose and by that time they will forget all about it.

POULTRY QUESTIONS.

[Answered by Susan Swaysgood.]

TOO EARLY FEATHERING.

Last year I lost 75 per cent of Black Minorca chicks by feathering out too young. After two weeks old, they would droop their wings and die. I feed chick feed and milk with some green grass.—O. C. H., Lodi.

Dry chick feed and milk will never cause chicks to feather out too soon. Probably you keep them too warm. Lower the brooder heat and harden the chicks. Your feed is fine for bone and muscle.

HENS DO NOT LAY.

I have 100 White Leghorn hens a year old and others two years old. They lay only two or three eggs a day. Feed a waterbucketful of wheat per day and have plenty of gravel, green feed, and sour milk.—B. H., Dos Palos.

Feed a little commercial mash with beef scrap or some animal food in it. They need more than wheat to bring eggs. You should be getting 75 eggs per day.

Poultry Breeders' Directory

Rates in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

BABY CHICKS—For May and June. We will have them—Barred Rocks, R. I. Reds, Black Minorcas, White and Brown Leghorns. They cost from 7 to 12 cents each, depending on breed and number. The combination is good quality and low price, because our plant is efficient, our hatching capacity is large, so we can operate on a smaller margin of profit and give good value for the money. Try us with a trial order. Our breeds are pure-bred and of the true utility class, bred for layers and hardiness. Don't quit because grain is high—Eggs will be higher, and the laying hen is a good investment. Write for our circular and price list. Roofden Poultry Ranch and Hatchery, Campbell, Cal.

BARRED PLYMOUTH ROCKS—COCKERELS—Cockerels—Cockerels—Yes, we have them; also Hens and Pullets—all bred from our Champion Winners at California's leading shows. Also hatching eggs. If it's Barred Rocks you want, get in touch with me right away. Have bred them exclusively for nine years. Send for Catalog. Chas. H. Voden, Box 396, Los Gatos, Calif.

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MAY AND JUNE CHICKS—Will lay this fall if from our early maturing strain. Our Leghorns and Reds begin laying at 4½ to 5 months. Leghorns, \$10 per hundred; Reds, \$12.50 per hundred. Brooke Farm (Rancho del Paso), 807 J St., Sacramento, Cal.

PRIZE WINNERS—Houdans, Barred Rocks, buff, black, white Orpingtons; black Langshans; R. I. Reds; Silver Laced Wyandottes. Settings, chicks, cockerels. Trio Indian Runner Ducks—laying—\$5. C. L. McGee, 1635 Julia St., Berkeley.

BABY CHICKS—HATCHING EGGS—White, Buff, Brown Leghorns, R. I. Reds, Barred Rocks. Sturdy chicks from well-mated fowls. Prompt, efficient service. Write for circular. Campbell Poultry Ranch, Campbell, Cal.

HOGANIZED AND TESTED—320-egg type White Orpingtons and Buttercups. Hatching eggs, chicks and cockerels for sale. Reasonable prices. For particulars, write M. Woodhams, San Mateo, Cal.

S. C. RHODE ISLAND REDS—220-egg record in 12 months. Hatching eggs, Chicks, Stock. Also Rose Comb Reds. Mating list ready. Wm. Larm, 3915 39th Ave., Fruitvale, Cal.

WHITE WYANDOTTES—Persistent layers and Blue Ribbon winners. Eggs now \$1.50 and \$3.00. Chix 20c. E. W. Stawetski, Route 2, San Jose, Cal.

BABY CHICKS from S. C. White Leghorns from trapped hens with records from 192 to 297 eggs. Also S. C. Black Minorca chicks and eggs. J. W. Benoit, Route C, Modesto, Cal.

HICKS JUBILEE HATCHERY, Petaluma, Cal.—White Leghorn and Black Minorca chicks and hatching eggs. Circular "How to Raise and Feed Chicks" free.

EASTMAN'S BRED-TO-LAY Barred Plymouth Rocks—chicks, eggs, cockerels. We hoganize and trapnest. Fairmead Poultry Farm, Fairmead, California. Box P.

MODEL POULTRY FARM—White Leghorn specialists. Our thirteenth year. Baby Chix and Hatching Eggs for sale. W. C. Smith, Prop., Corning, Cal.

INCUBATORS—For Essex Model Incubators at factory prices, write Geo. H. Croley Co., Inc., Poultry Supplies, 631-637 Brannan St., San Francisco.

ANCONAS—First-class stock. Reduced price, \$2.50 per fifteen. Chicks, 25c each. Few choice birds for sale. J. R. Bell, Livermore, Cal.

CHICKENS, DUCKS, GEESE, GUINEAS, Pea Fowl, Pigeons. Wm. A. French, 645 W. Park St., Stockton, Cal.

BLACK MINORCAS—Largest egg; whitest flesh. Eggs, \$1.00 per 13; \$5.50 per 100. Edward A. Hall, R. F. D. 1, Watsonville, Cal.

HATCHED CHICKS from Barred Rocks, R. I. Reds, White Leghorns. Good stock. Send for circular. G. L. Hawley, Madera, Cal.

WHITE PLYMOUTH ROCKS—Hatching eggs from splendid layers. Mrs. J. B. Tupper, Route A, Ceres, Cal.

RHODE ISLAND REDS—Eggs, \$1.00 for 15. P. M. Cox, Sonoma, Cal.

TURKEYS, DUCKS AND GEESE.

COLORADO MUSCOVY DUCKS—Quiet, quackless. Weigh up to 10 lbs. Good layers. Eggs, \$1.00 for 12. P. M. Cox, Sonoma, Cal.

MAMMOTH BRONZE TURKEY EGGS—During May at \$2.50 per 10, \$20 per 100. M. M. Reiman, Planada, Cal.

FOR SALE—Mammoth Bronze Turkey Eggs. Eastern stock prize winners. Mrs. Robert Farrell, Bolinas, Cal.


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MAMMOTH BRONZE TURKEY EGGS—\$3.50 per setting. Toulouse Geese eggs, 25c each. Mrs. M. Coghlan, Walnut Creek, Cal.

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Mrs. Best's Letter.

CASES AND CAMP KITS.

Dear Friends: With all the war agitation summer vacations are not receiving much consideration, but I saw in some special leather shops this week most attractive things for the traveler, some of which would make nice gifts for men entering the army.

There are traveling cases of leather which fold or roll up. Those designed for women are filled with Parisian ivory conveniences. One that was exceptional value for \$5 had a hand mirror, soap box, tooth brush case, powder receptacle, a hair brush and comb, a button hook and nail file. These are fitted into special places, so when packing up, nothing is forgotten if all the spaces are filled. Some of the larger cases buckle loosely enough that a night gown may be folded up on these toilet articles and one night's necessities are carried in one compact case. These outfits vary in expense as to quality of leather, lining and fittings. For men, there are the most convenient cases of black fittings, holding military brushes, shaving stick, razor, bottle for lotion, tooth brush, comb, clothes brush and flat mirror which will either hang or stand. More expensive cases are even more completely fitted out. These are almost invaluable to a man who travels, for he has everything at hand and in its place. This would make an appreciated gift to any man away from home.

Then also, in leather cases come bottles for small portions of medicine, flasks, leather-covered, collapsible drinking-cups, poker chips and playing cards in strong cases, pocket manicure sets and baggage tags.

Six small clothes pins, two glass-headed push buttons and a card of heavy twine is a novelty in a red leather case for the traveling woman's clothes line. These make dainty gifts and may be purchased for 50 or 75 cents.

Collar cases of leather with leather lining are very popular now for a gift to brother or father. They are round, the size of a collar, and stiffened around the sides for two inches to protect the collars. The top of the bag pulls together with a cord, and a pocket provides a place to keep studs and buttons.

Emergency cases make very useful gifts. One about six inches long, two inches deep, and four inches wide does not take up much room and holds most important things, among them being ointment, adhesive tape, scissors, court plaster, gauze, and five bottles in a separate compartment. Such a case may be purchased for \$2.50. For the traveler sewing kits are most important and the roll seems far more satisfactory than a bag from which things are so easily lost. For a woman, one about eight inches wide and twice as long, of cretonne or silk is good. Across one end the spools of cotton, silk and darning cotton are fastened by running tape through the holes and fastening the ends down firmly to the material. This allows the thread to unwind without removing the spool. Next a strip of flannel, pinked around the edges, holds the

needles and darning. The scissors, held down by two straps, fit in well next, and a pocket for buttons, hooks and eyes, and snappers follows. Another strip of flannel is filled with assorted pins and safety pins. On the end of the strip is made another flat pocket for tape, thimble, and anything else. Flaps are applied on the sides which fold over and protect the contents. This all rolls up snugly and is tied with ribbon or tape fastened to one end. This same plan is excellent made of khaki cloth, with stronger materials for camping use or for the soldier boy. Such a kit has been supplied to the American Ambulance Corps men leaving for France.

The safety button of metal, which is not sewed on, but clamps from the back with another piece of metal, has found great favor among the boys on camping trips.

ROSABELLA BEST.

SAMPLE MEALS FOR FAMILY OF FIVE.

The food materials indicated as being required may be combined into three meals in many ways. The following meals are given not because they are recommended above many others that might be prepared, but simply to show that such foods can be combined into dishes commonly used in American homes. These meals supply during the day all of the eight essential substances and also provide flavorings and condiments which, while not important as sources of nourishment, add to the attractiveness of certain foods.

BREAKFAST.

Fruit—1½ pounds of fresh fruit (equivalent to 3 medium sized oranges, 5 small apples, or a quart box of strawberries), or 3 or 4 ounces of dried fruits (equivalent to 10 or 12 dates or 4 or 5 figs). Cereal breakfast food—4 ounces before being cooked, or about 1½ pints after it is cooked. The equivalent in food value in puffed or flaked, ready-to-eat cereals would be 5 or 6 cups. Milk on cereal—¼ cup for each person. Sugar on fruit, on cereal, or in coffee, 2½ level tablespoons or 1¼ ounces. Bread—8 slices or 8 ounces. Butter—1½ ounces, or 2½ cubic inches. An egg, or 2 ounces of meat, fish, or poultry for each older person, and a glass of milk for each young child.

DINNER.

Meat, or fish—¼ pound for grown person; or, for each child, an egg or a glass of milk. Potatoes—(5 medium sized), 1¼ pounds. Another vegetable—(turnips, spinach, corn, cauliflower, or other), 1 pound. Bread—8 slices, or 8 ounces. Butter, 1½ ounces, or 2½ cubic inches. Steamed apple (or other fruit) pudding—(Ingredients: Two cups flour, 2 tablespoons butter, ¼ cup milk, 4 apples, 1 tablespoon sugar). Sauce—(Ingredients: One-half cup sugar, 1½ tablespoon flour, 2 teaspoons butter, ¼ cup water, flavoring).

SUPPER.

A gravy made out of 1 pint of skim milk, ¼ cup flour, 2 level teaspoons butter, and 4 ounces salt or

smoked fish (just enough for flavor). To this can be added the egg yolk left from the frosting of the cake. Rice—8 ounces, or 1 cup, measured before being cooked. Bread—8 slices, or 8 ounces. Butter—1½ ounces, or 2½ cubic inches. One-half of a cake—(Ingredients for whole cake: One-fourth cup butter, ½ cup sugar, 1 egg, ½ cup milk, 1½ cups flour, 2½ teaspoons baking powder.) Frosting made with 1 egg white and ¼ cup sugar.

Don't Waste Food.

In these stirring times of war preparation we receive warnings from everywhere not to waste our food supplies. The following excellent and practical hints are condensed from a circular issued by the United States Department of Agriculture:

Keep all perishable food cool, clean, and covered.

Dry cold is a much better preservative than damp cold.

The particles of dust floating in the air carry molds and germs.

When meat, fish, milk, and eggs are allowed to become warm they begin to spoil rapidly.

Disease-producing germs and bacteria multiply very quickly in slightly warm food, rendering it dangerous to eat.

Don't keep perishable foods in a hot kitchen or pantry, or in a sunny place any longer than you are obliged to.

Meat, fish, and milk afford ideal breeding grounds for disease germs. Keep these foods covered so that such germs may be excluded.

FLY-KILLING TIME.

This is the time of year to wage a war on flies, for every fly killed now means many less in the summer. See that all fly-breeding places are cleaned up. The fly has no equal as a germ-carrier—it is widely believed that it is the carrier of many diseases. Especially in households where there are small children should there be much care taken to destroy flies.

The United States Government recommends the use of formaldehyde and sodium salicylate for the destruction of flies. Three teaspoons formaldehyde to a pint of water is the correct proportion, or three teaspoons of powdered sodium salicylate to a pint of water. This can be poured upon blotting paper and has the advantage of being attractive to flies and not a poison for children.

FEATHER DUSTERS.

Feather dusters should never be used in the house for dusting, for they do not get rid of the dirt, but simply spread it. The best use for a feather duster is to have it hanging by an outside door to brush off the dust from the shoes before entering the house. For dusting inside, there are especially treated cloths, or one can be made by dampening cheese cloth with a furniture polish and allowing it to dry before using. This sort of cloth takes up and holds the dust.

Floral Department.

CHEMICALS FOR WEED KILLING.

Here is an article from the Florist's Review, that may be of interest to my readers, entitled "Weed Eradication":

BY MEANS OF CHEMICALS.

In the spring when the grass begins to grow, the florists' customers ask for advice on weed eradication, from lawns, drives and walks. Of course the florist who does garden work is prepared to tackle the job, or at least to supply the weed killer, but many who are called on only for advice do not seem to appreciate that one of the most efficient methods of weed eradication is by means of a chemical spray, which kills the weeds without injury to the grass, it having been found that all plants with broad leaves will be destroyed while the narrow-leaved plants will not.

IRON SULPHATE FOR LAWNS.

The use of chemicals for weed eradication has been successfully employed at the Missouri Botanical Garden, and it has been found that the one which is most efficient and which causes no injury to the grass is iron sulphate. It should be applied to the lawns by means of a compressed-air type of hand sprayer or a traction or cart sprayer, depending upon the size of the lawn. Sufficient pressure to make a fine spray is necessary, for too much solution at one place may cause injury to the young grass shoots just beneath the surface, which have only a slight power of resistance. If a hand sprayer is used it should be fitted with three feet of compression hose and a three-foot extension rod for swinging the nozzle over the lawn. The solution is made by dissolving two pounds of iron sulphate in one gallon of water, and, to be effective, lawns should be sprayed five to six times during the season, in order that each set of new leaves may be destroyed as they appear. The solution should be applied on bright days, for if the rain comes too soon after spraying it may wash off the iron sulphate before it has had a chance to act. It is not advisable to spray until two or three days after mowing, and the grass should not be mowed until two or three days after spraying. Care must be taken not to get the solution upon clothing or stone walks, on account of discoloration.

OTHER CHEMICALS FOR LAWNS.


Copper sulphate is sometimes used in a similar way to that described for iron sulphate, except that, as it is about ten times as destructive as iron sulphate, the solution should be weaker—about eight to ten pounds of copper sulphate to fifty gallons of water.

Ammonium sulphate, though sometimes used in small quantities as a fertilizer, has been applied to lawns in larger amounts, mixed with such inert material as sand, for the destruction of broad-leaved weeds. This chemical generally forms the basis of the commercial "lawn sand" and when spread upon the lawn checks the growth of all vegetation. However, the grass soon recovers, and, through the stimulus received, produces luxuriant growth, choking out the weeds.

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Coniferous Evergreens.
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FORTY VARIETIES OF FERNS

in 4-in. pots now ready, 25 cts. each, \$2.50 per
dozen. Am booking orders now for choice
varieties of CHRYSANTHEMUMS, commercial,
show, single and pompons. Forty varieties of
PELARGONIUMS in 4-inch pots will soon be
in bloom, 25 cts. each, \$2.50 per doz. Also a
large variety of other stock. Send for catalog.

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WHERE NO VEGETATION IS WANTED.

For walks, roads, tennis courts,
and all places where complete and
lasting extermination of all plant
life is desired, other chemicals are
used. The most important of these
is arsenate of soda. This is a most
active poison and care must be exer-
cised in its use. Two pounds to ten
gallons is the formula employed. The
solution may be applied with a
watering can, using care not to get
too close to valuable trees.

Carbolic acid is a powerful and
quick-acting weed killer, but its
effects are not so enduring as those
of the arsenical solution. The for-
mula is one pint to four gallons of
water. Salt also may be used, in the
form of a hot brine, the solution be-
ing strong enough to show crystals
forming on the surface. Better than
carbolic acid or salt, however, for
the destruction of woody plants, like
poison ivy, is caustic soda—either
sodium hydrate or sodium hydroxide.
It should be applied hot in practi-
cally a saturated solution, during
dry weather. After the destruction
of the weeds the soil should be thor-
oughly watered, in order to wash
out the soda and permit other vege-
tation to grow.

Good Health.


[By H. E. Pastor, M. D.]

Alopecia.

We hope our rural readers will not
take fright at this unfamiliar head-

ing. In the lingo of the learned it
merely means bald-headedness. There
comes a time in the lives of nearly all
who pass the meridian of life when
the thinning locks become a matter
of some solicitude. A friend whose
bushy bangs began to fade away a
decade or so ago, once dropped into an
old darkey's chair in a barber shop in
New Orleans. This venerable darkey
owned up to 80 years, and claimed
an experience of 60 years in shaving
and shearing. "Here's my chance,"
thought my friend. "Uncle," he said,
"you must have learned some valu-
able things in your long experience.
What's the best thing to keep hair
from falling out?" "Thar ain't no
such thing," he said, and much more
to bolster up his belief. And so it is.
There is no preparation which will
promote the growth of the hair when
the hair-follicles are dead. Hair
restorers are a delusion and a sham,
and that bald patch will grow grad-
ually balder and balder, even if you
bathed in a tubfull of hair restorer
morning and night. Keep your scalp
clean when you are young, massage
it frequently and thoroughly, expose
it to the sunshine as much as possible,
don't wear hats with tight bands or
no hats at all, and keep up the gen-
eral health. But hair is like health—
You don't think much about it until
you've lost it, and then your think-
ing doesn't do you much good.

Water from shallow dug wells is
usually polluted. Farmers should
examine their supply occasionally.



The high record, trap-nested hen, the A.R.O.
cow, the well finished steer, the well grown
colt, the prize hog:

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ture, for every purpose, is
brought within your reach now
at surprisingly lessened cost—
and in the face of rising prices
in almost all other lines of
goods.

The ability of Barker Bros. to
HOLD PRICES DOWN and to en-
able YOU to enjoy the advantages
of BETTER home surroundings
upon a basis of ACTUAL MONEY-
SAVING while costs are advancing
upon every other hand, is a priv-
ilege which it is indeed a pleasure
to extend—and one which the home-
furnishing public is not slow in em-
bracing, as the success of this event
proves.

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by express, prepaid, \$1.00.

HAROLD SOMERS, 150 DeKalb Avenue, Brooklyn, N. Y.

SAN FRANCISCO.

San Francisco, May 2, 1917.

WHEAT.

The resumption of offers on Northern Bluestem wheat was about the only notable development in the past week's market, as the further advances on the other varieties quoted had been already forecasted. The Bluestem and Northern Red varieties top the market at present with as high as \$4.90 asked for good stock. Offerings on the sample tables and the street here continue light, and shippers have a hard time in filling orders of any size.

Sonora wheat, re-cleaned.....None offered
Northern Club\$4.55@4.60
California Club, per ctl.None offered
Northern Bluestem\$4.55@4.90
Northern Red4.60@4.90

BARLEY.

Business in spot barley has been decidedly quiet during the past week, mainly the result of the scarcity of offerings in local dealers' hands, and this gain offerings is unchanged from last week. There was some advance on futures noted, but would-be speculators are buying very lightly until they can become better informed as to the attitude which will be taken by the Government in this matter. However, it is generally believed here that most of the exchanges in the United States will follow the lead of the Winnipeg Exchange last Saturday and prohibit any trade in futures.

Shipping, ctl.Nominal
BrewingNominal
Choice feed, ctl.\$3.00@3.15

OATS.

While local holders of oats are very firm in demanding the present quotations, very little trade has resulted, and a share of the trade here looks for easier prices on this grain within a short time. Some sales of small lots of white feed oats at \$3.10 per cental were reported, but these were for very small lots and were not heavy enough to make a market at that level. Present asking figures are too high to attract any shipping business.

Red feedNone offered
White\$2.90@3.00

BEANS.

While the market continues very firm, local trade was not so active this past week, and not all of the varieties now offered here met with a further advance in price. Limas were most in demand and are sharply higher, with a top of \$16.25 being freely paid for small lots. Black-eyes are 25c a cental higher and the range on garbanzos has assumed narrower limits. This is occasioned by the practical cleaning up in this market of the smaller sizes of this bean. Efforts on the part of brokers to close contracts for futures still continue, and it is reported that the higher prices being offered at this time are responsible for more farmers passing control of their crop. Those of the brokers who are believed to be representing foreign governments are particularly active, and it is believed here that the present crop will come far from supplying the demands made on this country for beans.

Bayos, per ctl.\$11.50@11.75
Blackeyes9.50@10.00
Cranberry beans11.50@12.00
Horse beans7.00@7.50
Small Whites (south)14.00@16.00
Large Whites14.00@16.00
Pinks12.00@12.25
Limas (south, re-cleaned)16.00@16.25
Red Kidney12.50@13.00
Mexican Reds11.00@11.50
Tepary beansNone offered
Garbanzos\$5.50@6.50

CORN.

With local offerings confined to two varieties, prices on corn naturally stiffened during the past week, and trade has slowed up very noticeably. The bulk of the sales have been in small lots, with California yellow in sacks bringing \$3.50 and Egyptian \$4.20. One concern that has a good sized lot of corn on hand is holding for \$5 on its Egyptian stock.

(First-hand prices on strictly first-class grain, San Francisco.)
Eastern Yellow, ctl., bulk.....Unsettled
California, sacked\$3.45@3.50
Milo MaizeNone offered
Egyptian\$4.10@4.20

HAY.

Last week saw a halt in the steady upward movement in hay prices, but the local market remained very firm at current quotations. Arrivals were but 1,220 tons, as compared with 1,378 tons for the week before and 1,589 tons for the week before that. As was the case during the preceding week, receipts were again practically all Northern Hay, and this variety was advanced \$2 per ton here. Some improvement was reported in the green feed situation, although this betterment in market conditions was largely in the irrigated sections. Rainfall was reported in a few scattered northern sections, but in most of the California haying sections the past week has been very unfavorable to growing stands. A peculiar situation exists here in that the Oregon and Washington sellers, who formerly owned the hay arriving here, at present are now trying to purchase this stock back at advanced prices. They have found themselves oversold. However, there is little or no chance that this shortage can be relieved until the new crop alfalfa hay is here in marketable quantities.

Wheat, No. 1\$33.00@35.00
No. 225.00@30.00
Tame oats25.50@33.00
Wild oats24.00@29.00
Barley27.00@30.00
Alfalfa24.00@27.00
Stock hay16.00@18.00
Straw, per bale1.00@1.25

FEEDSTUFFS.

Feedstuffs generally held about firm during the past week, with alfalfa meal and bran proving the exceptions to this rule. Both of these advanced under a heavy call. Two more types of feedstuffs which has been out of the market last week were again offered in quotable amounts, shorts bring-

THE MARKET REPORTS

Figures Given are Independent and Reliable.
Prices Quoted as Paid to Producers.

ing \$52@53 per ton and coconut meal \$38 per ton. Several holders of shorts were asking \$55, but as yet no sales at this price have been reported.

(Per ton, San Francisco.)

Beet Pulp, per tonNone offered
Alfalfa meal, per ton\$34.00@35.00
Bran, per ton46.00@48.00
Oil CakeNone offered
Coconut cake or meal\$36.00
Cracked corn72.00@73.00
Middlings58.00@60.00
Rolled Barley60.00@62.00
TankageNone offered
Rolled oats58.00@60.00
Rice middlingsNone offered
Rice bran35.00@36.00
Shorts\$52.00@53.00

POTATOES, ONIONS, ETC.

The general trend of quotations in this market during the past week were downward, largely the result of more plentiful supplies. The daily receipts of asparagus are now so heavy that quotations locally are per box, the present range being \$1.25@3.00. The canners are paying the lower end of this range for white, while some off-grade lots of green stock are going to these interests at \$3@3.50 cents per box. Peas are also more plentiful, and bringing \$1.50@2.00 per sack, with both string and wax beans commanding 10@15 cents per pound. Summer squash is arriving in quantities larger than the trade will handle, and will not command more than \$1.25 per box. New potatoes are coming to hand in larger amounts and garrets will not command more than 7 cents per pound.

Asparagus, per box\$1.25@3.00
Beans, per sack\$1.50@2.00
String Beans, per lb.10@15c
Wax Beans, per lb.10@15c
Hubbard squash, per lb.2 1/2@3 1/4c
Summer squash, per crate\$1.00@1.25
Lettuce, crate75c@1.25
Celery, Delta, crate\$1.00@1.50
do, Southern, crateNone offered
Tomatoes, crateNot enough to quote
Rhubarb, box60@85c
do, Mammoth\$1.00@1.25
Potatoes, ctl., Delta\$4.75@5.50
SalinasCleaned up
Oregon\$3.90@4.25
New, per lb.5@7c
Sweets, per lb.None offered
Onions, green, per box\$1@1.25
Garlic, lb.1@3c
Bermuda (seed), per ctl.\$2.50@3.00

POULTRY.

Quotations on some lines advanced during the past week, with others falling off under very heavy receipts. Young roosters made the most notable gain, with old roosters, large sized broilers and small Leghorn hens registering an easier tone. Live turkeys are nearly nominal, so little interest is being shown at the present time. However, good young live birds will command as high as 22 cents per pound. Both ducks and geese declined during the week. Turkeys, live, lb.20@22c
do, dressed, large, lb.Nominal
Broilers, 1 1/4 to 1 1/2 lbs.35@36c
do, under 1 lb.23@25c
Fryers35@37c
Hens, extra, per lb., colored22@24c
Small leghorn19@21c
Smooth Young Roosters, per lb. (3 lbs. and over)33@35c
Old Roosters, per lb.13@15c
Geese, per lb.18@20c
Squabs, per lb.35@40c
Ducks18@21c
Old17@18c
Belgian Hares (live)14@15c

BUTTER.

The butter market has ruled very steady this past week, and the closing day's trading carried the extras grade up a half-cent over the opening. Shipping business has been responsible for this better tone here, as most of the local dealers consider the present figures too high to warrant the beginning of storage as yet. At present there are some 17,000 pounds of butter in

storage, but this is all intended for government contracts and will not remain in the icehouses more than a month at the longest. Los Angeles again entered this market, as Southern receipts were unequal to the demand on several days. Portland and Seattle houses were also buyers and five cars of California butter were sent East last week.

Thu. Fri. Sat. Mon. Tu. Wed.
Extras33 33 33 33 33 33 1/2
Prime 1sts32 1/2 32 1/2 32 1/2 32 1/2 32 1/2

EGGS.

All grades of eggs closed the week at a higher level than on the opening day, a good local consumption and fair shipping business combining to steady the market here. Entries into storage were not so heavy as on the preceding week, local icehouse holding at present being 65,000 cases as compared with 63,250 cases at this time last year. Three cars of California stock went East last week, but the bulk of the shipping was coastwise. A large order also went out for Hawaii. The present local situation can best be described as steady to firm.

CHEESE.

There has been a markedly firm tone ruling trading in cheese during the past week, and all of the quoted varieties advanced. Jack cheese is in especially good call and is commanding as high as 25 cents per pound on street sales. The San Francisco Exchange last week voted to drop the quotations on New York, Wisconsin and Oregon cheese owing to the light trading in these grades on Change.

Y. A.'s25c
Fancy Calif. Flats, per lb.21 1/2c
Monterey Cheese23@25c

DECIDUOUS FRUITS.

Fancy Newtown Pippins sold at a wider range during the past week, as considerable of the stock is beginning to show the effects of being held so long in storage.

Apples:
Beltflower, boxNot enough to quote
Newtown, fancy\$1.25@1.75
do, ordinary1.00@1.15

CITRUS FRUITS.

Higher prices on the choice grade of navel oranges and a similar change with regard to lemons proved the only changes on the citrus lines during the past week.

Oranges:
Navels, fancy, per box\$2.65@2.90
do, Choice2.25@2.50
Tangerines1.75@2.00
Lemons:
Fancy, per box3.25@3.50
Choice2.75@3.00
Standard1.75@2.00
Lemonettes1.50@2.25
Grapefruit, fancy2.75@3.00

DRIED FRUITS.

The announcement of the California Prune and Apricot Growers' Association that 75 per cent of the available acreage had been signed up, and that it would henceforth control the market on these lines, was the principal development last week. As yet this has had no visible effect on prices for futures, which remain about the same as quoted last week. (Net to growers, bulk basis, f. o. b. shipping point.)

Apples, new crop5 1/2 @ 6 c
Apricots, per lb.15 @ 16 1/2 c
Figs, black, 1916Not enough to quote
do, 19175 1/2 @ 6 1/2 c
do, white, 19176 @ 6 1/2 c
Callimyrna, 19179 @ 10 c
Prunes, 4-size basis, 19175 1/2 @ 6 1/2 c
Prunes, 19167 1/2 @ 8 1/2 c
Pears6 @ 7 1/2 c
Peaches, 19177 1/2 @ 8 1/2 c

BERRIES.

Heavier receipts of northern berries and the daily shipment of nearly a straight car of southern berries has served to break the market here during the past week, and all offerings are lower. During the week it was announced that the California Packing Corporation had closed

with the Growers' Association to handle all of their surplus this year, but officials of the Packing Corporation say that they are not ready as yet to announce their stand.

Strawberries (per crate):
Southern75c@1.00
Fresno75c@1.10
Longworths, per chest9.00@12.00

HOPS.

Quotations on old crop hops took a small decline during the past week, the result of a slow call.

Sacramento5 1/2 @ 6c
Sonoma7 @ 9c
Mendocino7 @ 9c

HONEY.

There have been no changes of late in the quotations on honey. Local dealers estimate that there will be a better than normal production this year, but hold that the big demand will probably result in higher prices.

(Prices in San Francisco):
Comb, water white13@15c
Amber8@10c
Light amber11@12c
Fancy white, extracted10c
Light amber, do8c

LOS ANGELES.

Los Angeles, May 1, 1917.

BUTTER.

Receipts of week ending May 1....324,410
Receipts of past week.....233,470

The decline of last week brought prices down to a point that encouraged a greater local consumption. Receipts were very good, better than the same week last year, and the stocks of butter in cold storage here is now 14,037 pounds heavier than this time last year. Prices, however, up to Monday showed no change, it being a 33c market for extras up to Monday both here and in San Francisco. Still prices are 7c higher than this time last year. In Chicago extra creamery declined 1c up to Monday under the influence of increased production in the Central West, it dropping from 39c the opening of our review week to 38c. In New York, on the other hand, the market is 1c higher on extras than a week ago, it being quoted there now at 42 1/2c. Tuesday brought no change. Receipts were light, but San Francisco was unchanged. Chicago was up 1/2c on extra, while New York was down 1 1/2c. On call there was no bids or offerings.

Daily quotations:
1917.....Wed. Thu. Fri. Sat. Mon. Tu.
Extra33 33 33 33 33 33
1916.....
Extra26 26 26 26 26 24

EGGS.

Receipts (railroads) or week ending May 1, 1917, 3,411 cases.
Receipts (railroads) for week ending May 1, 1916, 3,629 cases.

There was a firmer tone to the market the past week and more life to the trade. Receipts were only fair and lighter than the same week last year, while the Eastern markets all stiffened up again. This caused cold storage people to enter the market again and they made fair purchases and there was a very good consumption demand, as eggs at present prices are cheaper than meat. The free marketing of hens by the poultry people in the country on account of the high price of feed, it is also thought, must have an influence upon the later supply of marketable eggs, hence a willingness to store eggs at present prices and the higher market for extras. Tuesday the market on call was a cent lower on extras, but up 1/2c on case count. Pullets unchanged.

Daily quotations:
1917.....Wed. Thu. Fri. Sat. Mon. Tu.
Extra31 1/2 31 1/2 31 1/2 31 1/2 32
Case count30 30 30 1/2 30 1/2 30 1/2
Pullets28 28 28 28 28 28
1916.....
Case count22 23 23 23 23 21 1/2

POULTRY.

Receipts the past week were liberal of light broilers and light hens, they both being a drug upon the market. The continued high price of feed causing chicken raisers to rush this class of their holdings to market. The result was a further break in prices and sales were slow at the decline. Heavy hens also lost a little in sympathy. Fryers have also been marked down, though they and heavy hens met with a fair demand. Turkeys and ducks steady and in fair demand. Not many coming in.

We quote from growers:
Broilers, 1 1/4 to 2 lbs.20@21c
Fryers, 2 1/2 to 3 lbs.25c
Hens over 4 lbs.18@19c
Hens under 4 lbs.14@15c
Ducks21c
Geese15c
Roosters, 3 lbs. up (soft bones)20@30c
Turkeys, heavy, 12 lbs. and up24@25c
Turkeys, light15@16c
Squabs, live, per doz.\$1.50@3.00
Dressed3.75@4.85

HAY.

The market the past week was quiet and weak. Receipts were somewhat better, being 54 cars. This caused buyers to hold back and try to bear prices, but holders refused to yield concessions in the face of a light crop. The country is still in the market for horse hay, but dairy people bought sparingly, they using mostly green alfalfa.

We quote f. o. b. Los Angeles:
Barley hay, ton\$21.00@23.00
Oat hay, ton22.00@24.00
Alfalfa, northern, ton20.00@22.00
Alfalfa, local, ton22.00@23.00
Straw, ton11.00@12.00

NEW VEGETABLES.

There was a marked increase in the receipts of new vegetables the past week and with the increased offerings prices broke sharply. At the decline, however, there was a better movement. The cabbage suffered the greatest decline. Receipts liberal and demand very light. Shippers out of the market and cabbage can now be bought at \$40@45 per ton

Special Citrus Market Report

Los Angeles, April 30, 1917.

Shipments of citrus fruits from Southern California from November 1 to April 25: Oranges, 20,695 cars and lemons 3552 cars. Same time last year: Oranges, 17,765 cars and lemons 2843 cars.

The eastern markets as a whole were hardly so strong the past week. Fancy oranges were steady and met with a fairly good demand. The less well-known brands, however, were slow sale and at times sold lower. Lemons held steady and met with a very good demand. Locally the market was draggy and lower. The abundance of strawberries and their cheapness interfering with the local demand for oranges. Local packers bought more sparingly than for a long time and only bid 1 1/4c for oranges and did not buy freely at these figures. Demand lighter from the trade, even for the best. Tangerines out of the market. Grapefruit coming in freely, slow sale and lower 1/2c per pound. Packers now only bidding 1@1 1/4c per pound in the grove

picked. Lemons lower in sympathy with oranges and slow sale. Packers only bidding 1/2c per pound in the grove picked for the best. Poor have to be sold for what they will bring.

AUCTION SALES.

New York, April 30, 1917.

Forty-six cars at navels, one sweets, seven mixed and two cars lemons sold. Market firm on navels and doing better on lemons. Weather cloudy. California navels averaged \$1.55@3.20. Sweets, \$1.30@2.00. Lemons averaged \$2.10@2.75.

Boston, April 30, 1917.

Thirty-six cars sold. Market unchanged on oranges and lemons. Navels averaged \$1.35@2.85. Lemons averaged \$1.40@3.30.

Philadelphia, April 30, 1917.

Twenty-nine cars sold. Market unchanged on oranges and lemons. California navels averaged \$1.00@2.55. Lemons averaged \$1.85@2.65.

EASTERN PEACHES SHORT.

Eastern peaches were hard hit by March frosts as reported by the California Fruit Exchange to its members. Georgia less than half a crop, not over 3,000 cars; Texas half crop, 1,500 cars; Oklahoma, West Virginia, Ohio, Michigan, and Arkansas peaches reduced by winter killing frost or drought. Fair crops expected in Missouri and Colorado and fine prospects in Maryland and Delaware.

PRUNE AND APRICOT GROWERS ORGANIZED.

The work of securing the needed membership and funds to handle and market the prune and apricot crops of California by a co-operative association was brought to a successful finish this week. At a meeting of trustees and directors of the California Prune and Apricot Growers, Inc., held at San Jose last Monday, the announcement was made that over \$750,000 had been subscribed and more than 75 per cent of the acreage and tonnage had been secured. A vote of thanks was tendered State Market Director Weinstock for his aid in perfecting the organization. The coming crop will be handled by the association through the packing houses already established, and the crop sold under the direction of the association. Growers are to be congratulated upon the successful prosecution of the campaign, especially as the entire cost was less than 5 per cent. The new association starts out with as fine a body of officers and directors as could be wished and success is predicted to both it and the growers.

that a week ago sold at \$90@100 per ton. Asparagus, peas, new potatoes and new onions are all sharply off and the market weak at the decline. New string beans are now on the market in fair supply and can be had at much lower prices.

We quote from growers:
Cabbage, per cwt.\$2.25@2.50
Local and Northern, per lb.4@6c
New potatoes, per lb.5@7c
Peas, per lb.3@4c
New onions, silver skins and Bermuda, per crate\$1.75@2.00
String beans, per lb.12c

BEANS.
The seeding time now being at hand and a good demand being had from the country for seed, all beans have been marked up again, as stocks are light. The trade, however, is taking very few beans at present high prices. No more tepary on hand.

We quote from growers:
Limas18c
Large white17c
Small white17c
Pinks13c
Blackeyes12@12½c

BERRIES.
Market sharply lower from a week ago. Receipts of strawberries liberal and the quality of berries coming in good. The high price of sugar influenced light buying for preserving and leaving a more liberal supply for table use, had a bearish influence upon prices. Hence the break. But few blackberries coming in and they are unchanged.

We quote from growers:
Strawberries, poor to choice, per 30-basket crate80@90c
Fancy, per 30-basket crate.....\$1.15@1.20
Blackberries, per 30-basket crate.....\$5.00

Special Livestock Market Report

San Francisco, May 2, 1917.
CATTLE are coming in more freely and the price is marked down. Fed cattle command a higher price than quoted.

Grass Cattle—
Steers, No. 18¾@9 c
No. 28¼@8½c
Cows and Heifers7@7½c
No. 26½@6¾c
Bulls and Stags6@7 c
Calves, light9 c
Medium8¼@8½c
Heavy7@8 c

HOGS are coming as usual. No change. Plenty of light weights arriving.
(Rough docked 10 and 20 pounds; piggy sows, 20 to 40 pounds.)

100 to 150 lbs.12 c
150 to 300 lbs.14¼@14½c
300 to 375 lbs.13¾@14 c

SHEEP.—Lambs rather poor condition. No change.
Prime Wethers11½@12 c
Ewes10@10½c
Milk Lambs12@12½c
Yearling Lambs12@12½c

WOOL markets East are picking up a few cents and a rise will likely come in the West before this is printed.

Sacramento Valley, spring clip....40@45c
MendocinoNominal
Cloverdale40@42c
San Joaquin, 8 mos.26c
San Joaquin, year's35@40c
Southern, spring clip28@30c
Southern, 7 mos.22@23c
Imperial Valley, 7 mos.30@35c
Nevada, year's35@40c

Los Angeles, May 1, 1917.
CATTLE—The poor condition of the pastures in many sections and high price of feed are causing freer offerings of cattle on the market. Hence there was a decidedly weaker tone to the market the past week. At the same time choice fat steers met with a fair demand at steady prices. The less desirable at times, however, it was thought, were a shade lower. Killers more independent and inclined to judge more closely as the beef market is dull.

Calves continue to come in freely and are dull and weak.

Per cwt. f. o. b. Los Angeles:
Beef steers, 1000 to 1100 lbs.\$9.50@10.00
Prime cows and heifers.7.50@ 8.00
Good cows and heifers.7.00@ 7.50
Calves8.00@ 9.00

HOGS—While there is no change to note in this market from a week ago, there was little real life to it. Too many hogs coming in only half fat, being forced to market on account of the high price of feed, and they were rather slow sale. Choice grain fed hogs on the other hand continue scarce and are finding a ready sale at a premium of \$1.00 to \$1.50 per cwt. over quotations under the influence of high markets east. California and Arizona continue to furnish what hogs coming in. Killers, while all in

the market and wanting supplies, were less anxious for hogs than a while back, as there has been a noticeable falling off in the demand for pork.

Per cwt. f. o. b. Los Angeles:
Heavy, averaging 250@300 lbs.\$11.50@12.00
Mixed, 200@250 lbs.12.00@13.00
Light, 175@200 lbs.12.00@13.00
Rough docked 20 pounds, piggy sows 40 pounds and stags 40 per cent.

SHEEP.—The market the past week was rather quiet and weak. While prices show no quotable change, killers were less anxious for supplies, while holders in the country with marketable sheep and lambs, influenced by the high price of feed, were more anxious to sell. California and Arizona furnished what coming in and they were in only fair flesh, showing economical feeding. Killers, while all in the market, are wanting fewer sheep than a while back, as the trade is taking mutton and lamb less freely at the high prices.

Per cwt. f. o. b. Los Angeles:
Prime wethers\$ 9.00@10.00
Prime ewes9.50@10.00
Yearlings10.50@11.00
Lambs13.00@14.00

North Portland, Ore., April 30, 1917.

CATTLE—Today's receipts of cattle were about 700 head, the quality of which was the best seen on the market for some time. There was an excellent demand from a big string of buyers and prices advanced sharply with a gain of 25 to 75 cents. One load of fancy yearlings from Dillard, Oregon, topped the market at \$11.25, with four other loads of prime light grain-fed steers which brought \$11.00, with a large string from \$10.50 up. Ordinary grade sold from \$9.50 to \$9.85, with a load of good heavy steers at \$10.15. One load of prime yearling heifers brought \$10.65; several other small bunches sold from \$8.00 to \$10.00. Strictly good cows sold from \$8.50 to \$9.00, with ordinary ones at \$8.00. The off grade dairy bred cows sold from \$6.00 to \$7.50, an advance of about 25 cents over last week. Best heavy bulls brought \$7.75 to \$8.25, with fair kind bringing from \$5.50 to \$7.00; the fair light veal calves again brought \$10.00; heavy calves from \$7.00 to \$9.00.

HOGS.—There was but a moderate supply of hogs here today, although the demand was rather slow and prices were generally steady with a week ago. The top of \$15.85 was a new record, while several other loads brought \$15.75, with the bulk of the good hogs from \$15.50 to \$15.65; Pigs sold mostly at \$14.25.

SHEEP.—A small bunch of good wool lambs brought \$13.50, with ewes at \$11.00 and a mixed load of old ewes and bucks brought \$9.75 to \$10.00. The sheep supply being very small, with a slow demand and prices are all unchanged.

PRICE FIXING BY GOVERNMENT REGULATION.

Owing to abnormal economic conditions prevailing at the present time, it has been suggested to Congress by the Secretary of Agriculture that power be conferred upon the Government to fix maximum and minimum prices of food products should an emergency arise to require the exercise of this power. The object of the minimum price would be to assure farmers that they would not have to dispose of their products at a price level involving an inadequate return, or a loss in any event. The power to fix a maximum price would only be exercised when necessary to curb uneconomic speculation and the illegitimate manipulation of food products on the market. The main object of the suggestion, however, is to stimulate production by guaranteeing the producer a fair return on the largest crops he can grow.

Should this suggestion of the Secretary of Agriculture be received with favor, and some form of measure based on this suggestion be enacted into a law, the carrying out of its provisions would probably devolve upon the inter-ally food commission which seems likely to be one outcome of the international war conference of the allies with the President and his advisers now in progress at the national capital.

HONEY.

The past week brought no change in the honey situation. The first two days of the week under warm sunshine the bees are said to have laid up a good deal of orange honey. But the shower of Wednesday turned the weather cold again and the bees did no good the balance of the week, and are said to have eaten up what honey they stored the first two days. Beekeepers under these conditions are refusing to contract honey and buyers are refusing to bid until the crop takes a more definite shape; hence we are unable to give quotations.

WEEKLY BUTTER AVERAGES.

		Cents per pound for Extras.	
		San Francisco	Los Angeles
Week Ending		1916	1917
Jan.	9.....	26.65	34.91
"	16.....	27.83	35.83
"	23.....	28.85	36.91
"	30.....	36.33	38.48
Feb.	6.....	30.25	40.00
"	13.....	31.40	39.70
"	20.....	32.00	36.00
"	27.....	30.90	37.00
March	6.....	24.08	35.50
"	13.....	29.91	35.50
"	20.....	28.33	32.25
"	27.....	28.50	36.00
April	3.....	28.50	37.91
"	10.....	29.31	39.33
"	17.....	27.33	39.58
"	24.....	25.25	35.66
May	1.....	24.33	33.08

WEEKLY EGG AVERAGES.

		Cents per dozen for Extras.	
		San Francisco	Los Angeles
Week Ending		1916	1917
Jan.	9.....	31.41	37.91
"	16.....	30.33	41.83
"	23.....	34.83	32.50
"	30.....	36.33	32.08
Feb.	6.....	35.66	34.99
"	13.....	28.90	33.30
"	20.....	23.66	33.01
"	27.....	20.33	29.00
March	6.....	18.33	24.75
"	13.....	19.50	25.96
"	20.....	20.00	25.66
"	27.....	21.41	27.16
April	3.....	21.75	28.58
"	10.....	22.00	29.06
"	17.....	21.16	32.33
"	24.....	21.83	32.91
May	1.....	21.00	32.00

Publisher's Department.

"Your swine issue was certainly a valuable paper and a dandy in general get up and scope. Do it again."—W. H. Waugh, Riverside.

The number of new subscribers to the Rural Press during the past three weeks totals 630. All of these were secured without the use of premiums or cutting our subscription price of \$1 per year.

"Your paper has improved wonderfully, and every issue is worth the price of the year's subscription. Every farmer and fruit grower should have it in his library."—Geo. A. Lammiman, Shasta county.

"I have before me your issue of April 7th, which I note is a 'hog special,' and I certainly want to compliment you upon this number. It is brimful of the most interesting kind of material and I know it will be a boon to the hog industry in the West and particularly California. You certainly have been most fair in the way you have handled all breeds and every department is complete in every detail. We will surely keep this number on file for reference."—N. M. Gordon, Swine World, Chicago.

California citrus growers in particular should view with satisfaction the fact that inquiries for our own State stock are being received from Florida, which State evidently has come to the conclusion that California nurseries are growing superior trees, trees that bring forth good fruit. The Wallace Nurseries, Los Angeles, who have found the Rural Press one of their far-reaching mediums, reports inquiries from Florida and even from Japan. Ventura and other counties have been calling on them for trees and they state this season has been far in excess of last year and that the prospects are exceptionally good for next spring and that much higher prices will prevail.

Classified Advertisements

Rates in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

MISCELLANEOUS.

EVERY SIZE WROUGHT IRON WATER
Pipe and screw casing water pipe, guaranteed as good as new. Prices right. Send for catalogue. We beat no one; everybody gets a Square Deal. Weissbaum Pipe Works, 160 Eleventh St., San Francisco.

FOR SALE.—New Bull Tractor, five-horse pull at drawbar, twelve on belt. Has only plowed ten acres. Burns distillate. Good as new. \$375.00. Will demonstrate. Box 540, Rural Press.

GROCERIES WHOLESALE.—Our prices are the lowest and our quality the highest. Dollars saved on every order. Freight paid within 100 miles. Send for catalog. Freese and Company, Mail Order Grocers, 1264 Devisadero St., San Francisco.

SECOND-HAND WATER PIPE and Screw Casing. New threads and couplings dipped in hot asphaltum. All guaranteed. Send us your inquiry. Scheer Pipe Works, 306-8 Howard St., San Francisco.

AT LAST THE PERFECT SILO—THE Star Round; No hoops. No bolts. No experiments. Any one can erect. Close price. Address: D. O. Lively, 215 Hobart Bldg., San Francisco.

PATENTS THAT PROTECT are procured through Pacific Coast Patent Agency. Savings and Loan Building, Stockton, California. Established fifty years.

TO REDUCE THE HIGH COST OF LIVING, send for our Wholesaler to Consumer Catalog. Smiths' Cash Store, 106 Clay St., San Francisco.

WANTED TO BUY—CANARIES—1 Coolidge Place, off Jackson, San Francisco.

SEEDS, PLANTS AND TREES.

SEED BEANS.—We sell direct to the grower. Buy now before the advance. Our stock is carefully selected. Satisfaction guaranteed. Tell us the nature of your soil and we will suggest the best variety. Modesto Farmers Union, Modesto.

ALFALFA SEED.—There is a difference in the varieties and strains of alfalfa seed. Send your address for sample and our low price, and we will tell you just how our seed is selected—and why. Bomberger Seed Co., Modesto, Cal.

SEED CORN.—Egyptian white, large pure white kernels. High germination test. None better offered. Also milo maize, feterita, and Egyptian wheat. Modesto Farmers' Union, Modesto.

SUDAN GRASS SEED.—Local grown and inspected, 35c per lb. while it lasts. Black amber sorghum, choice quality, 5½c per lb. Modesto Farmers Union, Modesto, Cal.

WANTED AT ONCE.—30 sacks Tepary beans. Send sample and state lowest price. K. Knutsen, Turlock, Cal.

WANTED.

WANTED.—Young men and women to attend the Western Normal Course—Normal and Academic. The Normal Course gives an adequate preparation for teaching, at a great saving in time and money. Academic course gives practical finish to education. Write for Bulletin "A," Western Normal, 524 E. Market St., Stockton, Cal.

WANTED—POSITION.—By young married man. Ten years experience in all branches of farming as worker and foreman. Practical experience and good agricultural education. Milking machine operator. Hard worker, sober, reliable. E. B., 1661 Octavia St., San Francisco.

POSITION DESIRED.—20 years practical experience constructing operating and repairing electrical and mechanical apparatus, pumps, gasoline engines, storage batteries, etc. Some automobile experience. Age 38; strictly sober. First-class references. Box 530, Rural Press.

WANTED.—Sober and industrious man for orchard work, must be able to handle team and accustomed to irrigating. Good opportunity for right man. State references and experience. Address, Box 520, Rural Press.

WANTED, MARRIED COUPLE.—Man experienced in general farm work and wife to cook for owner whenever needed. References required. Address, P. O. Box 34, Menlo Park, California.

YOUNG MAN.—Industrious, reliable, wants work on poultry ranch. J. M., 1661 Octavia St., San Francisco.

COUNTRY LANDS.

A BARGAIN ORCHARD.—In full bearing, 20 acres; about one mile from the city of Modesto, just off State Highway. Present crop Muir and Cling peaches, estimated at \$3000. Beautiful country place, almost in the city. Bungalow with bath, fine tank house and wind mill, drying trays, etc. Only \$10,000. Easy terms, as I must go East. Full particulars. E. A. Rodgers, Box 350, Route D, Modesto, Cal.

RANCH TO LEASE OR FOR SALE.—9500 acres in Tehama County—8000 acres rolling hill land, 1500 low level land. Suitable for stock and general farming. Some fruit. All well fenced. Summer range in Trinity County also. Address, P. O. Box 124, Cottonwood, Cal.

B. S. COELHO, CORCORAN, CAL. Owner—150 acres improved, subdivided alfalfa dairy, Stratford. Keeps 85 cows. C. E. Robertson, 105 Montgomery St., San Francisco.

STEVENS COUNTY.—Logged-off land where stock-raising and dairying pay. Free booklet. Phoenix Lumber Co., Crop Department, Spokane, Washington.

WANTED to hear from owner of good ranch for sale. State cash price and description. D. F. Bush, Minneapolis, Minn.

STATE, GOVERNMENT AND INDIAN Lands.—Bargains overlooked. Free New Blue Booklet. Joseph Clark, Sacramento.

BRENTWOOD IRRIGATED FARMS

63 miles from San Francisco in Contra Costa county. 1,000 Acres planted in Alfalfa. For sale in tracts of 10 acres and up. Also first class orchard and general farming land. All under irrigation. One to three miles from railroad station.

Easy Terms of Payment. For prices, etc., address Balfour, Guthrie & Co., Land Department, 350 California St., San Francisco

HIDES

SHEEP SKINS GOAT SKINS FURS

ARE WORTH MONEY NOWADAYS. Get best results by shipping to the long-established, reliable house of W. B. SUMNER & CO., 220 Townsend St., San Francisco

\$1150 F. o. b.
Racine

Mitchell Junior—a 40 h. p. Six
120-inch Wheelbase
Price will be advanced to \$1195 MAY 10th

Mitchell
SIXES

\$1460 F. o. b.
Racine

7-Passenger—48-Horsepower
127-inch Wheelbase

Trust John W. Bate To Build a Car As You Want It

The latest Mitchells will show you that John W. Bate is a master at building cars.

You have never, at any price, seen a car so complete. You have never seen such luxury, so much over-strength, at anywhere near our price.

How Mr. Bate Works

Mr. Bate, the great efficiency expert, has spent 14 years on Mitchells. The latest Mitchell is his 19th model. It is the final result of 700 improvements.

But he started by building this model plant, which now covers 45 acres. He spent millions of dollars to build and equip it to build this one type economically.

Nowhere else in the world could a car like the Mitchell be built at the Mitchell cost. His methods will save us on this year's output about \$4,000,000.

It is that saving which pays for all the Mitchell extras, and gives men these matchless cars.

31 Extra Features

There are 31 features in the Mitchell which nearly all cars omit. Things like a power tire pump, reversible headlights, dashboard engine primer, ball-bearing steering gear.

There is more beauty and luxury than

was ever before combined in a modest-priced car. The reason is, we build our own bodies. And all we save goes into this extra luxury.

And no other car has Bate cantilever springs. They make the Mitchell ride like an aeroplane. In two years' use, on many thousand cars, not one of these springs has broken.

100% Over-Strength

But the chief Mitchell extra is double strength in every vital part. In the past three years we have doubled our margins of safety. We are making the Mitchell a lifetime car. Three of these cars have already run over 200,000 miles each. That's 40 years of ordinary service.

Over 440 parts are built of toughened steel. All safety parts are vastly over-

TWO SIZES

Mitchell—a roomy, 7-passenger Six, with 127-inch wheelbase and a highly-developed 48-horsepower motor.

Price \$1460, f. o. b. Racine

Mitchell Junior—a 5-passenger Six on similar lines, with 120-inch wheelbase and a 40-horsepower motor— $\frac{1}{4}$ -inch smaller bore.

Price \$1150, f. o. b. Racine
Price will be advanced to \$1195 MAY 10th
Also six styles of enclosed and convertible bodies. Also new Club Roadster.

size. All parts which get a major strain are built of Chrome-Vanadium.

In these days of high steel prices, any car which is built this way is either rare or costly.

Everything You Want

Mr. Bate has worked 14 years to combine in Mitchells everything you want. He spent one year in Europe, to glean the best ideas from there.

Before designing this year's Mitchells, his artists and experts examined 257 new models. So all the known attractions are combined in these Mitchell cars.

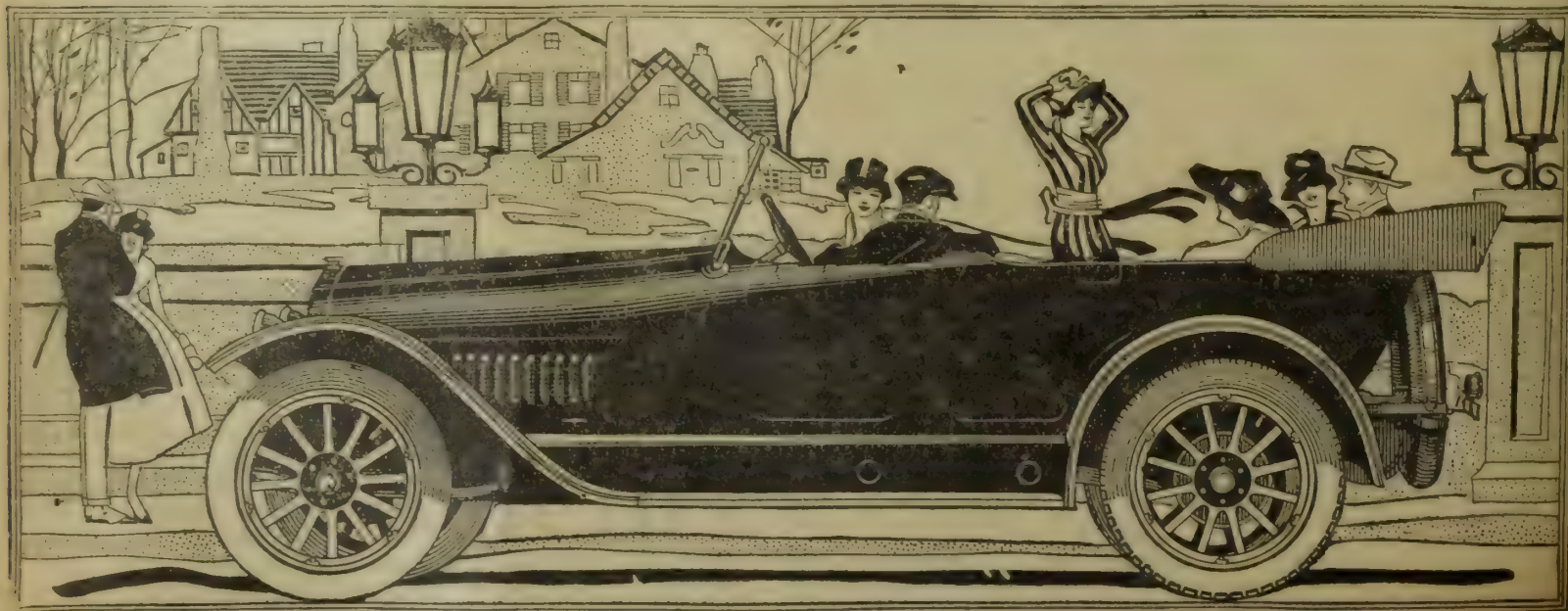
One Size, \$1150

Price will be advanced to \$1195 MAY 10th
The smaller Mitchell—Mitchell Junior—costs only \$1150. Yet it is a powerful Six, with a 120-inch wheelbase. You never saw such value in a car around this price.

But the larger Mitchell offers special value. See both sizes. See the extra features, the extra beauty and the extra strength. You will want a Bate-built Mitchell then for the car you buy to keep.

If you don't know the nearest Mitchell dealer, ask us for his name.

MITCHELL MOTORS COMPANY, Inc.
Racine, Wis., U. S. A.



THE PACIFIC RURAL PRESS

SAN FRANCISCO

MAY 1917.

LOS ANGELES

Good Types of California Dairy Buildings

[Written for Pacific Rural Press.]



IN THE construction of dairy buildings the California dairyman must have several things in mind, principally sanitation, convenience, and reasonable cost of erection. The California dairy barn need not be so elaborate or expensive as those built in colder climates; and for that reason we need standards of dairy architecture distinctively Californian.

It was to incorporate sanitation and convenience in buildings as cheap or cheaper than the old style combination hay and milking barn that the State Dairy Bureau, in co-operation with the University of California, the United States Department of Agriculture and various boards of health evolved the plans on this and other pages of this issue. These plans, as well as those of other more elaborate structures, are given in the biennial report of the State Dairy Bureau, recently issued, purely as suggestions to the intending builder and not required to comply with present laws.

MILKING BARN.

The top illustration on this page shows the interior of a milking barn for hot summers and windy winters. For very windy, dusty, or cold districts, or in sections where heavy rainfall is prevalent, the open space along the leeward side could be profitably windowed, instead of screened, as the plan calls for.

If windowed, it would be advisable to have them hinged from the bottom so that the fresh air circulates above rather than across the space occupied by the cows. There are several patented devices on the market for the opening and closing of windows by lever which are not expensive and which save much labor.

The outside wall on the leeward side is boarded up about four feet, or might be solid concrete that high and four inches thick. Below the plate the studding is covered with a 12-inch board. The remaining five feet is left open, but screened to keep out flies and chickens. The side toward prevailing winter winds is boarded up to afford shelter, with a window about 3x3 feet for every six feet of building. This gives about four square feet of light to each cow on the windward side. In some sections the screened opening might be left on both sides of the building.

Concrete Floor: The floor plan illustration shows but one of the two strings provided for in the above barn. The floor is of four-inch concrete, and provides for stalls three feet

wide. The concrete is made of a mixture of one part cement, two parts sand, and three parts broken stone. A slope of $\frac{1}{4}$ inch to each foot of floor will afford sufficient drainage. It would be well to have both the gutter and floor slope at the same pitch and in the same direction, rather than to lay the floor level and the gutter on an incline, as the latter method results in a deep, dangerous gutter at one end of the building. The floor may slope from the center toward each end, from each end toward the center, or from one end to the other. Either of the last mentioned ways simplifies drainage cost. The plan also provides for a slope from

both side walls to the gutter. The length of the stalls should depend upon the size of the cows to be milked; but 4 feet 8 inches will serve for smaller cows. A concrete manger two feet wide across the top would perhaps be better if oval shaped, as it would be more easily cleaned.

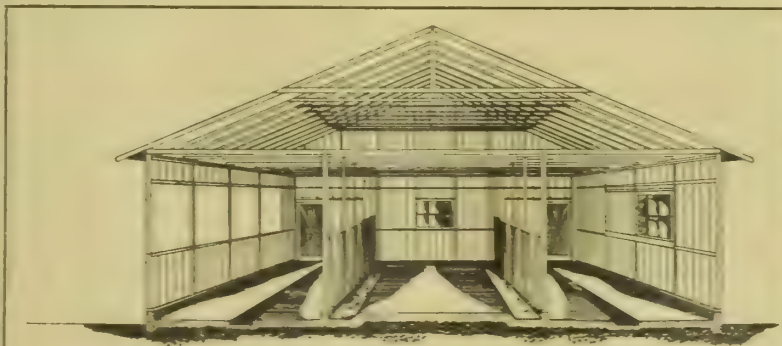
The width of the gutter should not be less than 14 inches nor more than 18 inches. The plan calls for a depth of three inches on the front side and one-half inch slope to the back side. This is an important detail, as it allows the liquids access to the sewer when the solids would otherwise obstruct the gutter. Where the barn is to house two strings like the one illustrated, the stanchions may either face the walls or each other, according to the preference of the builder.

In the erection of permanent dairy barns steel stanchions, manure and feed carriers should not be forgotten: for while they are still considered conveniences rather than necessities by some, all who have installed them praise their sanitary and labor saving features.

The plans herein shown provide space for these equipments; and the small additional expense incurred will be repaid many times in labor saved.

MILK ROOM.

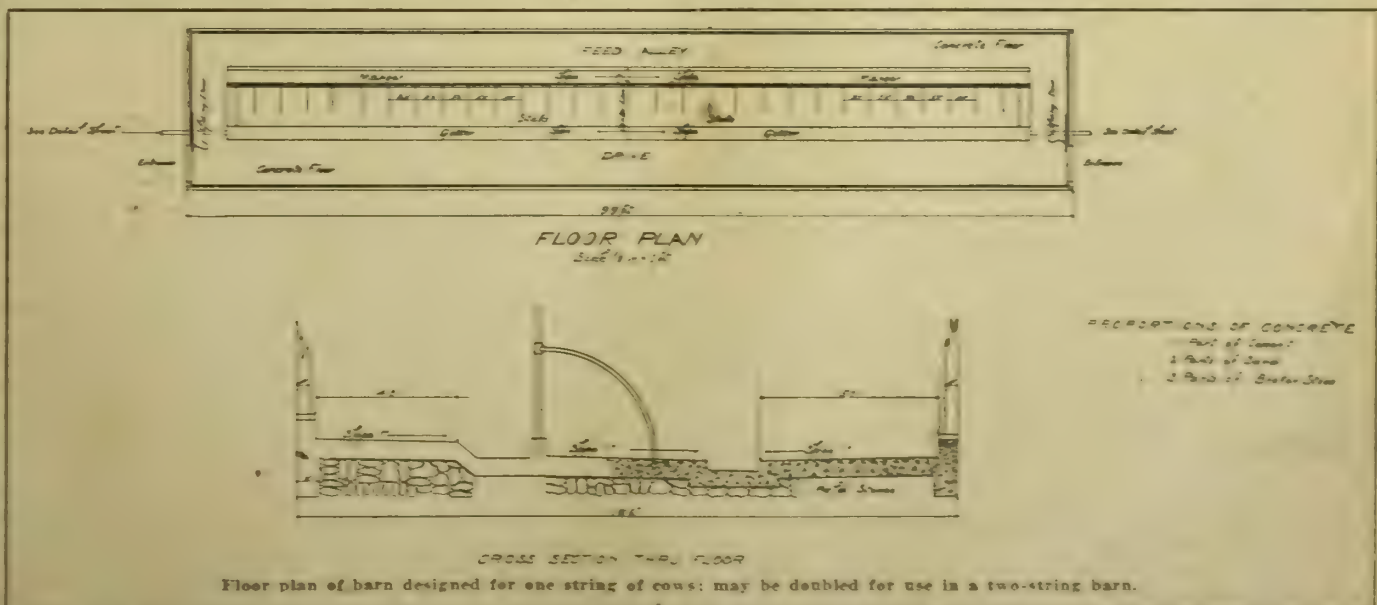
A milk room floor plan is shown on another page. This building has entrances on the north side, as not nearly so many flies will rest on the door and be admitted to the room as if it were on the south side. It is planned that the windows all be screened, and the window frames hinged on the bottom so they can be opened to afford ventilation by lowering the top of the sash into the room. This floor plan is prepared by the United States Department of Agriculture for coal burning boilers. In California our distillate fuel will be kept in a tank on a tower outside the building. A concrete floor slopes from all directions to an open drain provided in the milk room; and a sliding door might well separate the wash room from the separator room. Provision is made for pouring



PERSPECTIVE

Simple sanitary milking barn approved by State Dairy Bureau for two strings of cows

entrances on the north side, as not nearly so many flies will rest on the door and be admitted to the room as if it were on the south side. It is planned that the windows all be screened, and the window frames hinged on the bottom so they can be opened to afford ventilation by lowering the top of the sash into the room. This floor plan is prepared by the United States Department of Agriculture for coal burning boilers. In California our distillate fuel will be kept in a tank on a tower outside the building. A concrete floor slopes from all directions to an open drain provided in the milk room; and a sliding door might well separate the wash room from the separator room. Provision is made for pouring



Floor plan of barn designed for one string of cows; may be doubled for use in a two-string barn.

the milk from the outside through a metal container directly into a vat over the milk cooler or separator. If whole milk is to be sold, it may run directly over the aerator; but if the product is to be sold as butter fat, it should run into a metal vat located over the separator. In the latter case the aerator can be attached to the separator, only the cream being cooled.

The cement cooling tank can be profitably included, as it provides a cool place for storage of either cream or milk. Nothing is more imperative in the production of sanitary milk or cream than plenty of boil-

(Continued on page 594.)

PACIFIC RURAL PRESS

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ONE DOLLAR PER YEAR IN ADVANCE

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FRANK HONEYWELL - Publisher and Manager
W. H. SCHRAEDER - Advertising Manager
D. L. SCHRAEDER - Subscription Manager
B. E. HODGES - Assistant Editor
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EDITORIALS

WHEN WILL THE COWS COME HOME?

WE ARE not thinking chiefly of the end of the war, although the question does suggest that. The human mind is sorely distressed over the increasing tumult in world's affairs and dreams longingly of peace and quietude. Naturally such dreams most often carry the dreamer very far from current events and from present time and paint for his delight pictures of his childhood in peaceful rural scenes and of the quietest moment in such scenes—as the afterglow of summer sunset bathes the daisies and buttercups of country lanes in transcendent light and all sounds are for the moment hushed: "When the Cows Come Home"!

But though such a contrast between the normal and the present condition of human affairs is timely and impressive, we are, at the moment, thinking of the cow not as a movie star on a film of peace, but as a real actor and factor in the legitimate industrial drama which was established upon her functions and products, by the Scythians or by some other energetic and progressive peoples, before the dawn of history. And the thought is that, old as the dairy is as a human art and industry, and marvelous as its extensions and improvements upon primeval types have been, dairying is still the most plastic and expansible of our agricultural specialties and has potentiality for future development and human service which is not reduced, but apparently increased, by the fact that during the last half century the industry of the cow has lifted nations into prosperity; has given mankind some of the most impressive demonstrations of the power of co-operation for individual advancement; has shown most clearly the influence of science and invention in multiplying producing power; has erected new standards of commercial suitability and filled new arteries of international trade—and, having done all this within the easy memory of men now living, stands now in plain sight promising still greater achievements in the immediate future. When we ask then: "When will the cows come home?"—meaning the return of the industry to its old ideals of rural quiet and passivity—we have to answer that they never will come home: they will be ever moving toward richer pastures and greater service to mankind!

COWS IN CALIFORNIA.

WE ARE giving this issue largely to the dairy industry as pursued in this State—not trying to compass it at all, but merely to point out phases and features of up-to-date practices which may be suggestive to our readers of ways with cows which may help to secure ampler return from them for the labor and investment which are made to help them in their service to individuals who know and treat them well. We hope the effort we make to set forth helps to dairy producers in this issue will be instrumental in bringing out, in future issues, much more which will be influential toward the same end. And all readers of any dairy connection are cordially

invited to take part with us in the public-spirited effort to build the industrial service of the cow more broadly and firmly into the foundations of California's agricultural future.

To one who came to California forty-two years ago from central New York, the region which was at that time greatest in the dairy specialty of the country, one of the most gratifying reflections is the progress made in California dairying since 1875. Of cows kept on farms, and thus engaged in dairy products chiefly, apart from market milk, California had, in 1875, 340,000, worth \$10,944,105, while in 1915 her record was 568,000 cows, worth \$39,192,000. This increased value per cow involves improved quality in the cow and improved standing of milk production as a business—both of which are significant progressive points. Of the value of the State dairy output, the first report of the California Dairy Bureau, in 1906, estimated it at \$12,331,067, and the last report, in 1916, placed the value of products at \$40,310,105—which also involves two main factors, the increased production per cow and the improved selling prices of products. Since 1875, then, we have increased our cow-power about 67 per cent and increased the value of our output of dairy products 226 per cent. Rolled up somewhere in that bundle of thought-food are the reasons why dairying is now the most buoyant of our California agricultural specialties!

WHY THEY ARE COMING HOME.

"COMING HOME," in American agriculture, does not mean returning to the log cabins, sod houses, rough-lumber shacks and adobes of our fathers and grandfathers. It means going forward to the vine-clad cottages, bungalows, villas and rural mansions of our generation's achievements and in this direction our cows are leading us—not with jangling neck-bells but with the clear ringing of golden coins. And what are the local phases of preparedness for this forward movement? They include:

For the cow: Better breeding, feeding, care and shelter.

For the man: Better dairy science and practice.

For the industry: Better equipment, higher standards, wider markets and reasonable financing.

It aches us to preach from each of these texts, but it is fortunately not necessary. Each reader can look his neighbor in the face and bank-book; his neighbor's cow in the bag; his neighbor's farm in the pastures, corrals and buildings and preach his own sermon, from the "firstly, secondly and thirdly" which we have given him. To outline a general contrast between then and now we can perhaps help our younger brothers with illustrations. In 1875 there was but one cow-milking barn in the State and that not a very large one; there was but one silo, and that was a rough-board enclosure of a tank-frame which poisoned some horses with rotten silage: there was not a cream-separator, all cream was slapped from a pan with a stick, usually dirty: there was not a modern creamery in the State, though some ranch dairy-houses were creditable in their way: there was not a refrigerating outfit, though the mountain valleys had some natural-ice houses: there was not a power-churn in the modern sense, though a few bulls were hauling around sweeps: the only "dairy engine" was such a bull: there was no cream-ripening outfit, though there were cream-jars strong enough to drive a man out of a milk room; there was no dairy association, no dairy instruction, no dairy exchange: there were good dairy breeds but no definite dairy-breeding nor agreement upon points to be attained, nor exact measures of what constituted excellence: there were only a few alfalfa pastures along the Sacramento river and their product was condemned: the sorghums were a curiosity: the interior valleys were practically conceded to be unfit for dairying and the dairy hope of the State was grounded in the coast and mountain fringes. Capital for dairying was only to be had at rates which would make a pawnbroker's conscience turn over in its grave. Such, in the rough, was the dairy interest of California at that date, and yet there were groups of good dairymen who struggled against all these handicaps and produced

clean, delicious butter and made good money. It was in the achievements of these deep-seeing and energetic people that is to be found the foundation of the recognition of the dairy suitability and resources of California and they and their children have been among the leaders toward the revolution of ideals, equipments and practices which has made our present product worth forty millions a year—and more fast coming.

THE BARS ARE DOWN.

BY THE distressing contrast which we have suggested we do not design condemnation of the past, for it was up to its lights and powers, but exaltation of the present. And it does not devolve upon us to delineate the features of the present: they are set forth by our special writers in every issue of this journal, so that each reader can draw from them suggestions for his own work and progressive planning. The thing to be glad about now is that the bars are down and the way open to the attainment of California's great dairy endowment in favoring climate, rich pasture growths, abundant grains and large production of mill-feeds, full offerings of the most modern dairy equipments, large resources of the best dairy breeds of cattle, good supply of trained dairy operators, and that which makes all these concretely desirable, our unequalled dairy marketing opportunities. All these things make our dairying inviting and dependable. It has not been easy to get all these things: it has cost much money and many life-long efforts by Californians to throw down all the bars in the development of so great a dairy State in so short a time—but the way is now clear and that is one reason why we multiply our pages this week to give a field to those who offer the agencies by which California's great dairy future is to be attained. The State of California appreciates its dairy industry, safeguards and promotes its future by the operation of its Dairy Bureau, which contends for excellence to the purchaser and fairness to the producer and has been working for more than twenty years continuously toward these ends. The result of such prolonged praiseworthy effort by the State; by the breeders of world-beating dairy cattle; by producers, individually and co-operatively, under the leadership of the State Director of Markets; by the organization of the dairy trade to operate under the regulations for export and interstate commerce and by the thoroughly organized educational enterprise under the leadership of the University of California—is that California now has her dairy industry in a form to justify increased interest and investment by our own people and by those who know the dairy in other States and are now coming to begin their lives anew under the inviting conditions which California offers.

In the changes which have come in the development of the whole country, California will have in the future a clearer commercial field than in the past. Surpluses of dairy products which in the past have sought our markets will now find ampler outlets nearer their supply bases: with three million people, in the place of one million formerly, California has now a much more capacious home market and at the same time is finding a much wider export outlet. A great demand has developed in the Eastern States and in Europe, while the countries around the Pacific are disclosing each year a greater capacity for the consumption of dairy goods. All these things which were fondly dreamed of during the last two score years are now being realized. The bars are down!

KEEP OFF THE GRASS!

AFTER throwing down the bars, it may seem graceless to erect such a sign—but it is a kind of human nature. We remember that we cared little for the cows after we had pelted the last of the bunch through the bars to go up the lane, for we were legging it across the field to join the rest of the kids in the old swimming hole. And so now having let down the bars to greater dairy enterprise for California, we take a little dip on our own account. We were quite inclined at first to sympathize with the impatience of our esteemed friend of the Chronicle when he said: There has been quite enough exhortation of the

farmers to attend to their business. It is time to let the farmers alone and attend to our own business. There are two good reasons for that. In the first place, the farmers will pay no more attention to us than we should pay to them—which is none at all, except when we are running for office, and another reason why we should quiet down is that the more we yawp and hoard the higher the prices will go. There will be food enough and at reasonable prices if we will stop howling and go to work building ships, raising crops, developing water power, buying and selling merchandise, digging ditches or whatever belongs to the station in life "to which God has been pleased to call us," or to which we have attained by accident or otherwise. It is not even necessary to talk "economy." Prices will attend to that, and unless prices do the work it will not be done in any family.

This is the good old doctrine of sticking to your own job and probably it was never better stated, to keep people from busybodying, than it was by St. Paul when he said:

Having, then, gifts differing according to the grace that is given to us, whether prophecy, let us prophesy according to the proportion of faith; or ministry, let us wait on our ministering; or he that teacheth, on teaching; or he that exhorteth,

on exhortation. Be not wise in your own conceits.

We have been sorely tempted to break out, as our friend of the Chronicle has done, and give all these people who are so busy jawing the farmers, St. Paul for not minding their own business. We have, however, checked ourselves because there is really in the current publicity given to farming such a chance for demonstrating the farmer's true relation to the peace, prosperity and continued existence of the world! These patriotic and philanthropic busybodies have been giving it to the farmer in the neck for the last few weeks, but, as things look to us, every tap the farmer now gets in the neck will later land a dollar in his pocket and pull a tuxedo over his back. Really, the farmer does not much care what he gets in the neck, for he has been hammered on his cervical vertebrae for five or ten thousand years. Therefore we advise our dear contemporary of the Chronicle not to be peeved about what the farmer is now getting. A stiff neck will not bother him much if he can get his head and shoulders through the old crust of social and commercial discrimination and domination!

the men who actually did the farming could borrow money from the credit banks, because they could not understand what such people needed money for; it was the landlord who was apt to need money, because he had to furnish everything; if the tenant needed cash, he could get an advance from the landlord. Very much was said about the wonderful growth of co-operative credit banks and co-operative supply houses, but it all seemed to be co-operation among the higher-ups and not among small land-owners farming their own lands as the small farmers of the United States usually do. It, therefore, did not seem to be a scheme to enable people to own their own homes, but rather a scheme to help large owners to finance a community of tenant families and to increase their products. The only equivalent for ownership on the part of the actual farmer is the fact that these farming families hold the land for decades and for generations, the present tenant farming the land on shares, just as his father, grandfather, etc., had done before him. It is therefore a system of tenantry with a recognized tenure and this, of course, as compared with systems of brief tenantry, in which the tenant has no tenure and no motive for land and home improvement, may have, from the European point of view of landlord ownership, a certain degree of beneficence. It appears to us as, perhaps, a very good way to do a thing which should not be done at all, because it crushes aspiration for self-ownership.

By
the Editor

QUERIES AND REPLIES

Inquirer Must
Give Full Name
and Address

Spraying for Vine Hoppers.

To the Editor: What can be done to rid my vineyard of vine hoppers? We have been troubled with them the last two years, but they have not infested the vines so early before as this year. Am afraid they will ruin this year's crop.—C. J. T., Tudor.

When the hoppers have made the progress you note, nothing remains to be done but to spray the vines. The experiments made by Prof. Quayle, and published in University Experiment Station Circular 126, show that one pint of tobacco extract (40 per cent) and two pounds of hard soap (or two quarts of liquid soap) to 200 gallons of water is a good killer for vine hoppers before they get their wings. This spray must be shot with good force against the under sides of the leaves and a force pump and proper nozzle to do this are indispensable. It will not hurt the hoppers to shower the vines on the upper leaf surfaces. The proper spraying will not get all the hoppers, but it will reduce them to negligible numbers and avert serious injury.

Sulphuring Vines.

To the Editor: Is it the proper time for sulphuring grape vines? My Tokays have new shoots about 5 inches long and thick foliage. Is it any harm to sulphur when blooming? Does too much sulphur burn the berries? Is it better to apply sulphur by machine or by barley sack?—Subscriber, Mayhews.

The chief point is to get the sulphuring a little ahead of the growth affected by it. Where mildew is bad and always to be expected, sulphuring should be very early: some even believe in sulphuring the stump before the buds break. It should certainly be done on such growth as you describe—if experience shows that mildew is to be expected. Sulphuring when in bloom may be better avoided by working before and after. Too much sulphur is not dangerous, but is wasteful. It does not matter how you get the sulphur on, but if you have much to do, the machine is much better.

Cleaning Seeds.

To the Editor: Please tell the proper way to clean seeds that are covered with pulp, like tomatoes, gherkins, etc.—J. V. H., Los Gatos.

Let the fruits become soft ripe, and then squeeze out pulp and seeds into water, and wash them out by rubbing with the hands. If this does not work easily let the pulp ferment in the water and then the clean seeds will usually separate themselves and go to the bottom of the vessel. Such fermentation will not hurt the seeds. If you do not care to have the mess standing around for fermentation, a teaspoonful of caustic soda to the pail of water will make the washing easier and not injure the seeds. When clean, dry thoroughly in the sun before putting away, to prevent molding.

Bean Aphis Abundant.

To the Editor: I send you some branches of horse beans that are affected with some kind of lice. Kindly advise as soon as possible what to do for it. Upon investigation, I find nearly all the horse beans in this locality are affected the same way and nobody seems to know what to do. If something is not done I am of the opinion the beans of that variety will be a failure.—N. D. H., Freepoint.

It has been a very bad year for aphis or plant lice of all kinds. The continued cool weather and absence of hot dry winds have favored their multiplication, and the temperature-deficiency, which has prevailed for months, has probably delayed the development of their natural enemies. Plant lice, for instance, are bringing forth young freely during rainy-season temperatures, when lady birds are inactive. Plant lice can be killed by spraying with tobacco and soap washes and with emulsions, etc., but the practicability of the attempt is limited by the cost as compared with the value of the crop. For this reason such treatments are not undertaken with ordinary field crops. Beans would now justify expenditure which would usually not be warranted. That is a proposition which you must figure out for yourself. The chance is that the crop will not be hurt as much as now seems to be indicated.

The "Metairie" System of Tenantry.

To the Editor: Can you give information in your valuable journal about the system of tenancy of land called "Metairie"? There should be some good points in it or it would not have been so long in use in France and Italy.—J. P. D., Placerville.

The French terms "metairie" and "metayage" simply mean "farming on shares" or giving the landlord a part of the produce. There are many ways or systems of doing this. As practiced in Europe, there are good points about it if your purpose is to maintain for generations a class of dependent, docile and contented peasant tenantry, which never hopes to own the land nor to question the landlord's over-lordship. We saw it in operation in Tuscany, where, in the Florence region at least, it is so firmly rooted that no one seemed to expect anything else ever to exist. In Tuscany the greatest agricultural thing is the landlord, and he handles his land by subdivisions of different sizes, each farmed by a family of tenants—the size of the holding determined by the working force of the family. The landlord furnishes everything but labor, and the income from the crops is divided equally between the landlord and the working family, settlements being made usually once a year. The tenants do not expect to become proprietors; in fact, the experts who expounded the situation to us seemed surprised that such possibility should be mentioned. They were also surprised when asked if

Black Aphis on Almond.

To the Editor: I am sending an almond twig covered with some insect. I will appreciate any information you can give me regarding it. It is the first I have seen in my orchard, which has been free from all kinds of pests.—M. F., Parkfield.

It is the black aphis of the peach. When the almond is budded on the peach root this pest is sometimes carried in on this root, which it infests and in that case it may appear on the almond and plum, though it does not care much for those trees. Spray with tobacco wash and soak the ground around the main roots with the same wash, the same strength used in spraying the top.

Hollyhock Rust

To the Editor: My hollyhocks are turning yellow. On the lower leaves there is something that looks like rust. I have sprayed with whale oil soap, but it does not do any good. What can be done for it? Last year was the same, but it came later in the year.—M. H. S., Mountain View.

The disease is called hollyhock rust. It is the work of a fungus and is therefore not affected by whale oil soap, which is an insecticide. Help might be expected from spraying with the Bordeaux mixture with a nozzle to reach the under surfaces of the leaves, but not very satisfactory results are reported. Hollyhock experts say that more can be done by cutting off all leaves which show the pustules for about six weeks after growth starts and allowing only perfectly healthy leaves to grow. This reduces sources of infection and secures good foliage and flowers during the rest of the season.

Cow Peas for Hogs.

To the Editor: How do cow peas best benefit hogs, both for fattening and growing?—E. S. H., Burrel.

Cow peas as green forage and hay are comparable with alfalfa and produce similar service in growing pigs. Dry cow peas have a record much like that of corn for fattening hogs when fed separately, but a mixture of equal parts of both constitutes a better balanced ration and has secured a little better results in practice than either one by itself.

California Weather Record

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau at San Francisco for the week ending at 5 p. m., May 8, 1917:

Stations—	Rainfall Data.		Temperature	
	Past Week.	Seasonal To Date.	Normal To Date.	Max'm. Min'm.
Eureka .....	.20	30.42	43.23	64 42
Red Bluff	17.08	23.73	84 46
Sacramento	12.81	19.40	82 44
San Francisco	15.72	21.58	68 46
San Jose	12.40	16.24	72 38
Fresno	7.06	9.19	84 44
San Luis Obispo	22.54	19.87	78 42
Los Angeles	15.02	15.32	82 50
San Diego	9.78	9.73	80 50



The single bunch weighed seven pounds twelve ounces. The crop was 17,167 pounds of Thompson raisins from 736 vines. Courtesy Fowler Ensign.

Heavy Fowler Crop of Thompson.

[Written for Pacific Rural Press by H. H. Harding, Fresno County.]

Seven hundred and thirty-six Thompson vines eight years old, planted 10x10 feet or 435 per acre, produced 7,381 pounds of raisins for me in 1915 and 17,167 pounds of raisins in 1916. I also lost about a half ton during last fall's rains, owing to the bunches being so large that a great many rotted on the under side before I could get them turned over. Many of the bunches weighed five to eight pounds each and had very large berries. The bunches were so compacted that after the rain in August, it was necessary to pull off all of the leaves on the north side of the vines to let the wind in to dry the grapes or they would have molded. I sulphured every two weeks in May and June, after the new growth was about six inches long. I plowed twice, harrowed twice, suckered and hoed twice. This was all the cultivation they got, as they grew so fast I was unable to get into them with a team.

I did not thin out or pinch off the new shoots. The vines were not irrigated; and it is eight feet to

surface water. So heavy was the crop that it broke wires and even broke a great many stakes off two feet high. Canes too numerous to mention grew 35 feet long. I believe this pinching causes weak laterals to start out making the foliage too thick. A tree too thick will die out inside and what fruit may be inside does not ripen or color up as on the outside where it can get light and air. Why wouldn't it work the same on the vine? This has been my experience since 1884.

Some people thin out the laterals that have no bunches on them. I do not, as I believe they are there for a purpose (what, I can't say) but I believe they are there as a feeder of something in the air.

If you have soil adapted to Thompsons, you can, with proper care and cultivation, produce the crop without the pinching and thinning. If growers would take more pains in selecting fruit wood, and in proper pruning, instead of cutting and slashing any old way to get the brush off, they would have better results. Do not pinch and thin out

or summer-prune after the vine starts—let Nature take its course.

FEW CANES AT WINTER PRUNING.

I commence pruning about the middle of February, being very careful to select close-jointed canes if possible.

The vines are staked with six-foot stakes driven a foot into the ground. One wire is fastened on top of the stakes; the other is two feet lower.

The canes for the lower wire are brought, if possible, from the vine stump six inches above ground. For the upper wire, they come from the stump about three feet above ground.

In 1915, I left two canes on each wire from each side, a total of eight canes from each vine. The canes ran ten feet to the next vine, to bear fruit from vine to vine, filling up the space next to the stumps with fruit. I had lots of small bunches, also small berries, making 7381 pounds of raisins.

In 1916, I pruned the same way, only leaving four canes instead of eight, reaching from vine to vine. I found by so doing that every bud will start. If too many canes are left only about half of the buds start. It takes so much substance to support the extra canes that the grapes are smaller.

Why Do Grapes Not Set Fruit?

[Written for Pacific Rural Press.]

Non-setting of grapes was found to be due in many cases in San Joaquin county to a fungus, botrytis cinerea. Spraying with Bordeaux or atomic sulphur has seemed to produce results; but an inquiry addressed to County Horticultural Commissioner H. H. Ladd is answered thus:

"I find upon inquiry that botrytis cinerea was controlled by cutting back the affected parts to the stump; as it is seldom that you will find more than one or two limbs af-

fectured."

Non-setting is very often due to other causes than this fungus, one of the greatest of which in the southern San Joaquin Valley we believe to be too great water supply and stimulation of wood growth during blooming. Of course, spraying would not help this, but drainage would; and refraining from early spring irrigation would help still more easily. Try it on part of your vineyard if you don't believe it, and let us know your results.

Warts on Walnut Leaves

To the Editor: What is the cause of the roughened warty swellings on my walnut leaves, with white felty growth on the under sides of leaves at these spots?—L. B. J., Elk Grove.

It is the walnut blister mite,

often called erinose mite, which should have been sprayed with lime-sulphur just as the buds were opening. It is too late now; for the mites are well covered. The damage is not likely to be serious.

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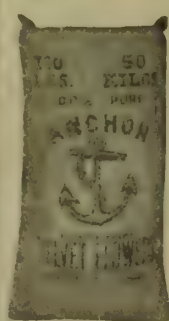
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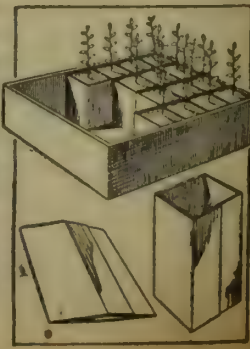
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Here and There in the Fruit Business

Thins Apricot Growth.

Where the new growth from winter pruning cuts on apricots is likely to shade the inside of the tree, it is all right to thin out the new growth in summer and give the rest a chance to develop fruit buds, according to Dave Porter of Kings County, who does more or less of summer thinning all the time. Young trees ought to be suckered as these useless shoots appear, because they would rob the parts that ought to have sap. Twice at least in the season, young trees ought to be systematically thinned out. Care is desirable not to open the trees too much to sunburn.

One season Mr. Porter cut off apricot tips right after the fruit was off in mid-July. Lateral shoots came out a foot long below the cuts, but did not make fruit buds, so he considered himself no farther ahead than if he had not induced these laterals, and the work was done for nothing. Fruit buds, according to Mr. Porter, begin to develop after the fruit is off. They form some on early growth of the present season, but mostly on the growth of the previous season.

Smyrna Figs Drop Unmatured.

To the Editor: We have some White Smyrna fig trees whose fruit grows to good size and then drops off without ripening.—F. M. B., Selby.

Smyrnas do not mature without being pollenized by special wasps which live from year to year in caprifigs. Plant caprifig trees nearby. Meanwhile, send to some of the Fresno nurserymen or to the Government plant garden at Loomis for caprifigs with wasps in them. Place several of these in a basket or can hung in each Smyrna tree. Do this when caprifigs are ripe in June and when the main Smyrna crop is about the size of marbles.

Nicotine for Codling Moth and Aphis.

That the codling moth can be controlled as effectually with nicotine sulphate as with arsenate of lead has again been demonstrated by F. E. DeSelle, horticultural agent, Yakima County, Wash. His experiments are told about in detail in his recent annual report.

"In comparing the results obtained from nicotine with those obtained from arsenate of lead it was found that on plots carefully sprayed at identically the same time and in the same manner with paste arsenate of lead at two pounds to 50 gallons of water, there was an average of 97.33 per cent clean fruit as against over 99 per cent for nicotine. Since all plots were located in the same orchard, only a short distance apart, and that the trees were of the same age and variety, it seems at least reasonable to believe that nicotine sulphate used at the rate of one to 800 is as efficient as arsenate of lead at the rate of two pounds to 50 gallons of water in the control of codling moth. In addition the nicotine possesses additional killing properties against sucking insects."

Mr. DeSelle found that it cost 68 cents per tree to spray with nicotine as against 41 cents to spray

with arsenate of lead, and concludes that "at the present prices for nicotine it would not be advisable to substitute nicotine sulphate for arsenate of lead in codling moth control alone, but where aphis and sucking insects are to be controlled the use of nicotine will result in a considerable saving." — The Fruit Grower.

Mice on Citrus Trees.

[Written for Pacific Rural Press.]

Last summer, Ventura citrus growers found the bases of many trees gnawed by field mice which nested in the mulches about them. It is well to keep mulches away from the trees; and to examine them occasionally, not only for mice, but for gum disease, etc. It was found that poisoned barley generally used for ground squirrels was effective on the mice.

Brown and Black Aphids on Peaches.

To the Editor: I am sending a peach twig covered with brownish plant lice, with a few black ones that have wings.—F. M. B., Hanford.

They are black peach aphids, which affect roots as well as tops. Get rid of them as quickly as you can, before they spread to other trees. Drench them with spray. Blackleaf 40, a pint per 200 gallons, with several pounds of common soap added to make it spread, is quite effective. In urgent cases, commercial distillate emulsion used strictly according to directions with a pint of blackleaf 40 per 200 gallons of spray mixture is more effective with the same carefulness of work. Repeat the spray a week later if live aphids are found, and again if necessary. Your chance to get all of them at one spray is nil. They are not likely to work on the tops after mid-summer, but go to the roots.

Apple Pointers.

In thinning apples, undesirable shapes and small apples should be removed because these retain their relative size and shape to maturity as observed by Prof. W. E. Whitehouse of the Oregon Agricultural College.

An even supply of moisture is needed by apple trees as judged by their habit of making steady gradual increase in size from beginning to maturity, a little faster in the later stages.

APPLE APHIS.

To the Editor: I am sending some young leaves from an apple spur, which are infested with both green and brownish plant lice.—F. E. W., Byron.

They are green and rosy apple aphids. Spray at once with blackleaf 40, one pound; dissolved soap, one gallon; and water, 198 gallons. Many will already be protected from any spray by curling the leaves. Distillate emulsion used at strengths recommended by manufacturers will be safe and effective.

Ground has been broken for the buildings of the F. E. Booth cannery, which is to be erected on a site of five acres owned by the company at Centerville.

Don't Let
Scale and
Fungus
Take
Your
Profits



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Exact scientific tests of years' duration on several thousand acres of orchard have conclusively proved that spraying with a COMBINED INSECTICIDE and FUNGICIDE of the Proper Chemicals is Feasible, Efficient, Profitable and Thoroughly Satisfactory.

Our book tells the proper kind of sprays and when to use them. Comprehensive tables show how much spray material is required per acre, no matter what formula is used.

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"The O'Connor prune orchard in the Santa Clara Valley was blasted in 1913," says the California Cultivator. "Its largest crop in six years was 3,900 pounds. After blasting the crop was 8,000 pounds—more than double—in a dry year. The prunes from the blasted orchard were much larger and the trees made a better growth." By using

GIANT FARM POWDERS
STUMPING — AGRICULTURAL

in your orchard you can increase your crop, add to the water-storage capacity of the soil, and enable the roots to feed on fresh plant food in the subsoil.

Hundreds of fruit growers in all Pacific Coast States plant their trees in beds made with Giant Farm Powders. They have found that trees in blasted ground grow faster, bear earlier and yield better than those planted the old way. They use the Giant Farm Powders because these powders loosen and powder the soil instead of packing it. Ask your dealer for either of the Giant Farm Powders—Eureka Stumping Powder or Giant Stumping Powder.

Free Book on Fruit Growing

Every fruit grower will find valuable information in the Giant book, "Better Orchard Tillage," written to suit Pacific Coast conditions. It tells and shows how to plant trees and subsoil orchards in the most effective way. This handsome illustrated book—or others—free. Mail the coupon.

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Blackberry Laterals Now for Next Crop

[Written for Pacific Rural Press.]

Begin this summer to get your next year's crop of Lawton blackberries. This is the practice around Sebastopol, Sonoma County. M. J. Moniz, for 21 years foreman of the Barlow ranch, points out that the more "side shoots" and laterals you get this year, the bigger main crop of berries you get next year. He gets the laterals by summer pruning. "A good Lawton cane should have six or seven side shoots; and each of them should have three or four laterals."

When quite a few of this year's canes get four to four and a half feet tall, Mr. Moniz cuts off their tips and they shortly begin to throw out "side shoots" or primary laterals. When a few of these are about 14 inches long and many other shoots are projecting above the fruit-bearing canes, the laterals are tipped and the shoots cut back to about four and a half feet tall. This will be early in July, about the time berry picking commences. It helps clear the way for pickers. At this time, too, the weaker shoots are taken out entirely; for only seven to nine shoots are to remain in each hill for next year's crop. Nine can be left profitably on good soil if their plumpness indicates vigor. If the canes generally are slender, fewer will be left. The summer pruning will help prevent growth of surplus canes which would have to be cut out in winter and would make

more of a mess to clear out, besides wasting the vine's energy.

At the third summer pruning, about August 1, remaining new shoots are tipped, and about a third of the length of the previously unpruned laterals is taken off. Whatever other pruning will be required is done after December 1, while vines are dormant.

In all the summer pruning, lower laterals are cut shorter than upper ones in order to permit closer cultivation in the following season.

NAPA FRUIT PLANTING.

Napa county has planted lots of prunes, pears, and cherries, according to a report of the past season's inspections by Horticultural Commissioner John J. Fox.

French prunes lead by far, with 94,148 trees on myrobalan, 5,000 on almond, and 1,895 on peach roots; Imperials, 23,237 on myrobalan and 1,000 on almond; Sugars, 8,708 on myrobalan and 1,500 on almond. Nearly 152,000 myrobalan seedlings were brought in. Over 28,000 pear and 2,000 apple trees were received, of which 13,505 were dipped in blackleaf 40 and soap 1 to 800 for insects. Japanese pear seedlings are the favorites, for 119,000 were imported for their blight- and aphid-resistant roots. Cherries numbered 13,626 besides over 10,000 Mazzard seedlings. Peaches numbered nearly 5,000, walnuts 1464, almonds 1,009, apricots 4,098, vines 43,643, and berries 12,130 plants. The stock was very free from pests and diseases, for only about 1,800 were condemned.

Army of Food Supply and Preservation

The nation has entered on a state of war. A great army is being raised.

Just as vital as an army is a universal enrollment of patriots for maintaining and increasing the food supply to feed our soldiers, our people, and our allies, a problem intensified by the exhaustion of surplus foods.

There are fields of honor behind the guns, where glory and distinction await our brave boys. But in this crisis we should not forget that the waving fields of wheat, the rustling leaves of the corn fields, and new acres of even the humble bean and the needful sorghums are likewise fields of honor.

The men, women, and children who stay at home, and through endeavor and sacrifice do their bit, are soldiers of the common good, fighting to win the war.

"More food, less waste," is the slogan. Who shall the soldiers be to follow this cry?

To raise more food there must be new workers on the soil. Farm workers are lacking. Who are to do the work? Who are to garner the crops now growing? Shall they be saved or lost?

I have a suggestion for the Council of Defense and for the State Board of Education: Boys and girls can help with many crops, and must help, or wind and weather will waste our crops as surely as would an enemy's armies.

It's no easy job to pick prunes, or pull beans, in the hot California sun. Yet, as our source of help, boys and girls and men who cannot be soldiers, and women who cannot be Red Cross nurses, can play an honorable part.

This service should be recompensed not merely by money, but by more. I say that every boy and girl who volunteers in the "Army of Food Supply" be now given a certificate of enlistment, and when vacation is over each one who has helped by giving twenty days or more to the Cause be given a Service Button, these to be given out when schools reopen, upon proper credentials by their teachers, the Council of Defense to arrange the rules and provide the buttons.

How many boys and girls would wear this emblem with pride! Not all can work in the fields. What can the others do?

We need an Army of Thrift. Was there ever more need of fighting waste? Children of all ages can help.

I would have every school boy and girl within the next month write a composition on "Fighting Waste." The school teachers can mobilize their minds and suggest ways and means of thrift. Every family that buys coffee and tea or beans in cans today, instead of in bulk, is wasting the tins that should be used for more necessary products. For there isn't enough tin to go round. Every boy or girl who can keep three or four hens or rabbits to use the garbage is helping feed his family and the nation. Every boy or girl who can raise a back yard garden is helping the nation.

I suggest that every child who shall report actual service in thrift be given, this fall, a button of the Junior Army of Thrift.

What family is there that would not feel the call, and fail to respond lest their boys and girls be thought slackers!

Martinez.

FRANK T. SWETT.

We are facing a world wide food shortage. For the sake of the hungry world as well as for the good of your bank account you ought to make every foot of your land produce its utmost. You can't possibly do this without fertilizing. Germany's crop failures for the past two years have been largely due to her inability to secure proper fertilizer materials.

GOLD BEAR FERTILIZERS

Are made from Animal products that contain the elements necessary to meet California soil conditions and crop requirements.



Remember that fertilizing is not an expense but an investment that will bring big, sure, and quick returns.

Let us help you make your land produce the biggest and best crops possible.

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WAR IS DECLARED

Maximum Crops are Needed.

Use **WESTROBAC** to
Inoculate your **BEANS** for larger crops.

WRITE US FOR PARTICULARS.

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63 miles from San Francisco in Contra Costa county.
1,000 Acres planted in Alfalfa.
For sale in tracts of 10 acres and up. Also first class orchard and general farming land. All under irrigation. One to three miles from railroad station.

Easy Terms of Payment.
For prices, etc., address
Balfour, Guthrie & Co.,
Land Department,
350 California St., San Francisco

In San Joaquin county, oats show 75 per cent normal crop, wheat 85 per cent and barley 60 per cent.

The Federal Farm Loan Bank of Berkeley, which began making loans to agricultural associations May 1, had applications for loans to a total of over \$15,000,000.

A million sheep and 250,000 head of cattle are to be permitted to graze in the forest reserves and national parks of the State all the summer

Kill the Bugs

Now is the time when plant lice and other pests breed most rapidly. As soon as they appear spray or dust with the proper insecticide. We carry a full line and shall be glad to advise what to use and we also have Spray Pumps for all purposes.

Morris & Snow Seed Co.

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FOR SALE
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FRESNO, CAL.

Box 302, E. R. B.,

season as a step in national food conservation.

Late or Early Cover Crop Plowing.

[Written for Pacific Rural Press by W. M. Mertz, Citrus Experiment Station, Riverside.]

The question of the time of plowing under a cover crop is still one on which there is a difference of opinion among growers. Some still believe in letting the cover crop become mature before turning it under, which means that it must be left until late April or early May. Where thorough irrigation can be given, a cover crop may be so left and still properly incorporate into the soil. There is no doubt but that a larger amount of organic matter is obtained by permitting the crop to mature than by plowing early in March. However, with a heavy cover crop you must consider not only the question of maintaining proper moisture content for plant feeding, but also the question of available plant food for the tree crop while the cover crop is still growing. As a general thing, with matured trees it seems unadvisable to permit the cover crop to grow long after the new growth on the trees has started out. I know of one instance in particular, where purple vetch was permitted to mature and where the water content was maintained satisfactorily, but where the trees became pale and yellow and showed every indication of starvation. A legume is frequently thought to have ability to add nitrogen to the soil while it is growing, but such, if it is the case, seems to be a small item with citrus trees. The greatest part of nitrogen contained in legumes is present in the tops; and until these are turned under and have decomposed, not only the nitrogen which has been added from the air but also a considerable amount that has been taken from the soil and held locked up in the plant tissue of the cover crop, is totally unavailable to the tree crop. With young trees, where only a small portion of the soil is occupied by their roots, the main bulk of the cover crop may be permitted to mature without in any way affecting the tree development. It is wise, however, to plow two or three furrows on both sides of the trees early in the spring in order that moisture and plant food may be supplied plentifully to the trees themselves.

SUMMER COVER CROP OF BEANS.

If the matured cover crop has been worked up in early May the land may be again planted to some other legume such as beans; and a summer crop grown and harvested

FLOW WALNUTS LATER THAN CITRUS.

The question of the time to plow under a cover crop with walnuts is one upon which I am unable to give any experimental data. The walnut, being a deciduous tree, starts in the spring on stored food so that it would seem that this tree would not necessarily begin drawing heavily on the soil as early as would the citrus tree. This would probably permit plowing somewhat later than we feel is the best practice with citrus. This is also a great importance in the case of walnuts because of the fact that it is necessary to sow the seed later in order to put the crop in after the walnuts are harvested. With citrus fruits, where more or less picking is going on during the winter months and in some cases orchard heating as well, it is seldom that the orchards are in fit shape to irrigate in the spring even though they were permanently furrowed in the fall. A great many orchardists have come to feel that a cover crop is a bad proposition solely because they waited too long before attempting to turn them under and with a very mediocre job of irrigation, felt it a very expensive and laborious task to get the ground worked up in the spring. In fact, this has been especially noticeable during the past two seasons, when spring rains have been absent. For this reason alone, it seems that it is not advisable to set a later date in the spring than will permit finishing the plowing of the orchard by the middle of March.

No Set Rule can be made for all conditions; and there are some sections where thorough irrigations can be given and where climatic conditions are such that trees start later in the spring where such a rule might work to the injury rather than to the benefit of the orchard, but as a general rule it would seem that the spring work could be materially benefitted by beginning earlier than is now being practiced.

BEE BEGINNERS MUST KEEP COOL.

[Written for Pacific Rural Press.]

We were invited one cold day to put a hand into a hive full of bees from which the super had just been removed after a light smoking, to see how much heat the bees generate and get advantage of in a good hive. It took some nerve at that time to do it, for at once the bees began crawling over the hand and one or two got on the back of our neck. The hive truly was warm, but gentle notions and an appearance of not being afraid prevented the bees from getting suddenly hot. Beginners with bees are prone to excite the insects by nervous motions, and then there is something doing. Every bee man must bear in mind: "Keep cool and your bees are most likely to keep cool."

One of the most interesting features of the Third Annual Butte County Spring Exposition to be held in Chico May 21 to 26 will be the Boys' High School Agricultural Club contests.

"The Schmeiser Way Makes the Farm Pay"



If you are paying more than 35c per ton for stacking your hay, you are losing money. You can stack it for less than that if you use the

SCHMEISER IMPROVED PORTABLE AUTOMATIC DERRICK,

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Stacks hay baled or loose, Saves Labor, Saves Time, Saves Money. More Schmeiser Portable Automatic Derricks are sold on the Pacific Coast than all other hay stackers combined. The reason is:

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NOTICE TO PACKERS.

Bids for the Crop Controlled by the Tulare County Canning Peach Growers' Association of the Visalia District.

This association offers for sale to the highest bidder 2,500 (two thousand five hundred) tons (estimated crop) of canning peaches, consisting of more clings than frees. Bids must be sealed and in the hands of the president of this association by May 15, 1917. The committee reserves the right to reject any or all bids.

TULARE COUNTY CANNING PEACH GROWERS' ASSOCIATION.

(Signed) W. A. Sims,
Farmersville, Cal. President.



The K-T Alfalfa System of Irrigation

In spite of the high prices and shortage of all manufacturing materials, we have a full supply of

Irrigation Appliances

on hand at convenient distributing points all over the Pacific Coast, and are prepared to make prompt deliveries throughout the season.

We are the pioneers in this business—equipped to make the best possible goods at a fair price. We make appliances for every kind of irrigation. The advice of our experts is yours for the asking. Write today for our booklet on Irrigation—or for any specific information you may require.

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"Originators of the Valve System of Irrigating"
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"THE BOSS" TREE PROTECTOR



Made of Yucca Palm.

Is cheap, durable and quickly put on the tree. It prevents rabbits from destroying your trees. A sure protection against frosts, sunburn, grasshoppers, or dry winds. Can be easily removed, will last for years. Send for samples.

Prices

	Per 1000
10 in. long, 7 in. wide	\$10.00
12 in. long, 7 in. wide	11.00
14 in. long, 7 in. wide	12.00
16 in. long, 7 in. wide	13.50
18 in. long, 7 in. wide	15.00
24 in. long, 7 in. wide	18.00
30 in. long, 7 in. wide	21.00

YUCCA MANUFACTURING CO.,
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Tree Protectors



That Really Protect

Quickly and easily put on. Will stay.

Fitted with galvanized wire ties.

If you want better protectors for less money write us for sample and prices.

Patent applied for.

Angelo & Son

Bay and Mason Sts.,
SAN FRANCISCO.

Los Angeles Will Have a Great Fair

[Written for Pacific Rural Press by Cuthbert Powell.]

The long-cherished hope of an old-fashioned agricultural and livestock fair in Los Angeles is at last to be realized. The State Legislature, just before its close, appropriated \$50,000 towards assisting its establishment, which assures its success. The city of Los Angeles and its business men will add greatly to this amount and

there will be ample room for all exhibits.

As an adjunct to the park there is a playground covering seven acres, where visitors can take their little ones to rest. There are also large picnic grounds, where visitors can eat their lunches. A more admirable location and prettier grounds cannot

nounced, yet it is understood that he will accept the appointment and that he will assume control of arrangements very shortly.

The time for holding the fair is set for October and will last thirty days. A week will be given to cattle, hogs and sheep, a week to horses and a week to poultry and pet stock, while

the nearby counties to draw exhibits from and the rich portion of the State a little to the north of us, which may be expected to lend a helping hand, Los Angeles enters the show business this year with the fondest hopes and feeling that its fair in future years will become one of the great annual events in the livestock



The above illustration shows the beautiful entrance to the Los Angeles Agricultural and Livestock Fair Grounds.

the premiums offered are expected to be generous ones and sufficient to draw liberal and handsome exhibits. While it is designed to bring together in exhibits and attractive displays the best in southern California, meritorious entries from elsewhere will be welcomed. Livestock of all kinds, field crops, fruits and vegetables, poultry and pet stock are all to be brought together and housed in buildings designed for their best display.

The fair is to be under the auspices of the District Fair Association and is to be held on the grounds of the Exposition Park, a beautiful park and expensive buildings owned by the state and county and representing an expenditure of \$2,400,000. The park contains 130 acres and is located at the intersection of Santa Barbara avenue and South Figueroa streets, within easy reach of the business section of the city. It can be reached by nine different electric car lines and there are in addition to these lines of travel excellent automobile boulevards reaching from all directions to the center of the Exposition grounds. These in themselves, with their flowers and shrubs, are worthy a visit.

Besides the state building, a two-story fireproof, tile-roof structure constructed of tapestry brick, trimmed with terra cotta, is the Los Angeles County Art and Museum building, another handsome fireproof structure, filled with art treasures and curios and the skeletons of wild animals native to California now and during prehistoric times.

The State Exposition building, in which the agricultural and horticultural exhibits are to be housed, is three hundred and twenty-five feet long by one hundred and thirty-five feet wide and has more than fifty thousand square feet of floor space, so

be found in the country. The people of Los Angeles appreciate the advantages thus possessed and are entering into the fair business with a determination to make the most of them and win success and permanently establish here in southern California one of the greatest annual fairs and livestock shows in the country.

Livestock will be the predominant feature of the fair. Liberal space will be given and appropriate buildings erected for the accommodation of the livestock exhibits. While cattle and horses will be the leading features of the livestock show, hogs, sheep and goats all will be provided for in the premium list, and an effort will be made to have full representations of all. It will be the only big livestock show ever held in southern California. While it will be primarily a California show, meritorious exhibits from outside the State will be accepted.

The fair association is headed by C. E. Miller of Los Angeles as president, and associated with him are one hundred and fifty of the most public-spirited men of southern California, who have agreed to give both time and money to make it a success. Premiums, while not yet agreed upon, it is said will be large and attractive, as ample money has been assured for prizes.

Every department will be under the superintendency of an expert. Livestock that will be especially featured is expected to be under the management and control of one of the best known cattle show men in the country—a man who has had years of experience in the caring for and management of livestock in the show ring and is popular both with the public and exhibitors. His appointment has not been officially an-

agricultural and horticultural exhibits will run through the life of the show.

It is being established along broad-gauged lines and will be an annual affair, and it is expected to be broadened out with each succeeding year.

With the Imperial Valley, with its big livestock interest and wonderful crop possibilities right at our doors, the great vegetable and fruit crops of

and agricultural world of the Pacific Coast.

The light showers in Southern California last week brought the rainfall of the season up to the following: Los Angeles, 15.65 inches; Redlands, 12.87 inches; Riverside, 8.85 inches; San Bernardino, 13.68 inches; and Santa Barbara, 22.46 inches.

The big feature in motoring. An all-refinery gasoline—not a mixture.

STANDARD OIL COMPANY (California)

BEAN THRESHERS THE TWO STANDARDS

Built Especially for California Conditions

THE FARQUHAR VIBRATOR SEPARATOR

Guaranteed by "The House of ARNOTT"
Ask The Grower Who Owns One
Write for Folder, Specifications, Prices Etc.

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Past the Experimental Stage
Eleven different models, with or without Engine, mounted complete
Ranging in Price from
\$210 to \$1,000
All Repair Parts Carried

THE AMERICAN

Vegetable and Field Crops.

[Written for Pacific Rural Press.]

More Land to Be Irrigated.

Over 300,000 acres will be added to the irrigated area in 1917 by 86 out of about 450 irrigation companies in the State according to Prof. Frank Adams to whom the 86 companies reported. If the other companies do proportionately, said he, 1,000,000 acres could be added to the irrigated area this year. The Railroad Commission is to issue permission to public utility water companies to furnish water free, or at reduced rates, to stimulate food production during the war.

Plant Lice on Vegetables.

Practically all plant lice on all common vegetables can be controlled by using the same spray. Whether it will pay to spray depends on the value of the crop. Twenty-five cents worth of blackleaf 40 will make six gallons of spray. A little soap added will make it spread better to lice protected by folded leaves, etc., but don't make the mixture sudsy. This strength will not hurt any garden vegetable or ordinary flower plant. Drench the plants to make sure the spray touches all lice, and repeat the spray a few days later.

Early Sown Grain Best.

Wheat and barley sowed last November on summer fallow in San Luis Obispo county, was reported May 3 by Benj. Quigley to be showing heads four inches long on plants over three feet high. Grain sowed in December is less than half a stand because there was not enough rain to prevent the ground baking; so plants could not come through. One field in finest kind of tilth has only one-third of a stand, now enormously stooled, because it was sowed late. Mr. Quigley has never lost by sowing early, for grain is harrowed with the spikes vertical any time after it is well up, until it begins to joint so it would break off. This keeps down the weeds and prevents the surface from crusting. It enables the grain to be planted before rains and to shoot up as soon as they come. The dragging does not injure even barley, the most shallow-rooted of the grains.

Artificially Ripened Onions.

Last summer some San Joaquin onion growers got onions for early shipment and high prices by smashing down the tops to check growth for a few days, then digging the onions and allowing them to dry in the field a day or two, covering them with the tops to prevent sunburn. They thought they were getting high prices at \$2 per sack.

Poison Celery Spray.

Bordeaux spray must be applied to prevent celery blight; but if carelessly applied, is likely to leave enough copper in the bunches to be injurious to health and to get Uncle Sam on your back. Spraying with too little pressure results in the spray running in streams down to the base of the stalks, where it dries leaving a greenish color. Spraying with a mist nozzle and 150 pounds or more of pressure makes a fog which settles on the plants without running down. Washing the stalks

carefully before eating removes the poisonous copper.

Sweet Potatoes.

To the Editor: I have ten acres in San Bernardino County suitable for sweet potatoes. Where can good plants be obtained? Which are the best varieties to plant for market? What is the best way to plant, on ridges or level?—W. A. D., Los Angeles.

California Sweets are standard and may be obtained from your local seed companies or raised from sweet potatoes bedded in sand. See our issues of March 24 and 31. Plant with a sweet potato planter on ridges so irrigation water will not touch the young plants.

Hubbard Squashes.

Answering a subscriber's query, a reliable commission man gives his opinion that Hubbard squashes ought to be at least double the usual price during the coming year. They are usually sold between November 15 and January 1 at one to 1½ cents per pound. They are worth now up to four cents per pound. Many Hubbards are shipped to the North-

ern Pacific States, and this demand is a strong factor in prices. How to preserve Hubbards for spring prices will be told in Pacific Rural Press in time to make the preparations.

Alternate Early and Late Peas.

In planting early and late peas, put them in alternate rows, not over a foot apart. They will not crowd each other seriously until the early peas are out of the way, when the late peas will have double space.

Transplant Thinned-Out Vegetables.

Where seeds of beets, onions, lettuce, etc., have germinated so well that the stand is too thick, thin out, leaving the strongest plants spaced if possible to allow them to grow just the size desired, then transplant the others. You may find the transplants ahead of the others within a few weeks. It is claimed that they make better, more compact root systems. But fleshy-rooted vegetables may go to seed if transplanted after making considerable growth.

Stake Garden Tomatoes.

Space for tomatoes will be saved, less fruit will rot or become distorted or diseased, and cultivation will be made easier by staking tomato plants and pruning off all but the central leader until it is four feet tall.

He'll Make You Poor — KILL HIM

What is the use of preparing a good seed bed and planting seed that cost good money if you let squirrels and gophers eat your profits. These pests are a constant danger to crops and a constant menace to the family's health.

Carbon Bisulphide

has for over 30 years proven to be the most effective—the only sure killer of squirrels, gophers, rats, prairie dogs, ants, moles, yellow jackets, moths, weevils, lice, etc. It is easy and safe to use.

Write today for interesting folder and learn how this profit saver works.

Wheeler, Reynolds & Stauffer
624 California St.

San Francisco

California



These Redwood frame dwellings, at 20th and Mission Streets, were scorched, but refused to burn, thus preventing a further spread of the big San Francisco conflagration of 1906. The telephone poles are also Redwood.

The safest wood you can use

Uncle Sam says, in the United States Forest Service Circular No. 193:

"Redwood resists fire well, and even when ignited burns very slowly. It checks but little when exposed to the sun, and is practically free from resin. These properties make it especially suitable for use in buildings."

Chief Engineer P. H. Shaughnessy of the San Francisco Fire Dept., after 22 years' experience with Redwood, including the big fire of 1906, said:

"ignites much less quickly" — "burns much more slowly" — "more easily extinguished."

Sounds like the kind of wood you should use for the new home, doesn't it?

Especially when you add that it *resists rot, will not shrink or warp*, is light in weight, easily worked and suitable for every inside and outside use except fine floors.

California Redwood

Resists fire and rot

Ask for "A Test by Fire" and "California Redwood on the Farm." They're free. We will appreciate receiving the names of your architect, builder and local retail lumber dealer.

CALIFORNIA REDWOOD ASSOCIATION
772 New Call Building, San Francisco

Ask for the Child's Story of the "Big Trees" of California—there's a copy for every child in the nation

Railroad Preparing to Move Crops.

[Written for Pacific Rural Press.]

In our article of last week, regarding the prospects of getting California fruit to Eastern markets, we noted that the question would not this year be one of refrigerator car shortage, but there might be a lack of motive power. We now learn that the Southern Pacific Co. has placed an order for 11 additional locomotives for delivery in time for crop movement. The engines will be the largest on the system except the huge mallets which are really combinations of two engines. These locomotives will cost \$50,000 each, an increase of 50 per cent over the 1913 prices.

The Pacific Fruit Express, which furnishes refrigerator cars to all California interstate railways except the Santa Fe, is building 2,700 new cars which will be completed as soon as possible in view of difficulty in getting material. The Pacific Fruit Express already has a total of about 15,500 cars. The Southern Pacific is building 2,950 other freight cars to relieve any possible shortage. Their trouble is to get their cars back after sending them east with loads. The Western Pacific is building 200 ventilated boxcars for local shipments of perishables. They and the Salt Lake use Pacific Fruit Express cars for refrigerated shipments. The Santa Fe, which has its own refrigerator car line, is building 850 new cars to add to their total of over 9,000; but the new ones are not likely to be ready in time for our early fruit crops.

DEMURRAGE.

The railroads generally feel that

they have enough rolling stock to care for all demands, provided cars are not used as warehouses. They urge shippers here and receivers East to load and unload promptly to avoid car shortage. To help this movement in the East, on May 1 demurrage rates were raised 100 per cent, to \$2 per day, after the first 48 hours, for four days, and \$5 a day thereafter until unloaded. In California the old rates are likely to continue \$3 per day after 48 hours from the time cars are spotted for loading or unloading. Cars in transit can be held only 24 hours free for additional loading.

INCREASED 1½ TONS PER ACRE.

[Written for Pacific Rural Press.]

Stable manure made about 1½ tons difference per acre in the yield of dwarf milo planted last May by M. M. Sweeney of Imperial County.

"My neighbors gave me all the stable manure I wanted. On one stretch I piled it about three inches deep and plowed it under about April 1. I planted about two pounds per acre with a corn planter, putting it about two inches deep and in rows 36 inches apart. I irrigated at once, and twice later. I cut it short in the middle of July, when it was about seven feet tall, and took off 2½ tons per acre. The stubs grew again till about three feet tall; then I pastured that," says Mr. Sweeney.

"The part where I didn't fertilize produced only one ton per acre and grew only 3½ feet tall. It headed out 10 days later and the seed was not so fat as on the fertilized milo."

GIFFORD PINCHOT SEES THE FARMERS' DUTY.

To the Editor: In this great time, when every citizen must do his part, the President has made his chief appeal to the men who live on the land. He is right in doing so, for the safety of our country just now is in the hands of our farmers. The safety of the United States against foreign invasion hangs on the decision of the farmers of the forty-eight States.

The two great weapons in this war are arms and starvation. The war against German arms will be won or lost in France—the war against starvation will be won or lost in America. The Kaiser cannot whip the French and English armies and the English navy while England has food. But it is still possible that the German submarines may be able to keep food enough from reaching England to starve her into submission.

If the submarines win, the first item in the Kaiser's terms of peace will be the English fleet. With the English fleet in his possession, the Kaiser will be master of the world.

What will happen to us then? Every man who stops to think knows the answer. We shall have money, food, labor, land—everything that is desirable in the world except the power to protect what we have. Experts estimate that it will take us nine months to get ready to meet a German army of even 150,000 men, with modern artillery. Under such circumstances, would the Germans treat us better than they have already treated Belgium and France?

Even if the armies of our Allies should crush the German military power this summer, before the shortage of food can reach the point of want, the world would still need vast quantities of American food. But if they do not, only one course can make us safe, and that is to grow food enough on our farms for ourselves and our Allies, and to put ships enough on the sea to carry the food, in spite of the submarines, to the men who are fighting our fight.

If the war lasts beyond this summer, it will be the American farmer who will win or lose the war, who will overcome militarism and autocracy, or allow them to spread and control the world, ourselves included.

This is no fanciful picture, but sober fact. Many a man will make light of it until he comes to think it over, but I venture to say that few will treat it lightly after careful thought. It is no more impossible than the great war itself appeared to be, only a few days before it began.

It is true that we can greatly increase the available food supply out of grain now used in making liquors, and by reducing household waste. But when these two things are done, and done thoroughly, they will not be enough. The final decision will still rest in the hands of the men who raise our food in the first place.

The clear duty of the nation is to guarantee the farmers a fair price for their crops when grown, and a reasonable supply of labor at harvest. The clear duty of the farmer is to raise food enough to win this war for democracy against Kaiserism.

No such responsibility has ever rested on any class of men since the world began as rests today on the farmers of America.

Milford, Pa.

GIFFORD PINCHOT.

"HEADQUARTERS" FOR WOOD PIPE AND TANKS

TANKS

WINE TANKS

FERMENTING TANKS

WATER TANKS

OIL TANKS

PIPE

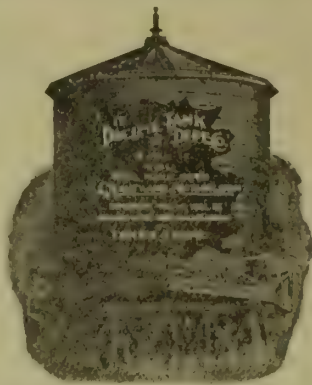
WOOD STAVE PIPE

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19 Trust and Savings Bldg.,
LOS ANGELES, CAL.

LET THIS ENGINE REDUCE YOUR HIGH COST OF LABOR



The only way for a farmer to keep up with the always increasing cost of doing business, is to take advantage of the many MECHANICAL AIDS now provided for his benefit. In fact, no farmer who wants to do the most work in the most economical way can afford to be without a

FULLER & JOHNSON TYPE "N" GASOLINE ENGINE

To supply CHEAP POWER for operating an Alfalfa Cutter, Cream Separator, Churn, Corn Sheller, Electric Dynamo, Feed Grinder, Grind Stone, Ice Cream Freezer, PUMP, Spray Pump, Washing Machine, Wood Saw, or ANY FARM MACHINE equipped for power-drive this engine is a NECESSITY.

THE FULLER & JOHNSON TYPE "N" ENGINE is different from most engines. 1st—It is the product of 13 years of business and manufacturing experience, backed up with a world-wide reputation for QUALITY; 2nd—It is made in modern shops equipped with the finest machinery, by unusually high-class mechanics; 3rd—IT COMBINES THE GOOD POINTS OF HIGH PRICE ENGINES IN DESIGN, MATERIALS AND WORKMANSHIP—all the latest improvements—yet sells for a surprisingly low price; 4th—It is very, very simple, has few parts, is easy to start and run—by anyone; 5th—It has only one-fourth the weight of engines made from antiquated patterns—so it is more easily portable; 6th—It has "make-and-break" ignition, a "hit-and-miss" governor that keeps speed constant and permits it to use very little fuel; 7th—It operates on the superior 3-cycle principle and cools itself perfectly; 8th—It runs equally well on gasoline or engine distillate.

The work the different sizes of this wonderful engine will do for you and the amount of money it will save will surprise you. You CAN'T AFFORD to be without it.

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For our fine illustrated catalog and price list. Clip out and send in this coupon to save time.

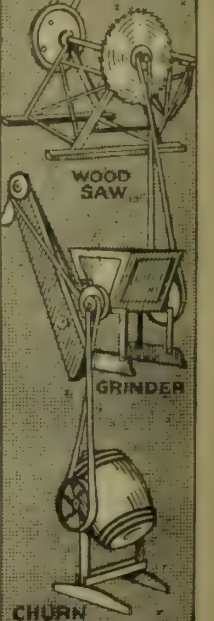
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Send me full information about your Fuller & Johnson Type "N" Engine at once.

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Plant Your POTATO Land
When Crop is off to

RHUBARB

If planted then you can expect BIG PROFITS by fall or early winter.

OTHERS MAKING \$1,000 PER ACRE ANNUALLY—SO CAN YOU. Don't put it off any longer. April-May-June positively best months to plant. WRITE

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THE AUTO-FEDDER Means One Less Man

Three Stroke - Great Capacity - Self Feed - No Danger - Smoothest Belts - Easily Moved - and Set - Extra Power - Simple - Durable - Guaranteed - Sold on Easy Payments CATALOG FREE

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Especially Strong for Alfalfa - Feed Hopper only 39 inches from ground - Largest Feed Opening

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BEES GOOD INVESTMENT.

For capital invested and labor required, bees are far the greatest money-makers one can keep on the farm, says Francis Jager of University Farm, St. Paul. One hundred pounds is a fair average production under good management of the bee yard. At this rate 100 hives would produce 10,000 pounds of honey in one year. This, at 10 cents a pound, would give a return of \$1,000 for one year.

None of this has to be used to pay for feed for the bees; for all their food and honey come from the flowers of the roadsides, woods, and meadows. Little or no rent is required for the land, for the bee-hives can be placed along roadsides and in meadows where the bees have food at their very doors.

If a yard is needed for the bees a quarter of an acre is more than enough for 100 hives. This should cost \$1.50 as rent.

The only large expense is for equipment such as hives and supers, and this equipment will last a life-time. It can be supplied for \$300. This means a yearly charge of only about \$15. The bees can be obtained free by catching swarms in summer. Then by the use of purebred Italian queens, obtainable at the University Farm for 50 cents each, these swarms can be multiplied into a purebred apiary. The total annual cost of the bees for one year, then, is less than \$20, exclusive of labor.

SEPARATING MOLDY GYP.

[Written for Pacific Rural Press.]

When grains of all kinds are high the hog feeder is faced with the problem of utilizing those grains which are unsuited for other purposes, and which are as a consequence selling below their market value. When we visited the ranch of A. M. Bibens of Stanislaus County this spring he was finishing a bunch of market hogs on Egyptian corn that he had secured below the market because it was harvested late and was rather moldy as a result.

To separate the good corn from the poor before feeding, he was soaking it in a tub of water for about two days before feeding, the moldy corn coming to the top in that time so that it could be skimmed off and thrown away. This occasioned only a slight loss in pounds of corn thrown out and insured good clean grain for the hogs.

FOR EXCHANGE

6-room house; good basement; bathroom; barn; shed; chicken houses; chicken yards all fenced; rabbit houses; rabbit pens all fenced; very large yard; marine view; in East Oakland, one and one-half blocks from car.

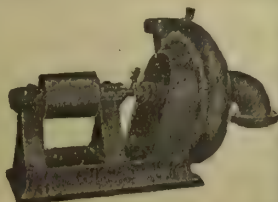
Will trade for ranch properties.

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Pipe, Pipe Fittings, Brass Goods, Tanks, Wind Mills.

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OVERALLS
HAVE
Wide Cut Legs



Boss of the Road Union-Made Overalls have wide cut legs, making them always easy and comfortable over woolen pants. Look for the Bull Dog on the label. He is your guarantee of A-1 materials, A-1 workmanship, A-1 cut.

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REDWOOD TANKS.

35 years in this business. I sell direct to the consumer. You act as your own agent and save 20 per cent. Tanks from 300 gallons to 10,000 gallons in stock. A stock tank 6x2 ft., \$10. Reference: Farmers and Merchants Bank of Stockton. Phone 2957.

R. F. WILSON, Stockton, Cal.



KILLEFER
QUALITY

Model Bean



KILLEFER
EFFICIENCY

Cultivator



This Cultivator, like most of our implements, has been developed at the request of Dealers and Ranchers for a strong, simply controlled cultivator, capable of doing their work deeper and better than possible with the light Eastern-made tools. The frame is one piece of high carbon steel without joints to work loose or sag and holds the wheels always true and in line with the rest of the machine. The double frame bar gives ample clearance between the standards and eliminates the tendency to clog in trashy ground. This frame bar has a double lifting device which holds it rigidly on both sides. A man's weight on the extreme end will not spring it out of line. The seat is set far enough back to give an unobstructed view of the rows and the foot control is very easy on the driver.

An important item for the Bean Growers' consideration is that all parts and repairs are easily and quickly obtained without the delay of sending East for them.

Place Your Order Early.

There will be a shortage in the supply of
BEAN Tools this year.

The Killefer Manufacturing Co.

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LOS ANGELES, CAL.

The KROGH Vertical Pumps



New Type Vertical

Are automatically water balanced and require no adjustment of any kind. All weights of shafting and rotating parts are carried on the water film absolutely without the use of thrust bearings or adjustment of any kind.

No BALANCE RINGS or PLATES in KROGH PUMPS. They are unnecessary, and mean only continual trouble. KROGH PUMPS with the least number of parts means less friction and greater efficiency. Get our Bulletin No. 78 before deciding on a pump.

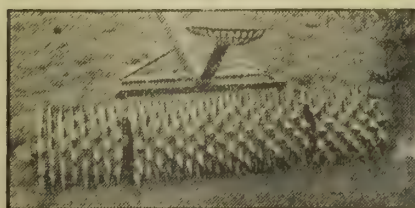


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The Cunningham Land Roller and Pulverizer



Makes a Perfect Seed Bed—Stops Evaporation—Preserves Moisture—The Best Clod Crusher ever made for Farmer, Orchardist, Vineyardist, Nurseryman and Seedsman—

Made in All Sizes
Write for Circular

Manufactured and Sold Exclusively by

SPALDING - ROBBINS DISC PLOW CO.

625 Market Street, SAN FRANCISCO

City Folks, Get Busy or Starve!

[From address by Albert Lindley at California Development Board Meeting, Stockton.]

You from the city now say to us farmers: "Go work," but you give us nought with which to work, in extensions, reductions, machinery, or labor to encourage our increased endeavor. You seem to forget that the average frugal, industrious farmer cultivates every foot of good ground he can buy or rent that it is possible for him to get the money or labor to properly handle. Still, farmers are not going to allow themselves to be carried into wild farming, or wild finance by pleas or propagandas that advocate increased acreage, out of season planting, expensive improved machinery and experimentation in untried crops without being shown where in thrift and sound business policy the same may be undertaken with reasonable prospect of success.

GOVERNMENT FARMING.

A newspaper clipping tells a plan which I propose:

"Albert Lindley, who owns and farms the major part of Rough and Ready Island, has offered to undertake the farming of a thousand acres of land in California, the product of which shall go to the army, navy and the allies. He has further agreed to undertake to secure the services of a hundred other successful farmers on the Pacific Coast as volunteer supervisors of farming operations on tracts of similar area.

"Lindley has even gone a step further than this, and, pointing out that there are 12,000,000 acres of farming land in California now lying idle, he has volunteered his services in securing the land for this purpose by arranging to have large landholders of California lend to the government portions of their lands in tracts of substantial size. This plan comprehends the provision by the government of all necessary implements, stock and seed, and that the entire cost of operation will be borne by the government under the supervision of the Department of Agriculture."

Get real farmers together, furnish them the land and a tractor, horses and tools, stand behind them with money and labor and our country and our allies will be fed and fed from the first crop that the land and the locality is adapted to produce.

MESSAGE TO THE CITY.

For the farmers I would like to send this message to the people of the city: "Don't waste your time worrying about whether we farmers will feed you and them, but get busy, do something, make some sacrifice yourself."

We ask the banker, the labor leader, lawyer, merchant, doctor, and commission man what, if anything, you are doing for your country, or what you will do for the farmer if he meets disaster through allowing himself to be exploited by you beyond his sound business judgment on the plea of patriotism.

Mr. Banker, your stock is quoted at fabulous prices and earning 20 per cent. Will you reduce our interest, or extend us more credit should we jeopardize our life's work that we may produce more food products for our army and navy that protect your securities?

Our government has most properly arranged to loan our allies three billion dollars at three and one-half per cent with little or no security. Are you going to hold us at seven and still demand security that would be accepted by a Kearny street pawn broker, while at the same time asking us to speed up our farming be-

yond our conservative judgment?

If the war should suddenly cease and prices drop or crops fail, are you patriotically coming to our aid and extend our time or pass our interest?

DEPENDABLE LABOR.

Mr. Labor Leader, you ask us to plant more crops, for our country's sake, and for the sake of the stalwart men you represent, that we may compete with ourselves by lowering the price of food stuffs, and all this, when we have a big, live mortgage on our farm that by years of economy and hard labor we have never been able to reduce, much less liquidate. What are you doing to help us with labor? We pay two-fifty a day for unskilled labor that has but little or no expense to meet. Yet, we can find few dependable white men to work the land we now farm, and by reason of your efforts we have laws that prevent us getting outside labor. We don't want Japanese, Chinese, Hindus, nor aliens of any other country, and I don't make a practice of employing Asiatics on the Lindley farms. We want English-speaking white men who can be made to understand our wishes, and do intelligently what they are set to do. But we can't get them, and what we generally get are floaters that know nothing of farming or stock.

Give us decent, dependable labor, not loafers, as the larger part of those who now offer us their services are. Solve that question, Mr. Labor Leader, and we farmers will solve for you and your people the question of shortage of food products and the high cost of living. With us the question is not what we pay for labor, but what we don't get for the money we pay. Do you get that?

One prime reason for the scarcity of food products and consequent high prices is, we cannot get enough honest, industrious, dependable labor, white or Asiatic to properly care for the land we now farm, and the crops and stock we now raise. You can have your choice: Continue to pay high and still higher prices for food. Furnish us with more and better white labor that we may, with safety farm more land. Or the hungry people will open the doors to Chinese and Japanese, now practically our allies, as a war necessity.

PREVENT SPECULATION.

Mr. Merchant, if in the late raise of six dollars on hay rakes and other implements in proportion, are you trying to increase the food supply and decrease the cost of living? Does the fact that in Europe they are using but few hay rakes tend to increase the demand and raise the price just before our harvest season? Are you, Mr. Merchant, one of the patriots that is urging the farmer to plant greater acreage?

FAIR LAWS NEEDED.


We ask our statesmen, how you discovered the rabbits that eat our crops needed protection. Yet you have never been able to discover a cure for the deplorable fact that the consumer in Stockton often pays over one hundred per cent more for my products than I get for them four miles from town.

Have you ever tried real hard, Mr. Statesman, to find the bug in the commission business. I don't mean sure enough commission men so

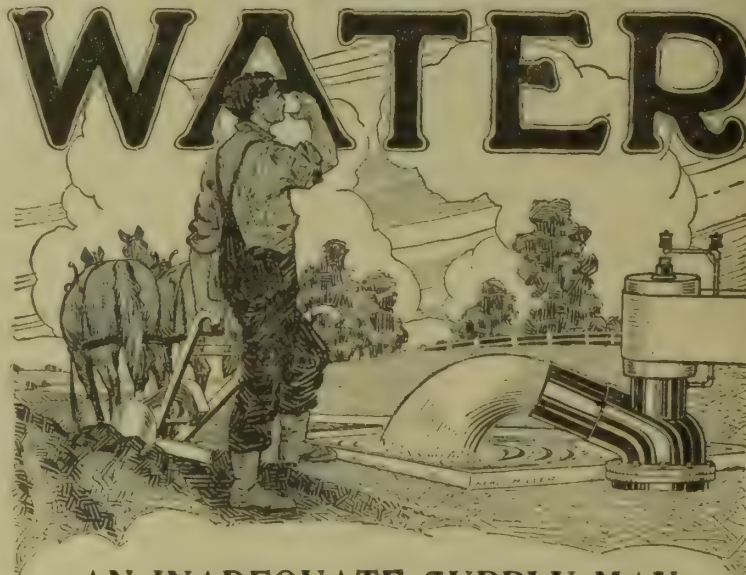
much as I do the commission men who do business alone on warehouse receipts, the gambler who never takes a chance. Look him up, Mr. Statesman, if you want to loosen up and lessen the price of some of the food products.

Mr. Statesman, while devising ways to increase the food supply, stop and ponder over the result of the laws you have placed on the statute books in past years, to curry fa-

vor with the anti-railway populace that you might be perpetuated in office. Centralize your power of regulation and give railways definite



CHUBBUCK'S IDEAL GOPHER TRAP
Larger than runway: jaws pull rodent in: catches large or small gopher and holds it. Farmers say it's worth dozen other makes. Big sales. Price 50c. If not at your dealer's write and send 2 to you postpaid; 2 for 95c; 6 for \$2.50. 12 for \$5.00. Money back if you are not satisfied. See catalogue. E. J. Chubbuck Co., Dept. B, San Francisco, Cal.



AN INADEQUATE SUPPLY MAY RUIN YOUR VALUABLE CROPS

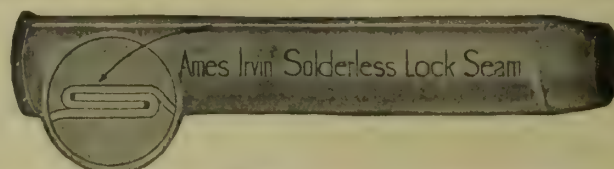
Uncle Sam depends upon YOU to do your utmost in producing the largest crops possible. Prices will be higher this year than ever before in the history of the country. It is your duty to be prepared. Take no chances of ruining your crops because of an inadequate water supply. Install the Layne & Bowler Pump and be absolutely assured of success. Our Catalog No. 25 gives full details. Yours for the asking.

LAYNE & BOWLER CORPORATION

900 Santa Fe Avenue

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WHAT ABOUT YOUR IRRIGATION PIPE?



Owing to conditions existing in the iron market and also to weather conditions, we suggest you order early.

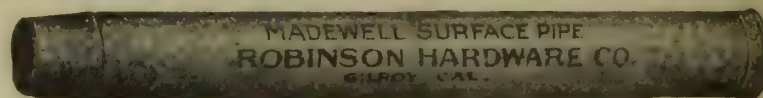
AMES IRVIN IRRIGATED PIPE.

We have a complete stock, and can make immediate delivery. AMES IRVIN PIPE is solid and strong, with no holes in steel. Each sheet is edged-locked together, and then set down under 3500 pounds pressure. Such seams will not break or leak. Send for booklet giving complete information about Irrigation Pipe and its construction. Get it today.

AMES IRVIN COMPANY

8th and Irwin Street,

San Francisco



Lock Seamed and Soldered

There is a tremendous difference in surface pipe. This is appreciated most by the man who has wasted time and money on inferior makes. If you want absolutely the strongest and best surface pipe you can buy, select

Madewell Surface Pipe

It has many distinctive important advantages you can't afford to overlook. The Madewell Long Lock Seam is made doubly sure and strong by soldering the entire length. A better seam can't be made. The Madewell Lock Seam Sleeve—used in Madewell pipe only—is decidedly stronger and smoother than the old fashioned lap and riveted seam used in other pipe. This feature alone puts Madewell Pipe in a class by itself.

Send for Free Booklet—which tells just how Madewell Pipe is constructed

Robinson Hardware Co.

Box B.

Gilroy, Cal.

laws that will cover a period of years and they will extend their lines into rich and productive territory that will at once be settled and cultivated by the farmer. It is a sure thing, if railway extension and land development does not keep pace with your increased population, the people must suffer from a scarcity of food products.

We are farming practically all our prepared and irrigated land. If we farm more, it must be prepared and

irrigated, or crop failures will follow. For this preparation of added land, the farmer must have more and cheap money. He must have more and dependable labor. He must have improved machinery at reasonable prices, and above all else you must place the plan of increased production in the practical farmers' hands, under government supervision, and then all of you aid and support that plan when perfected and placed in operation.

CRITICS' AND CUDDLERS' CORNER

Subscribers are welcome to praise or to condemn (in letters of not over 200 words) anything which appears in the reading columns of this journal. Contributors to this department may drive and counter-attack each other as they see fit without endorsement or response on our part.—Editors.

Wants Government Charity to Begin at Home.

To the Editor: We join in appreciation of your editorial in issue of April 21. You know whereof you speak, "Mobilization," particularly appealing to us. Could our government aid farmers as it is aiding the trim and dapper gentlemen now visiting our shores in apparent humility and surely desperate appeal, gentlemen who have heretofore sneered, cojoked, and honored us in Europe by placing our representatives on gala occasions, not at the head as befits the First Nation of the earth, but down past every India potentate, petty prince and nin-com-poop, some 51st in line? I say, could we be assisted by water conservation, electric power, etc., etc., the boast of helping humanity in a concrete fundamental way would then be a reality. — May F. Herold, Placer County.

His Oranges Sweet.

To the Editor: A neighbor has shown me a copy of your weekly of March 24, in which you have printed a portion of the article I wrote concerning his crop of oranges. Instead of denouncing the robbery of which he had been the victim, you say: "The oranges were generally sour and poorly colored. I say from actual knowledge that you are mistaken. The oranges were shipped between November 18 and December 19, inclusive, and were beautifully colored and A1 in all respects. You also say: "This grower got 42 per cent by selling outside the Exchange." I am informed that the Fair Oaks Fruit Co. is a member of the Exchange. I sold my oranges through it. Here is what I received:

383 lbs. No. 1 oranges @	
.0213 cts. per lb.....	\$ 8.16
2185 lbs. No. 1 oranges @	
.0089 cts. per lb.....	19.45
131 lbs. No. 2 oranges @	
.0185 cts. per lb.....	2.42
506 lbs. No. 2 oranges @	
.0071 cts. per lb.....	3.59

Total\$33.62

Eighty per cent No. 1 oranges.

Not enough to pay my water tax. If that is a fair sample of Exchange selling my first and last experience is ample.—A. Chapman, Sacramento County.

Need Vegetable Articles.

To the Editor: I accept your invitation and take my first "slam" at the managing editor. The Pacific Rural Press has been forever preaching: "Don't waste this opportunity" in planting, cultivating, spraying, breeding, etc., etc. Always, at the same time, saying the farmer must and is working full capacity. These are great and good. The "Press" has, and is, doing much to solve the perplexing problems. But, an ounce of preventive is worth barrels of insecticides. So why not this: The most important part of any farm is the home garden, large or small; take this off any farm and the whole industry stops—or the family moves away. If the Pacific Rural Press should devote one page to this department in a manner as thorough as the courses now available at the University of California, there will be more and better food

for thousands. Few men can toil each day from early till late and take the added time of study and writing to do justice to themselves with the extra duty of taking the University of California course, while if the same information could be had at the time we read the Pacific Rural Press every point would be devoured and filed away as valuable treasures, indexed for reference together with all the hundreds of other lines of valuable information. —Harrison Mitchell, Amador County.

Night farming in England, now becoming rather general, is proving quite successful.



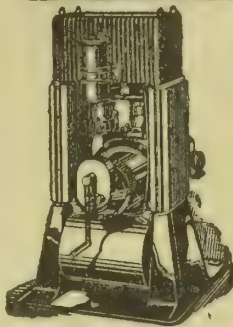
Raise High Priced Wheat on Fertile Canadian Soil

Canada extends to you a hearty invitation to settle on her FREE Homestead lands of 160 acres each or secure some of the low priced lands in Manitoba, Saskatchewan, and Alberta. This year wheat is higher but Canadian land just as cheap, so the opportunity is more attractive than ever. Canada wants you to help feed the world by tilling some of her fertile soil—land similar to that which during many years has averaged 20 to 45 bushels of wheat to the acre. Think of the money you can make with wheat at over \$2 per bu. and land so easy to get. Wonderful yields also of Oats, Barley and Flax. Mixed farming in Western Canada is as profitable an industry as grain growing.

The Government this year is asking farmers to put increased acreage into grain. There is now a great demand for farm laborers to replace the many young men who have volunteered for service in the war. The climate is healthful and agreeable, railway facilities excellent, good schools and churches convenient. Write for literature as to reduced railway rates to Supt. of Immigration, Ottawa, Canada, or to

GILBERT ROCHE

Canadian Government Exhibit, San Diego, Cal.
Canadian Government Agent.



Uni-Lectric
GASOLINE-ELECTRIC UNIT
LIGHTING SYSTEM

Electric Light for Your Farm

Uni-Lectric lighting plant generates standard 110-volt direct current; operates from one to fifty lights, electric motor, electric iron, vacuum cleaner, electric toaster, force pump, churn, washing machine, etc. No Batteries—No Switchboard—and a better machine for less money. High speed gasoline motor, generator and automatic governor, all complete in one small, compact unit. Uses standard lamps and fixtures. Simple, easily installed, dependable, economical. Costs less than other systems to buy and to operate.

Write to-day, for full description and low price.

KARL A. HEDBERG

ELECTRICAL ENGINEERS
104 Clay St., San Francisco, Cal.

Form 813

NOTE: REFER TO BULLETIN BY DATE & NUMBER.

TECHNICAL DEPARTMENT BULLETIN

DATE

NUMBER

TO ALL DEALERS:

For your information we wish to advise that in our experiments and tests here at the factory with our new Eight Cylinder car, we have been able to secure uniformly better results with Standard Oil Company's Zerolene motor lubricant than with any other which we have used.

Please understand, however, that we do not wish this to be construed as an attempt on our part to dictate the brand of oil which you should use, but merely to call your attention to the fact that this particular brand has given us better results than any others which we have tried, and are giving you this for your information.

Yours very truly,

THE PEERLESS MOTOR CAR COMPANY

BECAUSE Zerolene is correctly refined from asphalt-base crude, it maintains its lubricating body and value at cylinder heat, thus forming a perfect piston seal, reducing friction, and enabling the motor to develop its maximum power.

Zerolene is the oil for your car.

For sale by dealers everywhere and at our Service Stations.

STANDARD OIL
COMPANY
(California)



General Agricultural Review

Field Crops.

Alfalfa is just getting a good start in Nevada.

Rice planting in Glenn county is practically finished.

In San Diego county the crop outlook generally is good.

Large planting of beans and heavy planting of vegetables are reported from Napa county.

Hay and cereals in Contra Costa county show an approximate yield of 50 per cent of normal.

A proposal has been made in Congress to include a tax of \$2.50 a bale on cotton in the war revenue bill.

Cutting of grass for hay has begun in the high meadows back of Novato. This is about two weeks earlier than usual.

The first cutting of alfalfa hay is being sold for \$15 a ton f. o. b. cars, Tipton, for shipment to the cities, according to reports from that section.

A cotton-growing experiment will be conducted near Ripon, San Joaquin county, this year by J. H. Ward and Farm Adviser R. D. Robertson.

A hay yield of 20,000 tons from the Crocker-Huffman Land and Water Company's Merced lands is the forecasted estimate for this season made by Superintendent H. A. Lage.

The tomato growers of California have generally contracted to deliver this year's crop of tomatoes at \$10 per ton, whereas the price throughout the East has been from \$13 to \$15 per ton.

Experiments with sulphate of iron for the eradication of wild mustard, under the jurisdiction of experts from State Horticultural Commissioner Hecke's office, were conducted near Davis this season. An experiment of one acre, with an unusual infestation, was sprayed with 100 pounds of iron sulphate resulting in more than 90 per cent of mustard being destroyed, and no injury to the tender grain plants.

Deciduous Fruits and Berries.

The Watsonville district produced in 1916 3,600 carloads of apples.

The prune crop of Tulare county is expected to be unusually good this year.

Apricot blight conditions in Kings county are being officially investigated.

Blackberries began to arrive in San Francisco from Southern California last week.

The crop of strawberries in the Riverbank section is heavy, berries large and of a delicious flavor.

A packing house will be constructed in Hanford for the California Peach Growers' Association.

Tom Henry, Horticultural Inspector, Paso Robles district, reports 5,027 acres of almond trees bearing and nonbearing in that section.

One canning company in the Turlock district has contracted for 25,000 tons of peaches, all of the apricots in the neighborhood, and about 1,000 tons of tomatoes.

A few cherries, the first of the season, Early Knights and Soft Whites from Vacaville, were on the Los Angeles market last week. They sold at 25 cents per pound.

The peach loss from the frost in Sutter county is confined to certain localities and mostly to the freestone varieties. From 15 to 20 per cent of a total is estimated.

County Sealer George McPhee of Santa Ana started a rigid inspection of strawberries last week in the market, and said that he would prosecute all short-weight box packers.

The Pacific Fruit Express has secured 1,500 cars from Armours and have also constructed 2,500 extra cars. This will give the Pacific Fruit Express 17,000 cars this season.

The California Peach Growers' Company has sent out a communication to brokers advising them that orders will no longer be accepted for unpeeled dried peaches of the 1916 crop.

Packages of perishable fruit such as berries and other soft fruits offered for shipment by parcels post should be inclosed in a container of sufficient strength to prevent being crushed and should be marked "perishable."

The Fruit and Markets Committee of the San Jose Grange, at a recent meeting, reported that offers of 7 cents a pound are being refused for dried prunes, 18 cents for dried apricots, 14½ cents for dried peaches and \$80 a ton for green prunes.

A thousand American, Italian, Japanese unskilled workers met recently in San Jose to promote the interests of the new Federal Labor Union. Their object is to increase the pay of fruit workers to \$2.50 a day for men and \$1.75 for women, with extra pay for overtime. Ten hours constitutes a day.

Arthur E. Beers, Horticultural Commissioner of Merced county, sends the following list of trees and vines planted in Merced county, season 1917: Grapes, 1,131,383; almonds, 42,145; cling peach, 24,481; figs, 7,584; freestone peach, 5,047; apricots, 4,971; prunes, 2,502; olives, 2,080; walnuts, 1,444; pears, 637; other fruit, 1,649.

Citrus and Semi-Tropical.

The first California Almond Day will be on Friday, September 14, so fixed by the State Legislature.

The Wetherby Suburban Home Tract, which is planted out in olives 35 feet apart, began planting 600 acres of tepary beans May 10th.

L. D. Palmer, manager of the Orange County Fruit Exchange, says that the Valencia orange crop in the south end of Orange county will be 400 cars greater than last year.

Mr. Palmer believes that the exchange associations which have packing houses at Orange, Olive, Villa Park, McPherson, El Modena and Garden Grove will ship a total of 1,800 cars of oranges this year.

A new method of branding oranges, in which the branding is burned into the peel with an electric branding iron, has been put into effect at the College Heights Citrus Fruit Association packing house in Pomona. This scheme will be used in branding Sunkist oranges.

Due to the restriction of the importation of oranges in Great Britain and the war's influence on the markets of France and other European countries, there is a large supply of

Spanish Valencia oranges available for shipment to this country.

J. A. Fuller, whose orange grove is situated south of Porterville, dug up 200 orange trees in April, 1916, from the railroad right of way and reset them on his own land, and they are doing nicely, only two having died. This season he transplanted the same number of eight and 10-year old trees, and they all look well. Opinion among orange growers is divided whether transplanted trees will bear enough to be profitable.

The Exchange By-Products Company, organized about a year and a half ago by the California Fruit Growers' Exchange, in the first year of operation used almost 4,000,000 pounds of lemons in the manufacture of citric acid. The manufacture of citric acid has presented many obstacles which have been successfully overcome. Now that the problems of citric acid manufacture have been solved work is being done which it is hoped soon to make feasible the production of lemon flavoring, oil and tincture, for which there is ready demand.

Grapes.

The vineyards in Sutter county which were damaged by the frost are looking better. The output, however, will be cut about five per cent.

Plans for a mass meeting of grape growers May 26 to discuss the future of the industry in the State have been made by the directors of the California Grape Growers' Protective Association. Frank T. Swett is president of the association, and H. F. Stoll is secretary.

Miscellaneous.

Santa Maria will hold an agricultural fair October 24-27.

The Riverside county fair will this year be held October 9-13.

The State of California has 15 farms fully cropped this year.

The Fresno free market has brought in \$11,182.10 in revenue since December 17, 1912.

The prospects for bumper grain crops in Butte county continue. Deciduous fruits will be short.

Contracts for erecting a large addition to the Sperry mills offices in Stockton have been let.

May 13 is the date set for the dedication of the Woodward reservoir, located 25 miles southeast of Stockton.

The Lake County Canning Company will erect a warehouse adjoining the present cannery building in Ukiah.

Grass Valley mine managers have agreed to employ no men from the farms during the present stringency of agricultural labor.

Concerted efforts to knock out the Berkeley, Oakland and Piedmont ordinances against the keeping of chickens in private yards are to be inaugurated.

Special efforts will be made in Nevada this year to put Indian laborers in the hay fields to work. Indians are good farm laborers when liquor is put beyond their reach.

The bill validating the issuance of \$4,500,000 Los Angeles flood control bonds has been signed by Governor Stephens. This district includes a large portion of Los Angeles county.

La Panza ranch, which consists of 23,177 acres of fine grazing and farming land in San Luis Obispo county, has been sold to E. M., H. E. and S. H. Cowell and W. H. George of San Francisco for a consideration exceeding \$460,000.

Many acres of wheat are being sown in Nevada.

Kern county reports 38,000 acres planted to cereals.

An increase in the Missouri corn acreage of about 750,000 for this year is indicated.

Eight thousand acres of corn will be planted in the San Joaquin Delta this season, it is estimated.

Farm Adviser Amundsen of Placer county announces that he has disposed of the entire supply of Tepary beans.

Preliminary estimates show that Yolo county's rice acreage for 1917 will be better than 20,000 acres, or more than double that of 1916.

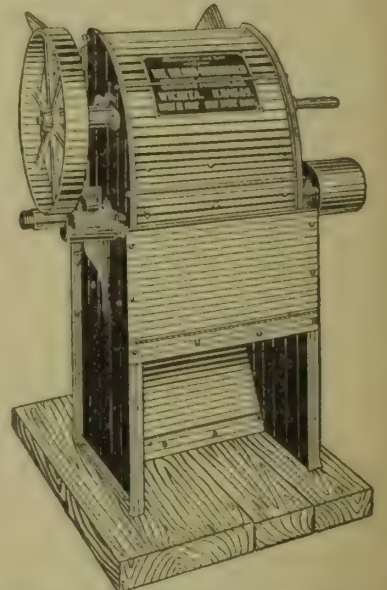
Seventy-five to 100 acres of tomatoes are to be planted around Lindsay, Porterville and Woodlake this season, the product to be canned at Lindsay.

More than 4,000 dryinids have been imported from Australasia by the State insectary to fight the beet leaf hopper in the beet fields near Salinas.

County Horticultural Commissioner Waite says that the aphids are increasing in numbers in the cantaloupe and barley fields in the Imperial Valley.

The W-W Feed Grinder

No Burrs
No Plates
No Sharp Edge
Knives



GRINDS Alfalfa, Corn Fodder, Ear Corn with or without shucks, Head Kaffier, Small Grain, Etc. Not injured by small stones, bolts or nails. **Catalogue FREE**

Jr. Monarch Hay Press Co.,
SAN LEANDRO, CAL.

DAIRY COWS

REGISTERED BEEF BULLS
PUREBRED HOGS
Large or small lots. Any order executed.
GEO. P. ROBINSON CO.
426 J Street,
Travelers Hotel Building, Sacramento.
LIVESTOCK BROKERS

DUROC-JERSEYS

Young boars and gilts out of splendid sows by our Young Defender boar. Defender Durocs are foremost for size, bone and quality.

HENRY CUMMINS,
Goshen, Cal.

Yuba Tractors

ARE HELPING TO SOLVE
THE FOOD PROBLEM
BY AIDING THE FARMERS
TO PLOW AND CULTIVATE
MORE LAND IN LESS
TIME, AT LOWER COST, IN
A FAR BETTER WAY,
THAN BY ANY OTHER
MEANS.

WRITE FOR CATALOG.

Yuba Manufacturing Co.

Department A-15

433 California St., San Francisco

Alteration of the present fencing laws to make it incumbent upon stock owners to fence their animals in, instead of landowners being forced to fence other persons' stock out, has been voted by the State Assembly.

News comes from El Centro that the constructive measures embodied in the plans for the spending of \$2,500,000 along the line of the main irrigation canal has been endorsed by a majority of the property owners in the Imperial valley, and a bond election will be called.

Engineers have begun collecting data in connection with the proposed dam on Horse creek, with which to impound the flood waters of the Kaweah river section, the estimated cost of which has been placed at \$8,000,000. Irrigation of more than 500,000 acres of land will be possible.

A State law compelling vagrants and tramps to till the fields in the nationwide campaign to increase food production was unanimously advocated by Tulare county farmers and business men at a mass meeting held recently under direction of the committee on resources and food supply of the State Council of Defense.

A suggestion that all school openings next fall be postponed several weeks to permit girls and boys to work on farms and in food-producing establishments has been made to the House agricultural committee by Secretary Houston. He suggests a census be taken of all girl and boy students to help out in sections where farm labor is scarce.

Duroc Jerseys

Cherry Red Color.

HERD SIRES:

Tulare Boy

and

E. N.'s Colone

Tulare Boy was Sweepstakes Winner at 1915 Fresno Fair. Weighed 276 pounds at six months of age.

**Choice Breeding
Stock for Sale**

John P. Walker

Visalia,

California

Hog Cholera Serum

I represent one of the greatest Government Inspected Hog Cholera Serum Plants in the whole country.

NO BETTER SERUM MADE.

An ounce of prevention is worth a pound of cure. Find out about this serum today. Price Right.

For particulars address

CARRUTHERS FARMS,

MAYFIELD,

CALIF.

Dealers in PAPER Blake, Moffitt & Towne
37-45 1st St., San Francisco
Blake, Moffitt & Towne, Los Angeles
Blake, McFall Co., Portland, Ore.

Swine Notes.

The Oak Knoll farm shipped a carload of fat hogs to San Francisco last week, the first carload of Chester Whites from Napa valley.

E. Emerson of Mountain View has recently established a herd of registered Berkshires on his ranch in Contra Costa county.

Geo. Bruns of Livermore has quit Berkshires and will raise Chester Whites only. He recently received a bred sow from C. B. Cunningham of Mills.

H. E. Boudier of Big Ranch R, Napa, reports recent sales at follows: Five yearlings to H. Ackley, McCloud; two weanlings to C. E. Christley, Orland; one bred gilt to Ralph Groves, Kerman.

York and Son of Modesto report the sale of a registered Berkshire boar to Meadowview Farm, Merced. They have retained six head of choice sows as a foundation herd and expect to materially enlarge the herd.

R. Rodrick of Patterson has recently established a small herd of Berkshires on his alfalfa ranch, having purchased three gilts from the Oak Grove herd at Woodland. Two of the gilts are by Brinton's Longfellow and are likely looking prospects.

Gen. A. J. Gooch of San Francisco has recently purchased a registered Duroc boar and a bred gilt from John Daggs of Stanislaus county. He has also made purchases of Berkshires from Grapewild Farms and of Poland Chinas from A. M. Henry.

The Whitehall Estate Company now have a band of almost sixty Berkshire brood sows and gilts at their ranch near Tracy. Since selling their herds of Shorthorn and Hereford cattle they expect to give more attention to their Percheron horses and Berkshire hogs.

Manager Vandever of the New England-California Corporation advises us that he expects to reduce his herd of brood sows from 250 head to about 50, selecting only the best of his Duroc sows for the future foundation. They now have 1500 hogs on their ranch near Ripon.

Representatives of the California Swine Breeders' Association and the leading packers have agreed that 77 per cent shall be paid for at a premium of 10 cents per 100 pounds above the market price for every point they dress out above the basis per cent. There will be no cut in market prices for hogs dressing below 77 per cent.

The Deacon Ranch Company of Davis have sold their ranch and their entire Poland China herd. Four head went to A. R. Banta, Tracy, and the rest to Geo. E. Dierrsen, Sacramento. Mr. Deacon writes: "The advertisements in Pacific Rural Press brought a very satisfactory number of answers, for which we wish to extend our hearty thanks."

H. I. Marsh, Poland China breeder of Modesto, reports the sale of fifteen pure-bred Polands to Willison and Thompson of Mazatlan, Mexico; a service boar to Fred Hartsook of Lankershim, and a service boar to Miller and Lux. Since purchasing the eight top sows of the A. M. Henry herd, Mr. Marsh has twenty choice brood sows, one of the largest herds of choice Polands in the State.

BIG TYPE DUROC-JERSEYS

The Leading Blood Lines of the East and Middle West

Offering at the present time choice spring pigs, either sex. A few boar pigs sired by Critic D, also a few by Indianwold's Orion Cherry King out of a sow sired by Joe Orion II, for May delivery.

FREDERICK M. JOHNSON.

NAPA, CAL.

R. F. D. 2, BOX 87

Herd sire at age of 16 months.
First in class, Sacramento, 1916.

Corn Cane Maize Cow Peas Soy Beans Field Beans Sudan Grass

Prices and information regarding the planting and cultivation of these crops cheerfully given upon request.

WE PAY THE FREIGHT

Valley Seed Co.

506-508 JAY STREET

SACRAMENTO

LOUDEN BARN EQUIPMENT

STALLS AND STANCHIONS

FEED AND LITTER CARRIERS

HAY TOOLS—BARN DOOR TRACK

ALL STEEL STALL WITH STANCHION, \$6.00

PUMPS FOR EVERY PURPOSE

CENTRIFUGAL PUMPS

DEEP WELL PUMPS

ROTARY PUMPS

MOTORS

GAS ENGINES

OIL ENGINES

BOILERS—PIPE—BELTING—FITTINGS

LOUDEN GARAGE DOOR HANGERS

BARN PLAN BOOK FREE

**California Hydraulic Engineering
& Supply Co.**

68 FREMONT ST., SAN FRANCISCO

424 EAST THIRD ST., LOS ANGELES

Hauser's Digester Tankage

GIVES GREATEST VALUE FOR LEAST MONEY.

IT MAKES THEM FAT.

Hauser Packing Co.

Los Angeles

DIGESTER TANKAGE

Send for Sensible folder on feeding hogs

WESTERN MEAT COMPANY

Animal Food Dept.

704 Townsend St.,

San Francisco

H. B. THORNBERRY

Dealer in

JACKS, JENNETS

and

Gaited Kentucky Saddle Horses
Largest Importer in the United States.
P. O. Box 679, Stockton, Cal.

TAM WORTHS

(The Bacon Hog)

Largest Herd in the State

DUROC-JERSEYS

Mature Stock and Weanlings of both sexes.
Sure to please.
SWINELAND FARM.
W. O. Pearson, Prop. Woodland, Cal.

Mechanical Power on the Farm

Users of tractors, engines, pumping plants, motor trucks, automobiles, electric motors, and other mechanical farm power are invited to make this department an exchange of their experiences and troubles.

STACKS STRAW WITH NET AND ENGINE.

[Written for Pacific Rural Press.]

Straw stacking is usually a difficult and unsatisfactory job on account of the trouble of handling it at the stack with the ordinary hay fork and derrick.

On the J. S. Gibson Company's ranch at Williams, Colusa County, straw was stacked with little or no difficulty last fall by the use of a specially made straw net.

This net was made in two sections, the ends of both sections being strengthened by pieces of two by four placed crosswise of the net. The two sections were hinged together at the center, the hinges being securely fastened to the wooden cross-pieces. Five or six strong cables extend from the outside end pieces to an iron ring at which point they were securely fastened.

In use, the net is laid on the floor of the straw rack and the straw pitched directly from the field onto it. The looped ends are brought together when the netful has been loaded and another net filled. When the wagon is loaded it is driven to the stack where the looped ends are fastened to the derrick cable. By this means a large part of the load is lifted to the stack in one operation, the driver of the team using a jerk line to dump the net when it has been pushed to the proper location over the stack.

The accompanying picture shows a netful ready to be jerked, also the small gasoline engine which Mr. Gibson uses in stacking all of his hay and straw. It will be noticed that the straw stack is better formed than is usual when fork stacking is practiced, and a saving of considerable labor is also realized.

FAST CUTTER FOR VINE PRUNINGS.

To the Editor: Answering W. M., Fowler, in regard to cutting up grape prunings, we have invented a brush cutter that rakes and cuts the brush in the row as fast as the team will walk. It takes only one man to do the work. We expect to have this cutter on the market by next season.—Nord Bros., Kingsburg.

[The picture submitted with this letter shows a gasoline engine mounted on the rear of a heavy wagon frame on low wheels. The belt seems to run a wheel on a shaft across the wagon frame which runs a cutter close to the ground just in front of hay rake teeth between the wheels. The cutter has a heavy flywheel to carry it over heavy cuts.]

TRACTOR TO HAUL PRUNES.

[Written for Pacific Rural Press.]

For three years not a horse has been used in O. G. Wagers' 25-acre prune orchard in Sonoma County except one-half day. Everybody would like to disk the ground before plowing; but with horses, they usually can't get to it. Disking first, means plowing under a fine soil; while plowing first often means turning under a dry crust in clods that

the disk doesn't cut up later. This dries out the ground and prevents use of the plant food in it. Mr. Wagers uses a 6-12 tractor, with which he can do the work well and on time and can do much more cultivation than he could otherwise. He disks before plowing. Even the lug boxes are hauled into the orchard and the fruit out of it to the dip by tractor.

FORD ATTACHMENT AVOIDS STRAIN ON TRANSMISSION.

To the Editor: In your issue of April 7 you describe a Ford attachment that will fill silos, etc. We have been using the Ford to run an 11-inch silage cutter and blower. We always jacked up the hind wheels and ran belts from same to counter-

shaft, but I can easily see that the attachment you describe is the better way. Could you tell me if any firm or manufacturer has the attachment all ready to put on, or would one have to rig it up himself. The Mechanical Power Department of your paper is a great help to me.—W. Wilson, Modesto.

Several such attachments are made, one of which we have in mind costs \$48. We are referring your query to the manufacturers. As we remember, it, Mr. Anderson's attachment was at least partly home made. It avoids strain on the transmission such as you get by taking power from the hind wheel, because it takes its power directly from the crankshaft.

POWER NOTES.

A new free correspondence course in "electricity for rural use" is offered by the University of California at Berkeley to all California farmers. Two pumps of 5,000 gallons ca-

pacity per minute have been installed to irrigate 750 acres of beet fields owned by the Spreckels Sugar Co. in Monterey County.

A hundred 3½-ton motor trucks have been bought to move one big circus independently of the railroads. Each elephant will have his own palace car. Camels, etc., are to be carried in trailers.

In a letter received at this office R. L. Hill, field secretary of the National Duroc Jersey Record Association, states that he will spend a month or two in California previous to and after the State Fair this year.

Free weekly reports of condition of the 8600 miles of roads in the 20 National Forests in California is being furnished by the San Francisco office of the National Forest Service to hotels, auto clubs, press associations, newspapers and other interested organizations, which will make the information available to motorists.

PACIFIC RICE MILLS

24 BLUXOME STREET, SAN FRANCISCO

Successor to BUTTE COUNTY RICE MILLS
J. Frank Judge, Manager C. S. Morse, Sales Manager

February 8th, 1917

New York Belting and Packing Co.,
519 Mission Street,
San Francisco, Cal.

Gentlemen:

Attention Mr. R. B. Cameron

In regard to the belting for the Rice Flour plant, at the Bluxome Street mill, I will be ready to give you the order for Test Special belting about the 21st of this month. I have decided to use the Test Special and wire lacing on all belts except the motor drive, which you can have time to make endless.

From the results I have received from the Test Special in this plant, I do not believe I would be doing justice to the company in paying the difference for leather belts. The wire lacing is giving perfect satisfaction on our Hullers which is one of the worst tests I have ever used a belt.

The results I get from the Test Special and wire lace are very satisfactory.

Expecting to hear from you about the 20th, I remain

Yours truly,

J. S. Kennedy
W. J. Miller

Mr. Kennedy decided to use TEST SPECIAL after a most exacting trial. The belt that will give satisfactory service in a rice mill requires every quality of strength and tenacity to stand the very severe and constant strain.

—TEST SPECIAL will do your work as well.

New York Belting and Packing Company
519 Mission Street : : : : : San Francisco

Home Office: New York City. Branches in all principal cities

Fill Out This Coupon—Mail It TODAY

New York Belting and Packing Co.
519 Mission St., San Francisco —Dept. A-6
Send me samples of Belting that you will guarantee to give satisfactory service on my work and quote prices delivered at

..... Station.

Horse Power	Diameter in Inches
{ Elec. Motor.....	{ Driving Pulley.....
{ Steam Engine.....	{ Driven Pulley.....
{ Gas Engine.....	

Kind of Drive

Cross.....
Straight.....
Perpendicular.....
Width of Belt..... Ply.....
Distance between centers of Pulleys.....
Rev. per minute of Driving Pulley.....
Kind of Machinery Driven.....
My dealer's name.....
My name.....
Address.....

A pocket memo. booklet giving speed and power tables will be sent FREE to all who mail this coupon.

CAMPING IN AUTOMOBILES.

[Written for Pacific Rural Press.]

Seeing California by automobile is luxurious now that we have so many fine paved roads. But hotel life is more expensive than gasoline, and a fellow on vacation hates to dress up all the time. W. T. Bailey of San Diego County is reported to have fixed up his car last fall so he could sleep in it on a long trip to the Oregon line and back, camping out for two months with his wife. They saw Yosemite Valley and Lake Tahoe, then up the coast road through the magnificent wilds of Humboldt County. This was not by any means all paved road, yet he reported getting 24 miles per gallon of gasoline, 800 miles per gallon of oil; and after 8,000 miles of traveling, he expected to get 12,000 miles more from the tires. This recalls one of our representatives, Chas. Barnum, who carried a girl from Mr. Bailey's home town as his wife; and camped out with her for many months in his automobile while he persuaded farmers that they need Pacific Rural Press.

HIRE YOUR TRACTOR.

"Help your neighbors" is the keynote of a special appeal to tractor owners issued by Assistant Secretary of Agriculture Carl Vrooman.

"Every farmer who owns a tractor," he says, "owes it to his country this spring to do all the custom or exchange work he can without neglecting his own work. Every hour that his tractor would otherwise be idle, it ought to be at work helping a neighbor who is behind with his work. Make your outfit work from dawn to dark; make it work all night if you have enough operators to fill the shifts. The acreage to be harvested this fall hangs on the plow. Don't let an acre that might otherwise be planted go untilled because your tractor is in the shed. Help your neighbors and thus do your part in strengthening the allied lines on the battle fronts of Europe."

THIS IS THE YEAR TO PULL STUMPS.

There is absolutely no doubt about that. Farm products are high, and are going to stay high for several years. There is big money in the land now.

Your stump land is the richest land you have. It doesn't need fertilizer. It is virgin soil. For ages it has been accumulating leaf mold and decaying vegetation of all kinds.

If you have stump land or woods put it to work. Every available acre means profits. No farmer today can actually afford to pay taxes on loafer stump land. This period of high prices demands the work of every bit of land you have.

There are a number of fine stump pullers on the market; and dynamite will often save a lot of hard pulling, even where it is used in connection with stump pullers.

A gasoline motor car is to be run on the Tidewater Southern to compete with auto stages. The car is to weigh nine tons and be 40 feet long—light weight for quick starting and stopping. A 90-horsepower motor is to run it up to 45 miles per hour.

CATERPILLAR

Reg. U.S. Pat. Off.

Lowest Cost Per Working Hour

Price, in the purchase of a tractor, should be a secondary consideration. Of chief importance are the tractor's dependability, its ability to do all sorts of work, under all sorts of conditions, with a low operating and upkeep expense.

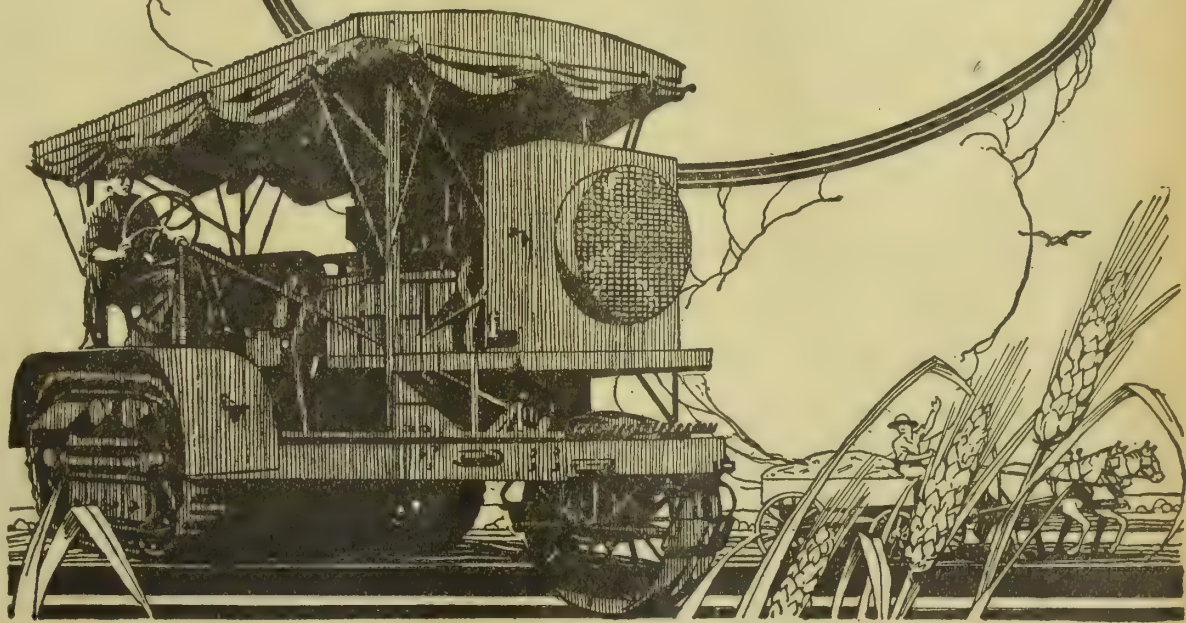
Many years of Caterpillar operation have proved its cost lowest, not only per actual working hour, but also per acre worked. Statistics from hundreds of Caterpillar owners prove this to be so.

Power to pull an unusual number of plows at an unusual depth, versatility in operation, construction that minimizes delays and expense for repairs, make Caterpillar costs lowest, and Caterpillar profits largest.

We will gladly send you details on all models

The
Holt
MANUFACTURING CO. Inc.

Stockton San Francisco Los Angeles Portland Spokane



Corn Machinery

Superior Corn Planters

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Appleton Corn Shredders

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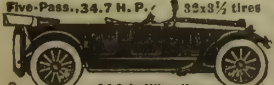
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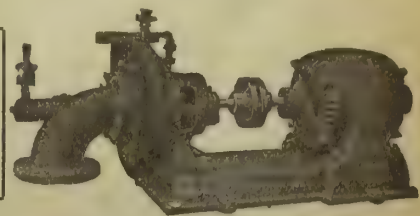


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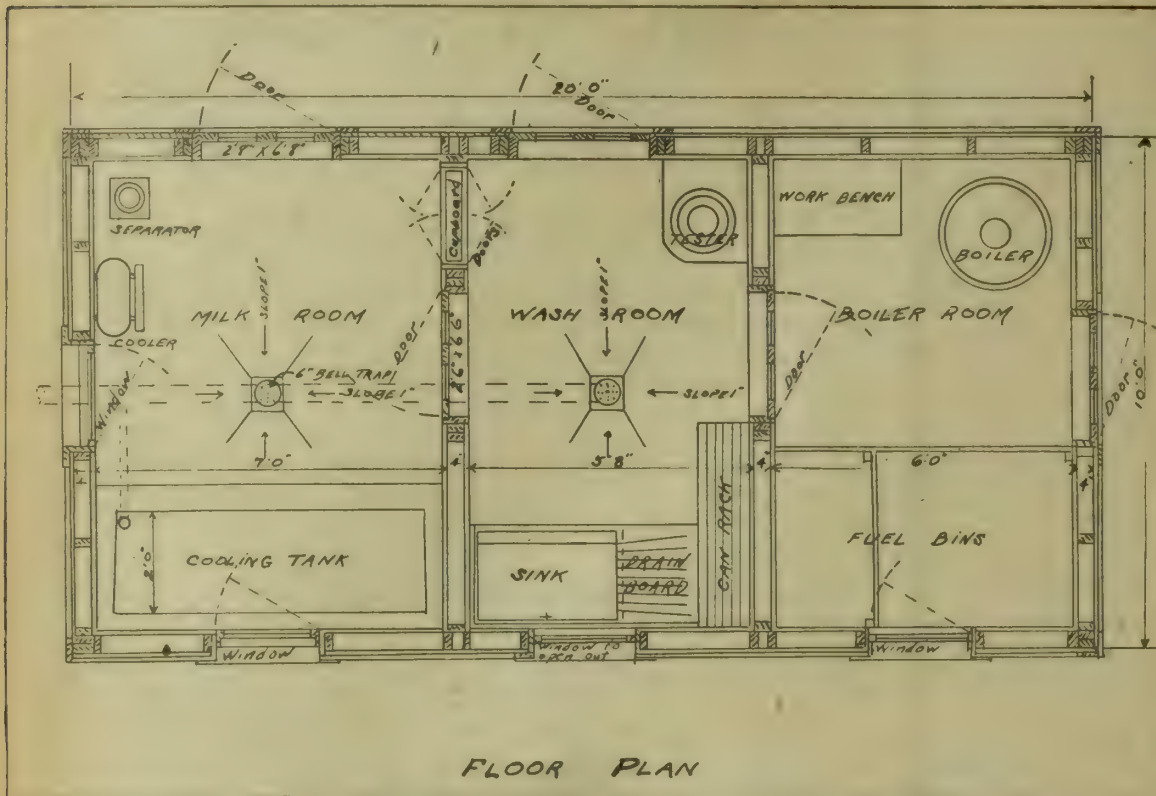
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LOS ANGELES, STOCKTON, VISALIA

Good Types of California Dairy Buildings

(Continued from first page.)



Floor plan of sanitary, convenient milk room. Store distillate fuel outside.

ing hot water or steam; and the space occupied by a small upright boiler is so small that it can be located near most any washing room without difficulty.

Electricity of ever increasing importance on dairies, both for light and power; and most builders in districts where electricity is available should plan on wiring both barn and

milk room, as well as outside corrals, for lights. Provision should also be made for running the separator with electricity, separator manufacturers having specially designed machines for this purpose.

LOCATION OF BUILDING.

In erecting dairy buildings some thought should be given as to the most desirable location. Generally they should be located so that the

prevailing winds blow from the residence toward the barn. The milk house should also be located on the windward side or end of the barn, as the trouble of foul odors is largely overcome thereby. In the plans shown, it will be more convenient to build the milk house at the end of the barn rather than at the side, in order to save labor.

Ground Grain and Chopped Hay for Cows

To the Editor: We would like to ask, in so far as you have the information, as to the economy of using ground feeds and chopped hay for cows. Do you have experiments showing the increased production due to ground grain or chopped hay? Have you found appreciable difference in the digestibility of alfalfa meal and alfalfa hay chopped fine or coarse?—R. E. H., San Francisco.

[Answered by Prof. F. W. Wolf, University Farm, Davis, California.]

The inquiry rather infers that there is a distinct economy in using ground grains and chopped hay, but according to our best information on the subject, this does not always hold true. Small hard seeds, like barley, wheat, rye, grain sorghums, etc., are utilized somewhat better by stock when ground or rolled than when fed whole. If fed to animals with poor teeth that cannot properly masticate their grain, it is also advisable to grind or crush Indian corn and oats, but even young animals whose teeth are well developed can masticate both corn and oats thoroughly, and the digestibility of these grains is not appreciably affected by grinding. This has been fully established through experiments with swine so far as Indian corn is concerned. The average digestion coefficients for shelled corn are: dry matter 87 per cent, protein 75 per cent, fat 64 per cent, fiber 44 per cent, and nitrogen-free extract 92 per cent, while the corresponding figures for ground corn are 87 per cent, 76 per cent, 64 per cent, 46

per cent and 93 per cent. The fact that barley is practically always either rolled or ground when fed to stock is a good evidence that this

feeding pigs and poultry and in the manufacture of mixed feeds. For dairy cows, beef cattle and sheep, however, the use of ground or chopped hay is justified probably solely on the score of saving storage room and avoiding waste in feeding.



An Efficient Grinder and Chopper Is a Great Time-Saver.

practice is of distinct advantage, however, and the same holds true with the other small grains mentioned.

It may be safely assumed that the advantages of grinding or chopping alfalfa come from the fact that such alfalfa can be fed without waste and requires less storage room than long hay. There is no definite evidence of improvement in digestibility or in feeding value per pound of alfalfa eaten, as a result of this preparation. Alfalfa meal or fine-chopped alfalfa has the advantage over long hay in being easily handled and mixed with grain feeds and is used largely in

The digestibility is not changed by grinding or otherwise preparing either hay or grain, because cattle as well as other farm stock are able to do their own grinding and have plenty of time to do it in, except perhaps in the case of horses working long hours. In eating long hay, this is thoroughly mixed with saliva which contains the first enzyme that acts on the nutrients in the feed in the process of digestion. If fine-ground meal or hay is fed, the feed is apt to be bolted quickly, and the digestion may be less complete in that case so far as some of the nutrients (the insoluble carbohydrates) are concerned.

TESTS OF BLUE-MILK COWS.

[Written for Pacific Rural Press by J. D. Williams of Bodega-Sonoma Cow Testing Association.]

Enclosed is a statement of tests, etc., from cows that gave blue milk. I told the cow tester to be careful and watch the cows that gave blue milk. I picked five that he marked as blue out of 75 we are milking, and I am giving you their test for four months.

The tester was telling me of a ranch where he was testing. The party would not put one of his cows in to be tested, as he said she was no good. He sent her milk to the house and when she was dry again he said he would sell her.

The cow tester asked the party to let him test her milk, as it would not cost him anything, so he did, and she tested 5.8. The cow is not for sale and the party is willing to put her in the herd and pay for testing her.

As regards increase of fat as a cow gets older, it will be very little, so far as I can see. Of course cows vary in test, as you will see by the enclosed statement:

Month	Name of Cow	Lbs. Milk	Test	Lbs. butter fat per day
Jan'y.	Claricy	23.5	4.2	.98
Feb'y.	"	25.1	4	1.00
March	"	24.1	4.3	1.03
April	"	27.7	4.4	1.21
Jan'y.	Clara	19.4	5.4	1.04
Feb'y.	"	19.4	4.9	.95
March	"	20.01	4.6	.92
April	"	21.08	6.4	1.39
Jan'y.	Amy	27.07	4.6	1.19
Feb'y.	"	23.01	4	.92
March	"	23.06	4.3	1.01
April	"	27.08	4.8	1.33
Jan'y.	Midget	17.09	4.4	.78
Feb'y.	"	18.08	4.5	.84
March	"	20.04	4.3	.87
April	"	21.00	4.8	1.00
Jan'y.	Maggie	21.06	4.5	.97
Feb'y.	"	20.03	4.2	.87
March	"	20.04	4.4	.89
April	"	21.09	3.9	.85

PICKLED BUTTER.

To the Editor: Please tell us how to pickle butter and how long the butter will remain in good condition under favorable surroundings.—J. H. D., Irvington.

[Answered by S. L. Denning, University Farm, Davis.]

The practice of pickling butter is followed to some extent upon farms with fair results. The butter should be printed in the regular squares or rolls and then packed down in a wooden keg or stone jar. The jar or keg is then filled with salt solution in the proportion of 1 pound of salt to 4½ or 5 pounds of water. Put a weight on top of the butter to keep it below the surface of the brine. It is well to line the inside of the keg or jar with cloth before putting in the butter. A sugar sack can be used to good advantage for this purpose. The butter should then be kept in as cool a place as possible.

Just how long the butter will remain in a good condition will depend a great deal upon the condition of the cream from which the butter is made and the temperature of storage, but some very satisfactory results have been obtained.

The herd averages in the San Joaquin County Cow Testing Association are gradually climbing, due in part to the coming of better weather, and to better feed as well as an increased effort on the part of dairymen to secure greater production. The five leading herds for March averaged 30 pounds of butter fat, or one pound of butter fat per day per cow, or better. The average obtained by the leading herd is the highest that has so far been recorded in this association.

Remco Redwood

What a Remco Silo Means

1. That you are able to store your crop when feed is plentiful.
2. That you have green, succulent feed when range feed is scarce and grain high.
3. That you will get more and better milk.
4. That you will more than save the cost of the silo every year.

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2. That a good supply of water is always on hand for home and farm use.
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4. That you will never have tank troubles.

What Remco Pipe Means

1. That you have an uninterrupted flow of water.
2. That your pipe will last longer than any concrete pipe or metal pipe except cast iron.
3. That your pipe will cost you less than any metal pipe.
4. That your pipe will stand heavy pressure either pumping or gravity and no standpipes are necessary.

REMCO SILOS, TANKS AND PIPE are made from CLEAR, AIR DRIED REDWOOD. They are manufactured by skilled mechanics using the most modern wood working machinery.

You can avail yourself of the experience and skill of our experts, who have made particular study of Pacific Coast needs. ALL INFORMATION IS GIVEN ABSOLUTELY FREE.

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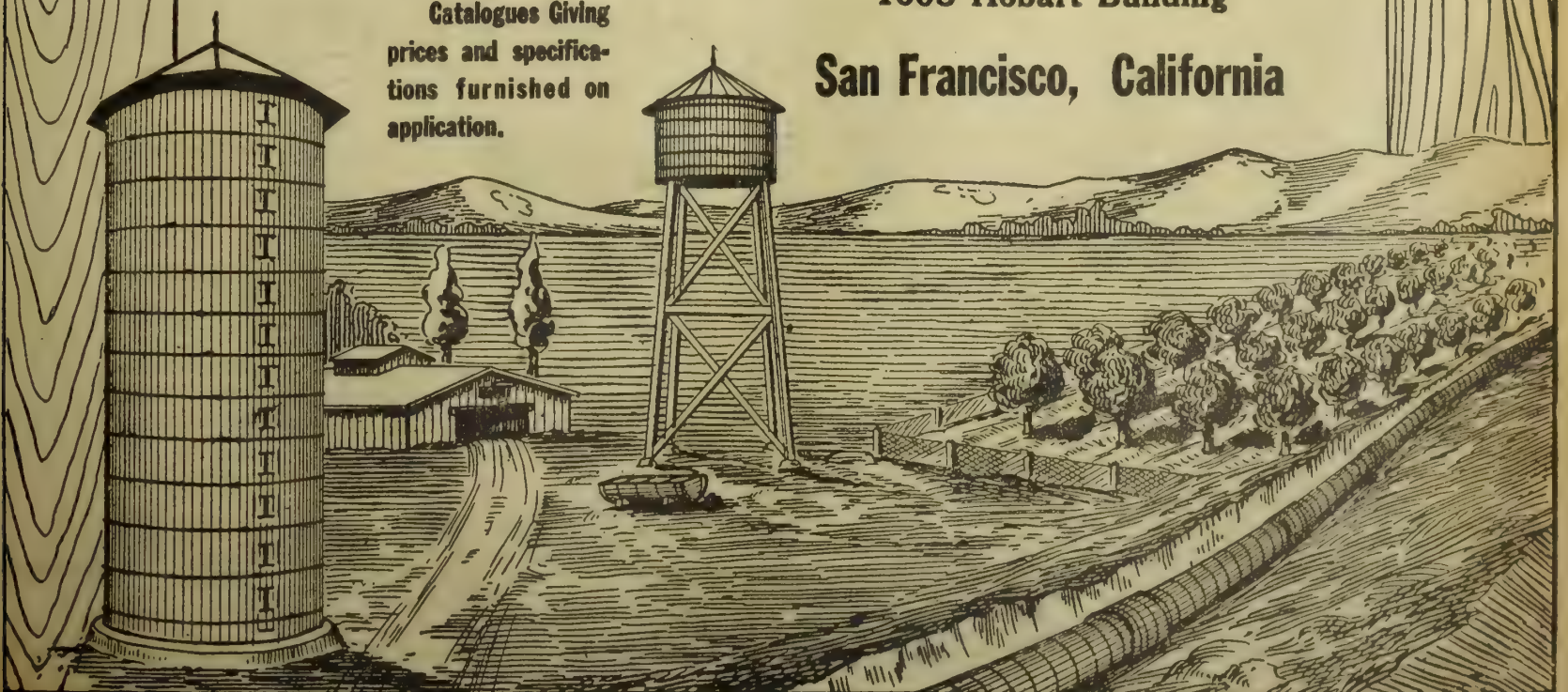
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Experience with Milking Machines.

[Written for Pacific Rural Press.]

In order to get dairymen's actual experience with milking machines we have visited and written to a number of readers of the Pacific Rural Press, who have been using them, and we give herewith the gist of their replies. The machines used were Empire, Sharples, Calfway, and Hinman.

Shore Acres Dairy, San Leandro, have used milker continuously two and one-half years, milking on an average 180 cows, purebreds and grade. Careful tests have shown no change in milk flow or lactation period. Three operators drive in cows, do milking, strip after the machine, deliver milk to creamery and do barn feeding. Saving in labor amounts to one man for sixty cows. Attribute success to good operators and careful supervision. Rubberware is carefully watched and thoroughly cleansed to keep down bacterial count, which averages under one thousand.

Favor Bros., Gonzales, used milker about a year. Cows milked last year are now freshening and show absolutely no ill effects from machine. Had a little trouble breaking old cows to machine, but none with young ones. One man averages 20 cows per hour. Strip some of the

milkers. One man operates machine and milks in just half the time required by hand.

F. J. Austin has used machine 14 months on 30 cows. Can milk 20 cows per hour, against 18 by hand. Does not injure cows in any way.

Grapewild Farms, Escalon, used milker 3 years on 50 cows. Stripped every cow after machine. Two men milked 50 cows in one and one-half hours, while it required 3 men nearly 2 hours by hand. Quit using machine because feared cows would not keep up in milk as well as when hand milked.

P. V. Felts, Maxwell, has used machine 2 years. Finds it a great labor saver. Milks and strips 25 cows in half the time required for hand milking. Machines have not injured cows in any way.

Newman Bros., Elk Grove, used milker 18 months, milking 50 to 60 cows. Two men do work which required 4 men hand milking. Have found it important to have "man with brains" run the machines.

Orange Grove Farm, Campbell, have used milker 16 months, milking 15 cows. Do the work in three-fourths the time required by hand and find it pleasanter and easier, and get cleaner milk. Strip cows, secur-



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"America Prepared and America Efficient" means more than a fully equipped army and navy. It means industrial and agricultural preparedness of a high order—Modern labor saving methods in factory and farm.

The big army of EMPIRE users is prepared to "do its bit"—and more, regardless of the shortage of men that will result when recruiting begins in earnest. With



EMPIRE users will be able to produce more and better milk—milk more cows with less help—safeguard the quality of the milk by keeping it free from germs, flies and stable air—safeguard the condition of their valuable cows through the gentle, uniform action of the EMPIRE Teat Cup.

You, too, should be prepared with EMPIRE Equipment to meet the demands that will be made upon you for bigger and better production in this time of national stress.

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Manufacturers also of EMPIRE Cream Separators—Gasoline Engines, and Farm Electric Plants

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The Milking Machine Gives All-Round Contentment.

cows. Saves the hire of one man. Thinks machine gets more milk than hand milkers.

J. H. Ellis, Maxwell, has had machine only short time, but has no trouble. Milks 22 cows in 47 minutes. Two heifers started on machine with caked udders were entirely well within a week. Is milking for neighbor a cow whose teat was cut on barb wire and cannot be milked by hand.

Edmond Wyndham, Redding, used milker 16 months on 28 to 35 cows. Milks 18 to 20 cows per hour. Machines milk clean, but he always trics teats when he takes cups off. Has never had a cow injured in any way by machine milking. Two members of family do work that required four milking by hand.

J. P. Casey, Half Moon Bay, installed machines, July, 1915. Cows took to it at once; not necessary to strip. Does not injure cows. Cows milked 1915 and 1916 now freshening with perfect udders. Machine enables him to keep more cows than if he milked by hand.

Rancho Buena Ventura, Cottonwood, used milker three months on 35 cows. Strip only very hardest

ing about one-half pound of milk from each. Unhesitatingly say that machine, if properly handled, cannot injure cows.

C. A. Bacon, Lockeford, using milker third season, finds it great saver of labor (at least one-half) and easier to keep milk clean. While machine will milk clean, finds it better and quicker to strip by hand. Cows stand better for machine than by hand. Machine has never gone on strike or quit job Saturday night. Has noticed no ill effects on cows.

Geo. V. Beckman, Lodi, used milker 4 years, milking 30 cows. Milks in half the time and with greater convenience than by hand. Has not injured cows.

Ten cows of the herd of N. H. Locke averaged 52.99 pounds fat for the month of March. The highest record was 76 pounds made by San Joaquin Lottie. Empress Lass finished her lactation period of 311 days with a record of 11,956.4 pounds milk, 637.1 pounds fat. This record was made under ordinary dairy conditions, milking twice a day, feeding pasture, alfalfa hay and silage and the cow carrying a calf.

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We have some valuable information to impart to you regarding the feeds necessary for your stock. We are in a position to quote you reasonable prices on

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LOS ANGELES

Breeding 10,000-Pound Grade Cows.

[Written for Pacific Rural Press.]

Purebred Holstein bulls and careful selection of cows by milk weighing and testing have made it possible for John Guill of Chico to get more milk from 22 cows than he previously did from 50 when he was using grade bulls. Mr. Guill's cow testing association record books show that during the testing year of 1916-17 his 22 grade Holsteins produced 223,746 pounds of milk and 7,614 pounds of fat, or an average of 10,170 pounds of milk and 346 pounds of butter fat per cow for the 12 months. This production has not been secured by any cross-cutting methods but by persistent effort to improve the herd since

1907 by the use of bulls of known ancestry and pure breeding. Before that time Durham blood predominated in the herd, which was an old one established by Mr. Guill's father in the early 80's.

A great deal of attention has been paid in late years to the dams of the bulls in service and some of the bulls used would undoubtedly have done good service in purebred herds, as their breeding was exceedingly good and their heifers have been heavy milkers. But even with such bulls Mr. Guill does not expect all of the heifers to be good cows. In fact, he figures that not more than 50 per cent are good enough to keep in his herd. This takes into account those that are poor producers, those that have defective udders, are shy breeders, or that are incapacitated in other ways. If a heifer is physically alright and produces 250 pounds of fat with her first calf Mr. Guill considers her good enough to retain, otherwise she is disposed of. She must also pass the tuberculin test; for Mr. Guill long ago began cleaning up his herd of disease and each year weeds out all reactors. By this method he has been successful in practically ridding his herd of disease, his percentage of reactors being lowered each year.

All heifers are grown by Mr. Guill to a milking age, being fed skim milk till they are about five months old together with alfalfa and wild pasture. They are bred when about 18 months old and reserved or discarded after freshening. Not only is this herd one of the heaviest producing herds of grades in the Sacramento Valley, but also one of the best in type, excelling in this respect most herds that the writer has seen in the State.

The milking barn of S. J. Smith in Stanislaus County is made cool in summer by an opening 2½ feet high along its sides back of the cows. This opening is closed in stormy weather by dropping a canvas rolled up on slender sticks.

Purebred beef bulls get stock which makes more beef from what little pasture or hay is available.

CREAMCUP HERD

Breeding animals of both sexes for sale at reasonable prices. A call at the ranch for selection is preferred to pedigree sales.

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Modesto, Cal.



Gertie's Son, Victor, No. 123159
Dam, Victor Lady Lake (R. O. M.) of
536 pounds butter in 303 days as
a 4-year-old.

INVEST in JERSEYS AND START RIGHT

135 Registered Jerseys in my herd,
including 18 Register of Merit Cows,
Blue-ribbon winners at 1916 Hanford,
Bakersfield, and Visalia Fairs.

CORRESPONDENCE SOLICITED.
A. A. JENKINS
TULARE, CALIF.

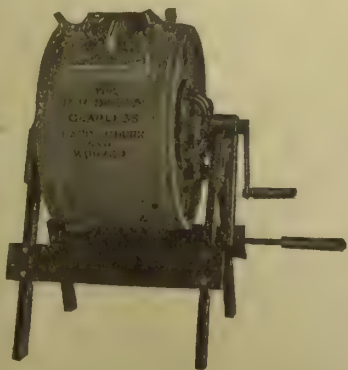
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Pretty Productive Profitable

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IF YOU ARE IN THE MARKET FOR A YOUNG BULL THAT WILL IMPROVE THE TYPE AND PRODUCTION OF YOUR HERD, LET US QUOTE YOU A SON OF ONE OF THE FOLLOWING PROVEN SIRE—

SEGIS PONTIAC DE KOL BURKE—Grand Champion State Fair 1916. His sire and dam both Grand Champions. His dam's record of 124.5 pounds milk a day average for thirty days is the second highest in the world. And best of all, he is transmitting this type and production. His daughters just coming in milk have produced as high as 23 pounds butter in seven days as two-year-olds.

KING MEAD OF RIVERSIDE—The sire of the present State record cow, Aaggie Acme of Riverside 2d, that has produced in 120 days' official test 529 pounds butter and 10,424 pounds milk. She is his first daughter tested at mature age. They average 4 per cent butter fat.

PRINCE GELSCHER WALKER—One of the best bred bulls in the world, and whose daughters have broken six or more State records as two- and three-year-olds.

A few of their sons from high-record dams now available at moderate prices.

Write for Prices and Pedigrees.

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Jersey Bull Calves

Sired by

Pogis 99th of Hood Farm 6th

and out of dams that have made on official test 405 to 551 pounds butter at ages from 1 to 8 years.

A. J. GOODAL
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Advantages and Construction of Silos

[Written for Pacific Rural Press.]

There is hardly a district in the State that does not now claim one or more silos; and their worth is so well evidenced by the past winter's experience that any clear thinking dairyman must be convinced of their merit by his own observation alone.

The silo has developed three functions for itself in California; converting all kinds of roughages into succulent form and preserving them indefinitely; providing satisfactory rotation crops to fit the irrigated farmers' demand for some summer feed crop that can be used in rotating with alfalfa, and furnishing a farm-grown foodstuff that makes a practicable if not theoretically correct supplement to alfalfa hay in the balancing of dairy rations.

The economic importance of silos is not confined solely to irrigated sections, for the early location of the silo in this State was along the coast districts where Indian corn could be grown in the summer months by dry farming methods and put into the silo in the fall. By this means the coast dairyman extends his seasonable supply of succulent feed several months beyond the strictly grass season, and in this manner extends the production period of his cows.

While the fundamental principle of all silos is the same, namely the storing of green feed in an air-tight structure, new types are being introduced each year, with the hope of improving the economical and air-tight-in-all-seasons features.

WOODEN SILOS.

Wood has unquestionably been far in the lead as a silage building material in this State. The three general types of wooden silos which have been put into most general use are the stave type, the resaw and studded type, and the octagon-shaped type.

Of the wooden silos, the stave types seem best fitted to most California conditions. It is true that the resaw and studded type leads all others numerically. This is not due to their superior efficiency, but to the cheapness of construction. Observation leads one to believe that any silo construction which calls for rigid nailing of boards together for the purpose of making an air-tight structure must ultimately fail to be efficient because of the tendency of all lumber to swell and contract in the wet and dry seasons of the year. It is for this reason that makers and users of the stave types lay claim to superiority, arguing that because of the elasticity of their patented extension hoops they can fit the silo to any climatic changes without danger of leakage. Less spoiled silage

is actually found in this type silo, after several seasons' use, than in the rigidly constructed types.

CONCRETE TYPES.

Concrete has been more talked about than used as a silo building material, although concrete has as a whole given general satisfaction on the California farm.

The solid, reinforced wall has been the type most generally accepted by silo builders; but through inexperience in concrete construction this type has often proved unsatisfactory because of cracked walls. This, however, is nothing to their discredit and can be entirely overcome by securing competent cement workers for their construction. Possibly the greatest drawback to the solid-concrete-wall silo in most locations is cost of construction, the average cost being two to four times that of the above mentioned wooden types. Sometimes where gravel is convenient, the cost can be materially reduced. The concrete block silo was introduced several years ago, but has not been promoted to any great extent in recent years. It is little if any cheaper than the solid concrete type and there seems to be more chance of faulty workmanship.

A new type of concrete silo has recently appeared on the market which incorporates the use of concrete staves, ten inches wide, two inches thick and two feet long, with tongue and groove on the sides. These staves are set in courses, the joints being bound with steel bands and the inside walls plastered. They are somewhat less expensive than the solid wall type and have the added advantage that the staves can be made where gravel is plentiful and hauled to the farm in the finished form.

BRICK AND METAL.

The brick silo has not been extensively used in the State although some promotion work has been done in this direction by brick manufacturers, and a few have been built in the past two seasons. They are less expensive than the solid concrete type and apparently just as serviceable.

The metal silos have not been extensively tried in the State, largely due perhaps to the almost prohibitive price of all metals during war times. The few that are in service are characterized as "entirely satisfactory."

A number of good beef steers were received last week by Los Angeles Killers from the McKittrick district in Kern county. Pasture there has been good and the cattle there in good condition and are being marketed quite freely.

MEAT SHORTAGE DESTINED TO BE SERIOUS.

It is doubtless true that it is "impossible to starve America" in the aggregate, but that there will be individual cases of suffering for lack of proper foods is quite probable. Meats are already selling at prices almost prohibitive to the poorer classes, and some form of meat diet is a necessity to physical and mental efficiency. Stock farmers are succumbing to the double temptation of high prices and feed shortage to get rid of their livestock, recking little of their own and the public's future requirements. Hay and mill feeds are selling at hitherto unheard-of prices, and the situation is becoming critical. California is now drawing on her northern neighbors, Oregon and Washington, for hay to supplement her own meager supplies. Farmers should therefore bear in mind that it is as imperative to grow crops for livestock as for direct human consumption. Nor can they be too often warned against parting with their breeding stock. Market your surplus only. Set your wits as well as your hands to work to feed your breeders. Don't kill the goose that lays the golden egg. You will help others by increasing your livestock output to the utmost, and in so helping others you will best help yourself.

AN AYRSHIRE BULL



Will. Peter Pan 21st, No. 16030

Will quickly breed into your herd. Highly desirable and profitable dairy qualities, viz.: Perfect type; health stamina; ability to subsist on short, rough or hilly pasture and produce profitably; supreme quality of product for either butter, cheese or whole milk, etc.

WE HAVE A FINE LOT OF YOUNG BULLS ranging from a few weeks old to yearlings. Several of them out of A. R. cows, or heifers whose dams are in the Advanced Registry. Fourteen head of our milking herd were selected from one of the largest and most prominent Ayrshire herds in the U. S. by H. H. Kildee of the Minnesota University, who judged the breed at the National Dairy Show at Springfield last fall.

OUR HERD BULL IS WILL. PETER PAN 21st, No. 16030, sired by Beuchan Peter Pan, Grand Champion Ayrshire bull of Scotland and America, and also Grand Champion at P. P. I. E., 1915.

WE HAVE SEVERAL CHOICE BULL CALVES Sired BY HIM.

Let us quote you on a desirable young male. Prices most reasonable and within range of any dairyman's pocket book. Correspondence invited.

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SUNNYSIDE HERD HOLSTEINS



Headed by the Wonderfully Bred

SIR VEEMAN KORNDYKE

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His sire has 75 A. R. O. daughters, nine with records over 30 pounds butter in 7 days. His dam, Beatrice Korndyke Veeman, has A. R. O. record of 30.13 lbs. butter in 7 days.

This bull's best daughters will be officially tested as fast as they freshen.

We have 25 A. R. O. cows and 45 heifers and calves.

Lady Leola Hengerveld
Butter, 7 days, 28.08 lbs.; test, 5.2%.

Beautifully marked young bulls from A. R. O. cows with records up to 27.41 lbs. butter in 7 days, are priced right to inquiring purchasers.

We have a splendid herd of

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Prolific and pigs are the easy feeding. Both big and medium type. Sows are early maturing kind.

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The Best Milk Substitute to Use is

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the most successful milk substitute on the market—the standard of perfection. Thousands of farmers are using it and cannot say enough for it. It is NOT a stock food—it's a complete food that long experience has proved to be right for rearing calves. It contains all the nutrition of milk prepared in the most digestible form and is sold on a money back guarantee to give results.

100 lbs. equal to 100 gallons milk—Try it on your calves.

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CARING FOR BLOATED CATTLE.

[Written for Pacific Rural Press.]

Pasturing green alfalfa has been a more general practice this spring than for years past because of the general scarcity of hay in the dairy districts; and as a result bloat has been a problem with many dairy-men.

When we visited J. W. Benoit, Holstein breeder of Modesto, early in April, he was pasturing a check of old alfalfa, but was taking great pains to prevent bloating by keeping the cattle well bunched, so that he could watch them closely. For this purpose he finds a well-trained collie dog almost indispensable and a great labor saver.

After pasturing the herd an hour to an hour and a half, he drives them back to the corral, taking particular pains to keep the water trough closed so that they cannot drink for several hours after they come from pasture. This is on the theory that they are already filled to the limit with gasey feed and that the water would only cause them to bloat easier.

When he finds a cow that is bloating, he takes her immediately to the barn, where he gets her on an inclined platform or bank, with head up. He then throws a couple of handfuls of baking soda in her mouth, which usually relieves the gas pressure at once. In case this fails to bring up the gas, he ties small sticks in their mouths, in bridle-like fashion, this acting as a gag. Sometimes he has put pepper on their tongues with good results, the effect being to get them to move their tongues and gag. When everything else fails, he uses the trocar, which enters the side of the cow at a point where the gas has accumulated.

MAKING BETTER ALFALFA HAY.

Much alfalfa hay is spoiled in the making. Here is the way L. L. Long of Stanislaus county cures and handles his hay so that it is always leafy when fed, regardless of the length of time it has been stored.

It is the usual practice on the Long ranch to cut 40 acres at a time, shocking right behind the mower, so that the minimum amount of moisture will be lost through evaporation.

As soon as the stems begin to dry out, it is hauled to the barn and put into the hay mow while the leaves are still rather moist. While storing, salt is sprinkled over the hay at the rate of about 200 pounds of salt to 100 tons of hay.

By this method the hay goes through a good sweat, the stems being dry enough to absorb any surplus moisture carried in the leaves and thus overcome possible spontaneous combustion. The salt and thorough curing makes the hay very palatable and there is scarcely any loss of leaves in feeding.

The Abelour Ranch Company delivered some polled Angus steers to the Newmarket Company of Los Angeles recently. These steers were mostly two years old and averaged a little over 1,100 pounds and sold for 9 cents weighed in Bishop, netting the owners within a few cents of \$100 apiece.

Always provide your hogs with plenty of clean water, and especially thirty minutes before each feeding.

CUTTER'S
BLACKLEG PILLS

"California's Favorite"
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For the Prevention of Blackleg
in calves and young cattle

Their superiority is due to nearly 20 years of specializing in "Vaccines and Serums only."

Year in and Year Out they give better satisfaction than any other vaccine made, and the cost of a few cents per dose is cheap insurance against a disease that always takes the fattest and best.

Single Pills may be used for ordinary and range stock.

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Use any Injector, but Cutter's simplest and strongest.

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Write for new booklet, "The Control of Blackleg." It tells about Anti-Blackleg Serum which cures Blackleg and may be used simultaneously with vaccine to combat outbreaks and safely protect valuable stock.

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She makes use of every ounce of feed. Her milk is the richest of all the breeds in butter fat and solids. She is rugged and vigorous — will thrive in any climate. She milks steadily. She is beautiful and gentle. She's the mortgage lifter. She's the cow for the everyday farmer, yet she's the rich man's pride, too. And she's the cow for the family.

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Real HOLSTEIN Quality
At Your Own Price

Our offering at the sale at Sacramento, Cal., May 31, 1917, consists of 10 highly bred females and 2 bulls.

One heifer whose first four dams average 34½ lbs. butter in 7 days, sire Spring Farm Pontiac Cornucopia, whose dam was the first 44 lb. cow, her dam a 31.70 lb. cow in our herd, who was sired by a brother to the twice 44 lb. cow Ormsby Jane Segis Aaggie.

A daughter of King Korndyke Sadie Vale, whose daughters are making such high records; her dam an own grand-daughter of Pontiac Korndyke, also De Kol 2nd Butter Boy 3d, both great transmitting sires.

A daughter of King Segis Pontiac, he being the best bred son of the great King Segis; her dam traces direct to Hengerveld De Kol and Pontiac Korndyke.

Seven other heifers equally well bred. Most of these heifers are bred to our herd sire, King Segis Alcartra Abbekerk, whose first eight dams average 30 lbs. butter in 7 days.

The two bulls offered are both fine individuals and highly bred. One whose first six dams average 28½ lbs. butter in 7 days, sire Prince Gelsche Walker.

One a show bull whose dam has a 28 lb. 3-year-old record, with a good prospect for a much larger record; son of a 36 lb. bull.

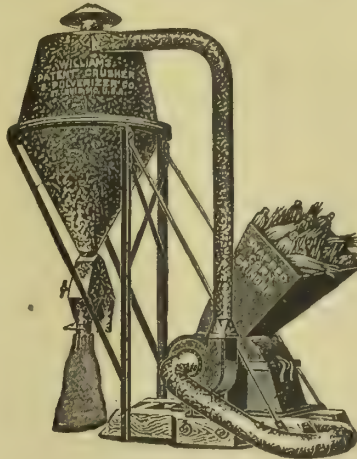
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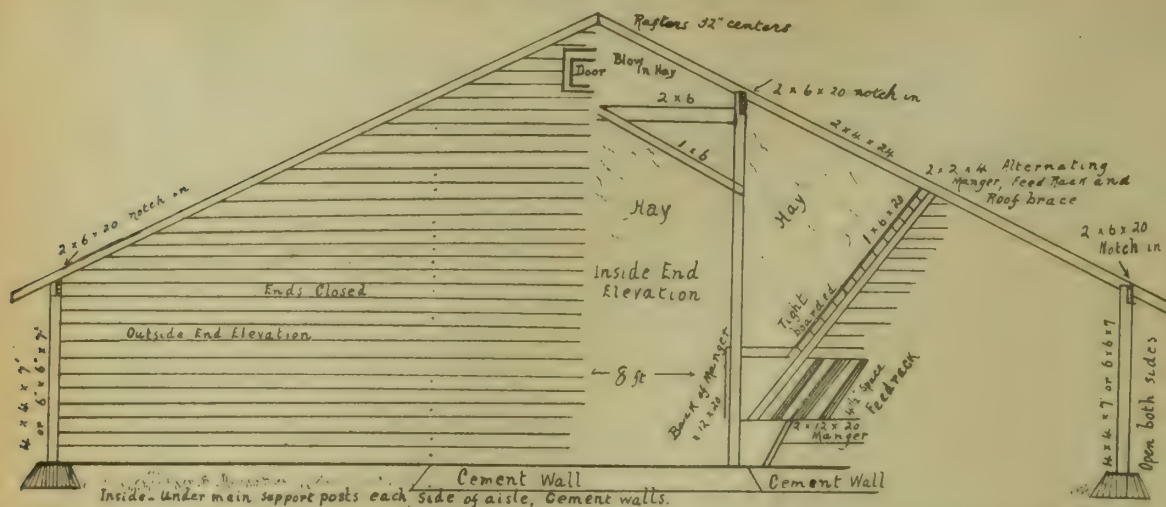
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This Form of Shed for Cows Saves Much Labor and Hay.

[Written for Pacific Rural Press by Jay Dutter, Galt.]



End View of Hay Feeding Shed Which Protects Cattle and Saves Hay and Labor. Boards Not Shown on One Half of End in Order to Show Inside Arrangement.

A great many visitors to the Henderson Company ranch to see the large herd of purebred Holsteins have desired to secure plans of a feeding barn which was planned and built by myself last fall, that gives a large amount of shelter to the stock, reduces the waste of hay, and also the cost of labor in feeding. The waste in hay is less than one-fourth what it formerly was.

The barn is really an addition to our 48 by 120-foot hay barn, but can be built as a unit. It consists of two wings extending at right angles to the main building on each side from the center, forming a cross and affording shelter at all times from the wind at three corners of the building. The corrals are so divided that four strings of cows are handled.

Any size barn like it may be built; it is meant, however, to feed cut hay,

although uncut hay may be fed; but we find it great economy to feed it cut.

The main supports of the building are 4 by 4 inch redwood posts set 10 feet apart, the outside posts being 7 feet high, and the two inside rows 14 feet high, and all of them bedded down in cement; the outside at the top is notched-in two inches, and a 2 by 6 nailed in to stay them lengthwise. To this, the rafters are nailed; each unit of our barn wings is 42 by 50 feet, giving shed room on each side of 16 feet. The center aisle is filled with cut hay to the roof, being cut and blown into a small door at the top and end of building.

Box mangers at the bottom have a feed rack just above, extending enough to be inside the edge of box manger. From there up to the roof is boarded tight, boards running lengthwise, thus forming a slope,

down which the hay slips into the rack when the barn is full, making a self feeder. Sometimes the hay has to be loosened, of course. The frame to which the rack is nailed is 2x4 every two in three, the third upright being 2x6 running from the top of the inside cement wall to the roof, forming a roof support as well as feed rack.

The end of the building is closed, and the sides open, giving an open shelter to the stock, a dry place to feed in during wet weather, and shade in summer. The shed holds 25 tons of cut hay, and will shelter 40 cows comfortably.

The accompanying sketch will help explain the building. I have never seen or heard of one like it. All who see it are greatly pleased with the way it works, and we are well satisfied with the great saving of hay and labor, as well as the shelter afforded.

Silage Corn Follows Oat Hay

[Written for Pacific Rural Press.]

The necessity of every livestock grower to raise a maximum tonnage of feed to the acre this year is more pronounced than ever before; and while it is now too late to entirely duplicate the experience of J. E. Bennett of Keyes, Stanislaus county, on his sub-irrigated land last year, it is suggestive of what may still be done by the use of silos.

In December, 1915, Mr. Bennett planted 14 acres of old alfalfa land to oats, using about 75 pounds to the acre, broadcasted. He harvested the oats for hay about the middle of June, securing 100 loads, which averaged 1,500 to 1,600 pounds per load, or almost five and a half tons to the acre.

Because of the advancing season, he irrigated as soon as possible and put several teams to plowing and harrowing, so that he was able to plant the ground to Indian corn, July 4 to 8, using a white dent variety, and dropping the seed about 16 inches apart in rows 40 inches apart. After planting, he cultivated four times to retain plenty of moisture and by the latter part of October the field was ready to cut for silage.

Mr. Bennett has two 70-ton silos of his own and he filled both of these to their capacity. Still having a surplus of corn, he filled a neighbor's silo of the same capacity to within ten feet of the top. He also sold a half acre of standing corn and used about two acres for pasture till the heavy frosts began.

Besides securing a higher yield of forage from his land than he would have secured from alfalfa, Mr. Bennett was enabled to feed as near a balanced ration all winter as one could wish for, using the oat hay, alfalfa hay, and silage, giving two feeds of each a day. As a result of the variety and quality of feeds, his herd of cows, half of which are heifers with their first calves, averaged a pound of butter fat during the entire winter.

CALVES ATE SPOILED HAY.

[Written for Pacific Rural Press.]

The chronic kicker was sore because in a year of exceptionally favorable weather there was no spoiled hay to feed the calves. J. L. Cramer of Tulare county is not such a kicker; but when rain last September kept ten acres of cocked-up alfalfa hay wet for two weeks, he foraged around for calves. He bought enough at \$10 per head, six to eight weeks old, to eat all of this, as well as a four-ton waste on a 77-ton stack of hay; and he thinks it paid him. The same system could be used for hay spoiled by rain in the spring. But watch the calves for digestive disturbances and remember that they will do better on good hay.

Alfalfa hay or clover hay kept in a rack where the brood sows can have free access to it during the winter months will not only cheapen the feed but help balance the ration.

It Pays to Salt Your Hay When Stacking or Baling

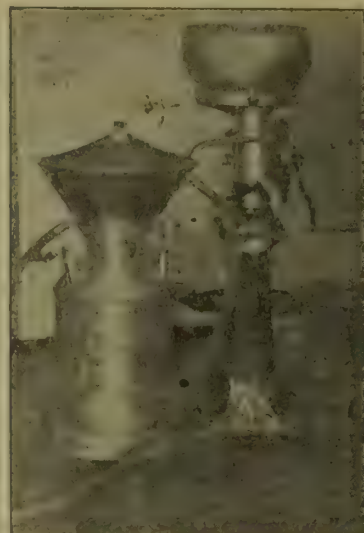
Cattle Eat Up Salty Forage Clean

(From Pacific Rural Press.)

"An ounce of salt a day in the rations is all right for cows," says G. L. Stearns, formerly of the Vina Ranch. This is probably not enough, so there ought to be some stock salt in the yards for cows to eat at pleasure. Sometimes in feeding cows for official test, as much as 3 ounces per day is mixed in the feed. This makes the cows thirsty and they drink more water and produce more milk. But it is necessary to be very careful in feeding salt in the rations, for it is apt to give them the scours and is also likely to cloy their appetite so that they will not eat enough to make a record yield of milk.

Two crops of fodder per year, which the stock eat up clean, are grown by a settler on the Natomas Consolidated project in Sacramento county. He grows purebred Duroc hogs and Shetland ponies, and claims that his oat hay cut early in May yields 3½ tons per acre. Immediately after it is cut, corn is planted; and if this doesn't mature it is cut as fodder when the kernels have dent. The ears are taken off and the stalks stacked in the yard with a large amount of salt which induces the stock to eat it more completely than otherwise. His neighbor, Mr. Jensen, salts his threshed wheat straw, which the cattle eat clean. Leading dairymen use salted alfalfa hay the year round for feeding dairy cows to increase the flow of milk.

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Cross-section of hay stack showing how salt should be applied every 3 feet.

Thirty Years of Good Bulls and Testing.

[Written for Pacific Rural Press.]

The stories of all high-producing herds of dairy cows differ so little in the main that one can almost forecast with exactness the answers that will be brought out from his questioning of the fortunate owners.

Always we are told, "I used purebred bulls, weeded out the poor cows by the use of scales and tester, and saved the heifers from the best cows."

And that is the essence of the story of J. D. Williams' herd of grade Jerseys in Sonoma county, one of the oldest and highest producing herds in the locality.

It was about thirty years ago that Mr. Williams began grading up his herd of Durham cows with purebred Jersey bulls. At that time the Babcock test was unheard of, the cream

gauge being depended upon instead. While this and the lactometer test were only approximately correct, they furnished a somewhat definite method of ascertaining the good and bad cows.

After the invention of the Babcock test, Mr. Williams weighed the milk from individual cows and secured tests more or less regularly from the creamery of which he was director and manager, maintaining as far back as 1895 that a cow which couldn't produce 225 pounds of fat in a year wasn't good enough for him to keep in his herd.

Having an idea of the relative value of his cows, it was not difficult to distinguish between the heifers that were to be saved and those that were to be disposed of, as only those from the best cows were considered apt prospects for the milking herd. But the mere fact that a heifer was from a high-producing cow did not keep her in the herd unless she was also capable of producing. The standard set for such heifers is a pound of fat a day during the ten-month lactation period.

But Mr. Williams does not credit all the good in his heifers to their breeding alone. He believes the way they are handled after they freshen with their first calf has a lot to do with their future usefulness.

Most of his heifers freshen during the fall or winter months; and by the first of July are pretty well along in their lactation period. As feed about that time of the year is usually pretty scarce in the district, it is quite a common practice of other dairymen to dry up the heifers with first calf at that time. But not so Mr. Williams. He believes that the time to make a cow out of a heifer is right at that time; that if fed and milked she can be made a persistent milker in future years; but that if she is starved and dried up she will always be a short time producer.

Operating on this theory, he begins feeding cheap mill feeds to all of his heifers about that time, continuing the practice as long as they will pay their feed bill.

The fact that he is in a hill dairy section does not deter him from year-round milking, the practice being to feed mill feeds, hay, and thousand-headed kale in seasons of dry pastures. Not only does this additional production more than offset the feed cost, but it materially increases the production of the cows when the grass season begins, as they are in good physical condition to make the best possible use of the succulent feed.

A. B. Humphrey of Grapewild Farms reports the sale of a Berkshire boar and sow to L. K. Smith and H. W. Rice of Hawaii; the boar, Fashion Longfellow 30th, to Miller & Lux; a boar and sow to Loma Rica Ranch, Grass Valley; a granddaughter of Grand Leader 2nd to Arlington Smith of Visalia; a boar to Mr. McDermott, Maxwell; six boars to H. L. Bates, Holt; a bred gilt to D. N. Gilmore, Stockton; a boar to A. A. McCoy of Dixon; and a Grand Leader 2nd boar to Homer Hewins of Calistoga.

Pure-bred hogs sell well. The Whitten hog ranch in Tulare county has sold the last of 800 hogs that brought \$35,000.



Dependable Stock Remedies and Foods

Strong, healthy stock is PROFITABLE stock. Increase your profits by freeing your cows, calves, hogs and horses from sickness and disease.

Use "Kew-Kure" for abortion, barrenness, bloody milk, colds, cow-pox, diarrhea, milk fever, tuberculosis, etc.

"Bag Balm"—a soothing, healing, penetrating ointment that produces immediate relief.

"Blatchford's Calf Meal" will raise your calves without milk—at about one-third the price of milk.

We also recommend Conkey's and the International foods, and worm remedies, and Pratt's Animal Regulator—for cows, hogs and horses. Send for free literature.

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Purebred Registered HOLSTEIN CATTLE

The broad highway to success is persistent and intelligent application to something worth while. A successful 60-year-old dairyman said, "I have made the greater part of my money since I was forty-five. Up to that time I was making mistakes. I corrected a host of mistakes and ideas about cows and have made nearly all the money I have since that time." The difficulty is that some dairymen never wake up. Any farmer who will devote a short time to a study of the supremacy of Holstein-Friesian cattle as profitable milk producers and as dual purpose cattle will be able to turn his dairy operations to a profitable basis. Send for free literature. There's big money in the big "Black and White" Holsteins. Send for FREE Illustrated Descriptive Booklets. The Holstein-Friesian Association of America F. L. Houghton, Sec'y, Box 230 Brattleboro, Vt.

PATRIOTISM DEMANDS

That All Butter-Fat Waste Be Stopped

President Wilson's powerful appeal for the conservation of the nation's resources is still ringing in our ears. "The supreme need," he says, "of our own nation, and of the nations with which we are co-operating, is an abundance of supplies, and especially of food-stuffs"; and again, "Upon the farmers of this country, therefore, in large measure rests the fate of the war and the fate of the nation."

Wasteful methods must be abolished. Every device that makes for the saving of time and labor on the farm must be utilized. Every plan that makes for the conservation of our food products must have the farmer's hearty co-operation.

And nowhere is there greater opportunity than in the production of dairy products, particularly butter-fat.

"Fats, fats, fats, more fats," that is the demand of the warring nations in Europe. The men who toil and the men in the trenches must have fats. They are the fuel that the human machine must have.

And no fat is so palatable or so easily assimilated as butter.

When it was simply a question of the farmer's own loss of profit, the tremendous waste of butter-fat on American farms was bad enough, but under present conditions such waste is nothing short of criminal.

And it is wholly unnecessary.

It is conservatively estimated that about a million cow owners in the United States are still skimming milk by some wasteful "gravity" method.

At an average of four cows to the farm, and an average waste of thirty-five to fifty pounds of butter-fat per cow, all of which could be saved by the use of a De Laval Cream Separator, this alone represents an annual waste of at least 140,000,000 pounds of butter-fat.

Then there are, perhaps, a million inferior or half-worn-out separators in use whose owners could save fifteen to twenty pounds of butter-fat per cow per year by replacing such machines with New De Laval's; and this represents another waste of at least 60,000,000 pounds of butter-fat annually.

Also there is the loss of time and labor that a De Laval would save and which could be better devoted to other productive work on the farm. This waste is hard to compute, but it is almost as important as the loss of butter-fat.

These are startling statements, but any dairy or creamery authority will agree that these estimates of waste are really very conservative.

Shall this tremendous waste continue? Will the loyal American farmer permit such waste when he appreciates the duty that is laid upon him to conserve the one article of food that above all others is necessary to the life and health and energy of the men who serve the nation in the field, the factory, the mine—and soon in the trenches?

We have always had an abiding faith in the American farmer, and we believe that if he is made to appreciate the full purport of the President's appeal to him, the appeal will not be in vain; and when he further appreciates what the De Laval can do to save the butter-fat which is now being wasted, and that his patriotic duty demands that such waste be stopped—NOW—our plants will not be big enough to take care of one-half the demand for De Laval Cream Separators.

DE LAVAL DAIRY SUPPLY CO.

61 BEALE STREET, SAN FRANCISCO

Silo Crops and Planting

[Written for Pacific Rural Press.]

The silage possibilities of field-grown crops in this State are not confined to any one crop or group of crops; and as silo experience advances, the list of possible silage crops enlarges.

Corn has always maintained a lead in popularity through the eastern sections of the country because its culture is general for grain and it makes a palatable and nutritious silage. This prestige has led most Californians to depend upon Indian corn as the main silo crop, supplementing it in the early summer with spring-grown crops such as alfalfa, green oats, barley, vetch, and in some few instances wheat.

Like most other crops, the culture of Indian corn varies so widely in different parts of the State that hard and fast rules cannot be set as to planting and care. In a general way the corn growing land can be divided into two classes, the higher lands where moisture must be retained by cultivation alone and the irrigated areas where moisture either through sub-irrigation or direct watering may be relied upon for maturing the crop.

On the dry farmed areas, early plowing and preparation of the land is essential, and frequent cultivations should follow planting as long as practicable. The yield on such land averages about six or seven tons of green feed per acre.

More latitude is allowed the intending corn planter on irrigated land; in fact most of the corn planted on such land follows a previous crop of oats or barley; and in some instances one or two crops of alfalfa may be secured from an old field before corn planting time.

The usual practice is to harvest the oats and barley, either as hay or grain, the latter method being more risky because of the delay in

planting the corn. In normal seasons corn can be planted as late as July, after the hay or grain has been removed and the land irrigated, plowed, and worked down in the interior irrigated sections and still have time to mature sufficiently for silage before the early fall frosts; but it is safer to plant before that date if possible.

SORGHUMS SATISFACTORY.

While poor success has sometimes resulted from the siloing of the sorghums, as compared to Indian corn, it seems evident that it was the methods used in siloing them rather than the material which was responsible. Many silo owners depend entirely upon the sorghums for their silage crop and report satisfactory results. As they are surer yielders in many locations, their more general use cannot be too strongly recommended.

The chief concern of the silo owner who is using sorghum for silage should be to see that it is not harvested too green, preferring to allow the leaves to dry to a considerable extent as the stalk carries more juice than Indian corn and provides sufficient moisture for the fermenting process in itself. By handling in this manner, the silage is not so apt to be sour and distasteful to the cattle.

The culture of the sorghums for silage is nowise different than when grown for grain; and it fits itself to a double cropping system similar to that outlined for Indian corn on the irrigated areas. Earlier planting and cultivation is naturally required on dry farmed land.

The varieties of sorghums, as well as of Indian corn should be selected with an idea of forage they will produce as well as of grain, it being im-

portant that a tall, leafy-stalked variety be planted if the maximum yield of silage is the chief consideration.

While it is not generally considered in the sorghum class, Sudan grass, a sorghum in reality, seems to fit itself to silage making purposes, providing a good pasture early in the summer and maturing before fall frosts, a heavy crop of forage good for silage.

While its feeding value is still little known, it seems probable that it will prove satisfactory, as the stems carry considerable grain when matured.

LEGUME SILAGE.

The price of cured hay will probably greatly lessen the amount of first cutting alfalfa siloed this year; although in other years many silo owners have used the silo advantageously in caring for this first cutting, which was either badly infested with foxtail and other weeds or which could not be cured because of late spring rains. As a whole, such satisfactory results have not been secured with alfalfa silage as with corn or sorghum because of a rather

rank odor and unappetizing flavor characteristic of legume silages. For that reason it is probable that alfalfa will be used very little for silage.

Vetches have not been used to any extent separately as a silage crop, but have been successfully used with barley, wheat, and oats when planted in the winter and siloed during the early summer months.

Pea vines have been siloed successfully in sections where large acreages of peas are grown for the canneries; and with the increased acreage planted to that crop this year, some silo owners are planning to use this by-product for silage instead of using land for silage crops that can be profitably farmed otherwise.

Never have the advantages of the silo been so well demonstrated as during the past winter because of the scarcity of other feeding stuffs; and while it requires some courage to plant land to silage crops that might otherwise produce high-priced cereals and beans, the silo's place on the farm is too well established to permit its neglect at this season of the year.

ACTUAL EXPERIENCE WITH "CALF-WAY" MILKERS

In order to secure material for an article on milking machines in California the Pacific Rural Press wrote to a half dozen users of Calf-way Milkers for the result of their experience. Here is a specimen reply:

HALF MOON BAY, April 16-17.

Pacific Rural Press, San Francisco, Cal.

In July, 1915, I installed a "Calf-way" Milker. I had no trouble at the start-off, the cows took to it kindly. My herd consists of twenty cows and it takes four to six minutes per cow to milk them.

It is not necessary for me to strip the cows after machine, although I try all of them after removing teat cups. It milks the average cow as clean as hand milking. It is a labor saver, more so in large herd. It can be seen that with the adding of more units (uses one double unit) I could milk forty cows in the same time it takes me to milk twenty. I am able to keep more cows than I could if I had to milk them by hand. The machine does not injure the cows in any way whatever. I was told when I installed machine, that it would dry the cows up. I have proved to my satisfaction, that it does not. The cows that I milked with machine in 1915 and 1916, have all freshened now with perfect quarters.

J. P. CASEY.

Equally favorable replies were received from the other five: F. J. Austin, Delevan; Favor Bros., Gonzales; Wyndham Dairy, Redding; J. H. Ellis, Maxwell, and Rancho Buena Ventura, Cottonwood. See article entitled "Milking Machine Experience," in this issue.

We have received many such letters and one from Professor F. W. Woll, in which he states that a Jersey in the University herd milked with a Calf-way milker during last lactation period produced 9052 pounds milk and 587.95 pounds butter fat. His letter concludes as follows: "The fear among some breeders of dairy cattle that it is not safe to use milking machines on purebred cows is gradually being dispelled. Experience has shown that a careful man operating a milking machine may be safely trusted to get all the milk that is in the udder and to secure a maximum production from the cows during the lactation period." The production of Interested Japs Santa, given above, is another evidence of this fact.

If with the present high price of labor you would be interested in a "Calf-way" Milker, send us the number of cows you are milking, with a rough sketch of your barn, and let us figure with you.

CALF-WAY MILKER CO.

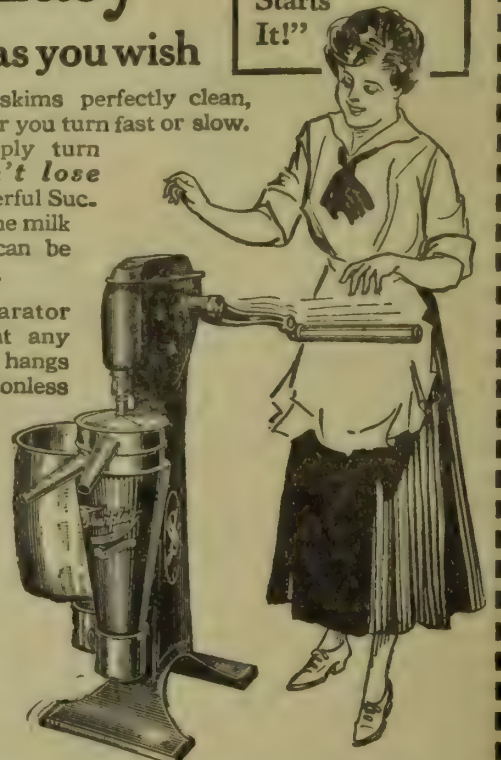
First and Market Sts., S. F.

Turns Easy— and as slow as you wish

"The Weight of
the Crank
Starts
It!"

—for the Sharples skims perfectly clean, regardless of whether you turn fast or slow. So, when tired, simply turn slower—you can't lose cream for the wonderful Suction-feed drinks up the milk only as fast as it can be perfectly separated.

The Sharples Separator runs very lightly at any speed, for the bowl hangs from a single frictionless ball bearing, running in a constant bath of oil, same as the enclosed gears. Again the Sharples Tubular bowl is remarkably light, since it contains no discs whatever. The normal speed of the Sharples is only 45 revolutions per minute—most other separators must be run at 55 to 60 turns per minute, or they lose cream to the amount of 7 to 13 lbs. per cow per year on the average farm. If you drop considerably below 45 revolutions with a Sharples, you will still skim perfectly clean, and get all the cream possible.



SHARPLES SUCTION-FEED CREAM SEPARATOR

Easy to Wash. The Sharples has no discs to be washed—just a simple tubular bowl with one small piece in it. This tubular bowl is broadly patented. A brush cleanses it quickly and it can be put together almost instantly. Its long, narrow shape creates double the skimming force over the disc-filled bowls found in other separators. Sharples is

- the only separator that skims clean at widely varying speeds
- the only separator that skims faster when you turn more quickly
- the only separator that delivers cream of unchanging thickness—all speeds
- the only separator with just one piece in the bowl—no discs, easiest to clean
- the only separator with knee-low supply tank and a once-a-month oiling system

Write today for catalog to Dept. 31.

Sharples Separator Co. - West Chester, Pa.

Also Sharples Milkers and Gasoline Engines.

Branches: Chicago San Francisco Portland Toronto



FLBERT HUBBARD said: "Don't take yourself too damn seriously." Now that's what we call mighty good advice and we try to keep it in mind at all times. Nevertheless, when we look over its splendid record and view the excellent work it is doing, we cannot help being just a bit proud that we are manufacturers of the INDIANA SILO for the Pacific Coast.

The INDIANA SILO has an absolutely clean record behind it, a record established during the past fifteen years by its efficient use on over SIXTY THOUSAND American farms. If you could visit our own big factory, or any one of the five big plants of the Indiana Silo Company, you would easily understand why this record is so good. Back of the Indiana Silo's construction plan lies fifteen years of practical experience in the building of silos exclusively, and in it is used that greatest of all combinations of silo materials—cold-rolled, mild steel hoops, malleable lugs and small parts, and clear, kiln-dried Oregon fir staves. New, mild steel, evenly threaded in our own plant, insures hoops of more than sufficient strength to meet all requirements, and malleable small parts are the best of insurance against broken parts. Oregon fir—clean, clear, straight grained and thoroughly kiln-dried—gives a stave of exceptional strength, great durability and a minimum of shrinkage. Oregon fir is not effected by the silage acids and, if painted on the outside, will last a lifetime. Being exceptionally strong, it will withstand the elements remarkably well. Indiana Fir Silos, if erected according to instructions, do not get out of shape or blow down.

The INDIANA SILO embodies efficiency, economy, durability, strength, convenience and simplicity. Its simple, convenient construction enables us to build it at a cost within the reach of every farmer, yet it includes every essential necessary to satisfactory service and long life. No requirement is omitted, no unnecessary expense added. Everything the best—no extravagance—nothing unnecessary—the least investment—the greatest earning power; these ideas of efficiency are constantly before us. Our faith in the INDIANA SILO is shown by our absolute guarantee, backed by millions of dollars resources. Ask your banker.

Indiana Silos have not advanced in price as yet, for we contracted for our steel supplies last year and our own big mills manufacture our lumber. Nevertheless, our business has trebled this year so far and we may find it necessary to draw on our 1918 supply of steel before the season is over. So our advice is—BUY EARLY. It costs you nothing, protects you against price advances and insures having your silo just when you want it. Won't you let us tell you what size silo you would find most satisfactory, what it will cost you and how much feed it will save? Thank you.

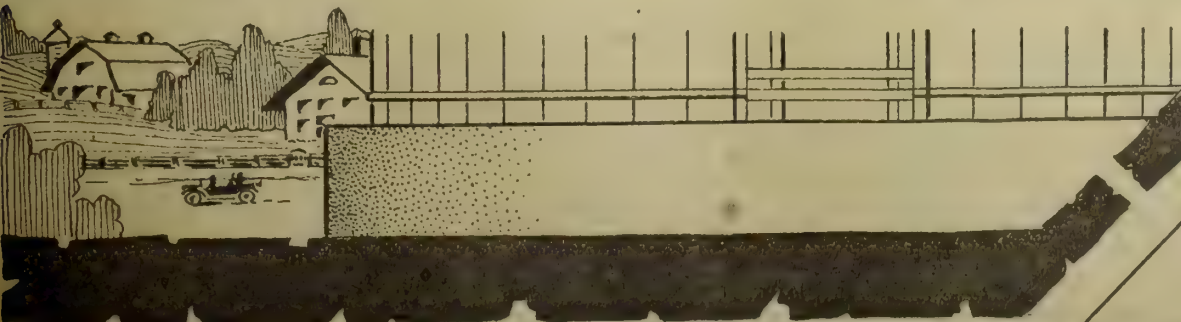
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The Charles K. Spaulding Logging Co.

Owners of the Standing Timber, Logging Camps, Railroads, Saw Mills and Silo Factories

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 Send me your big FREE Indiana Silo book,
 also place my name on your regular
 mailing list for your monthly
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 Address.....

Inexpensive Labor-Saving Dairy Ranch.

One of the most labor-saving and sanitary, yet inexpensive dairy outfits we have seen is that of Geo. H. Ennis and E. L. Williamson in Riverside county, where four strings of grade Holsteins headed by purebred high-record sires produce about fifteen cans per milking, the year through, averaging nearly a pound per day of butter fat through the lactation periods.

The Ennis-Williamson ranch contains about 150 acres, including 100 acres of alfalfa. It seemed necessary when acquired three years ago to get dairy cows to market the alfalfa; and dairy cows would also furnish fertilizer for Ennis brothers' 400-acre citrus orchard not far away.

FEEDS GIVEN IN YARDS AND STABLE.

The cattle are not pastured, but fed hay and green feeds in corrals, and other feeds in the cement-floored, corrugated-iron roofed stable which shelters all of the cows at once during milking.

Year-around succulence is furnished. Last year a 20-acre piece of Indian corn filled a 166-ton wooden silo; and 15 acres more filled another three-quarters full. Seventy-five tons extra cost \$225. The 15 acres were planted, after the corn was off, to barley, which was expected to be heading out early in March when the silage was gone. This was to be mowed and fed green until alfalfa could be fed green in the yards. Green alfalfa would last until the 40 acres of corn to be planted this year could be cut for green feed, and later could be fed as silage again.

In the cement manger of the milking barn, two feeds per day are put in to be eaten during milking. The usual ration per day is the equivalent of 300 pounds silage, 200 pounds beet pulp, and 50 pounds cottonseed meal per string of 30 cows, besides the hay or soiling crops fed in the yard. The silage is hauled on a straight track by car from twin silos to barn.

SLAT RACK SAVES HAY.

When Supt. McCord came to the ranch, the cows in the yard were eating hay "through the fence." When a "boss cow" bunted another while feeding, the other would run off with a bunch of hay, stringing it over the corral. Mr. McCord built V-shaped slatted racks with board manglers under them to catch loose wisps; and he found it a big saving. This was appreciated last winter when the cows had to be put on short rations of 10 pounds per day of high-priced hay.

Two sheds in each corral were made of corrugated iron roofs on rough poles. They face each other so that when their roofs are extended to meet, they will shelter about 44 by 44 feet of ground. This is for the 30 cows kept in each corral, which is about 100 by 150 feet and connected by its own lane to the milking barn. The ground is sandy, but will be better drained by trenches filled with cobblestones. Salt is kept in corner boxes in each corral. An alleyway is provided solely for breeding purposes and a separate corral for a hospital.

MANURE DISPOSAL.

The milking barn has concrete floor, sloping 10 inches in its 100-foot length. The gutters are 16 inches wide and uniformly three inches deep. After solid manure has been hauled by litter-carrier to the

spreader at a distance from the barn, the floor is hosed down from faucets located every 20 feet along the walls. All gutters drain into a concrete septic tank of three compartments. Several hundred gallons per day of stable washings run into this tank and come out as a clear liquid which fertilizes the alfalfa. The solid manure is spread on corn ground.

MILK HANDLED EASILY.

Water pressure is supplied from a tank house near the barn, high up and filled by engine power. In the lower rooms of the tank house are the separator and cooling apparatus. Cans of milk are carried to a platform high enough to pour through a cheesecloth strainer, whence it runs into the milk room over a cooler which cools the milk to 50 degrees, winter or summer. A steam boiler heated by an oil burner furnishes

steam to sterilize utensils. An auto truck hauls the milk to Los Angeles every day for 20 cents per can.

About 50 gallons per day were being separated and fed to calves, whose management makes another story, except that all grade bull calves are cut at three months old, and that 80 surplus heifers were being kept on the orange ranch in February to supply fertilizer conveniently.

THEY KNOW THEIR COWS.

All milking stock has been tested since two years ago last November, even though the Cow Testing Association fell through. Card indexes show at a glance the milk records, blood lines, tuberculin-test records, ages, breeding dates, bull to which each is bred, etc. Mr. McCord carries a field notebook where the daily events are noted and transferred to the cards in a short time each evening. Use of the cards keeps each cow's history all together. The milk records are on separate cards. The cows and calves are identified by metal tags inserted low down in their ears before they are weaned.

"We try to stick to the maxim, 'No cow can linger here that gives less than 300 pounds a year' of fat," says Mr. Ennis. A number of them

produce over 400 pounds; and one, 510 pounds. Mr. McCord and the milkers pointed out one cow that tested 6.8; another that tested 6 per cent; another that gives 10 gallons per day when fresh. Many of them are purebreds not registered.

A magnificent six-year bull, Rowena Maid Mutual, heads the herd, while Prince Gelsche Walker VIII, a three-year-old, is putting spectacular records behind the offspring of 20 heifers bred to him. The Rowena bull weighed well over 2,500 pounds in breeding condition, has a great heart girth, and his pin bones are almost as high and as far apart as his hip bones.

A. Gregory, owner of the Marigold farm, comprising 1,000 acres within two miles of Redlands, reports that at the present time he is milking 125 cows and producing 300 gallons of milk a day. His cattle consists of Holsteins, Guernseys and Jerseys. He expects, however, to start a herd of purebred Holsteins in the near future. He has 400 acres in alfalfa and is well fixed to enter the breeding business in a large and successful way.

The J. S. Gibson Company used milo maize in their silos this year, but found it too rich for the dairy cows. All the cows conditioned on it failed to make records equal to their former seven days' records. They will feed milo green after this.

A GREAT HOLSTEIN EVENT

COMPLETE DISPERSAL OF THE STANFORD HERD.

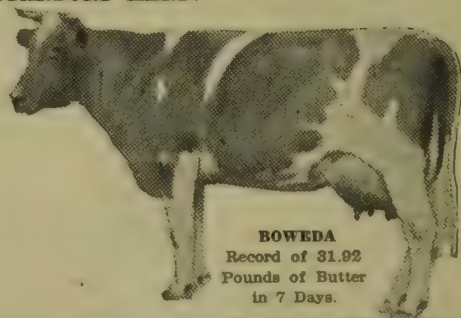
AUCTION at Vina, Cal.

(near Chico)

June 5, 6, and 7

9 a. m. Each Day

By order of the Board of Trustees of Leland Stanford Jr. University, the unequaled herd of 300 registered purebred Holstein-Friesians on the Stanford Ranch at Vina, California, will be sold to the highest bidder, June 5, 6 and 7.



One of the Many Great Individuals

AT EACH DROP OF THE HAMMER SOMEBODY'S HERD WILL BE IMPROVED.

Intelligent breeding, by the infusion of grandest blood strains, has developed this herd, established by the late Governor Stanford in the early 80's, until it is without a peer.

This sale offers unexcelled opportunities to secure cows of wonderful capacity and bulls of character. All tuberculin tested and free from abortion. Just study these offerings:

40 GRANDDAUGHTERS OF KING OF THE PONTIACS.

The only bull with two 40-pound daughters and the only bull with a 40-pound daughter and a 40-pound granddaughter. He also has a 41-pound 3½-year-old granddaughter.

40 GRANDDAUGHTERS OF COLANTHA JOHANNA LAD.

Another wonderful sire with two daughters that made over 750 pounds of milk in 7 days; 30 of them averaged over 600 pounds of milk in 7 days; 8 of them made records of from 30 to 34 pounds of butter in 7 days.

20 GRANDDAUGHTERS OF SEGIS PONTIAC DE KOL BURKE.

Leading sire of the Morris herd and one of the best bred bulls in the world. He was senior and grand champion at the California State Fair in 1916.

40 A. R. O. COWS AND MANY OTHERS THAT WILL DO AS WELL OR BETTER ARE TO BE SOLD FROM THIS HERD THAT HAS NOT BEEN DEPLETED BY SALES. THIS STOCK HAS THE GREAT GROWTH POSSIBLE ONLY ON THE PACIFIC COAST AND IS ACCLIMATED. WHY GO EAST FOR UNCERTAINTIES?

Advanced Breeders, Dairymen, Beginners: The blood of these black and white aristocrats is almost invaluable. Can you afford to miss this sale?

300 IN ALL AND INCLUDING MANY SHOW ANIMALS. STANDING OF INDIVIDUALS IN THE HERD ENTERED IN STATE COW COMPETITION WILL NOT BE AFFECTED BY CHANGE OF OWNERSHIP.

For catalog or further information, write

AUCTIONEERS
COL. BEN A. RHOADES
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M. H. TICHENOR, Sale Manager.
PALO ALTO, - - CALIFORNIA

Special Trains Between Chico and Vina Each Day of Sale.

BUYS COWS AND BULLS BY TEST

[Written for Pacific Rural Press.]

It is very seldom that a better example can be found of the benefits which result from using the Babcock tester and scales and the use of herd sires out of high producing cows than on the H. H. Wallis dairy on the west side of Stanislaus county.

Mr. Wallis began dairying eleven years ago. Among the first things he bought was a pair of scales and a Babcock tester. In buying his foundation herd he purchased twice the number he expected to milk on the theory that he would have to do a lot of weeding out. In this he was not disappointed, for inside of two weeks he had culled out half of them as undesirable and in six months he had another third cut out. Since his first purchases he has also insisted upon weighing and testing the milk of each cow for a couple of weeks before buying. He has paid as high as \$100 a head for his pick of a herd, when the average price for cows was but \$65. At that, he considers that he has made money by buying the high-priced cows; for they pay a good profit, while many times the cheaper ones would only pay for their feed and sometimes not even do that.

In buying cows in this manner he insists upon a four per cent butterfat test and does not consider a cow an extra good one unless she produces 40 pounds of milk per day under ordinary dairy conditions, when reasonably fresh. He figures that first-calf heifers of his own breeding should make 400 pounds of fat the first year and with this kind of stock he is able to develop aged cows that produce as much as 600 pounds of fat a year.

While Mr. Wallis attributes a great deal of the credit for this production to his scales and tester, believing that they are just as necessary as the milk pail on every dairy, he also appreciates the value of purchasing bulls out of high testing dams for use on his cows.

With the exception of one of his herd sires which was out of a three-teated cow and whose record was lowered on that account he has always had bulls out of cows that produced 32 pounds of butter or better in seven days, all of them being registered Holsteins.

But high weekly production is not the only factor which Mr. Wallis considers when buying purebred bulls for use on grade cows; for it has been his experience that the butterfat test of a bull's progeny is almost certain to decrease in percentage when the bull's dam is a low tester and almost sure to be increased if the bull's dam is a high tester. As he is a firm believer in higher testing Holsteins, he always demands bulls with high testing ancestors; and in this way he has gradually increased his test to its present high level.

Except in cases where cows are abnormal producers, Mr. Wallis has never fed anything but alfalfa hay, supplementing it in some few cases with dried beet pulp so his high average yields are directly attributable to his weeding out and breeding practices.

Included in the consignment of the Bridgeford Company to the California Holstein breeders' sale is a 2-year-old heifer, Spring Farm Cornucopia Ormsby, whose four nearest dams have records averaging 34½ pounds.

THE DE LAVAL LINE

Dependable Dairy Equipment That Has Made Good.

DE LAVAL CREAM SEPARATORS



The New 1917 De Laval marks the greatest advance in separator construction in the last thirty years.

LARGER CAPACITY
CLOSER SKIMMING
LONGER LIFE

NO ADVANCE IN PRICE.

IDEAL GREEN FEED SILO

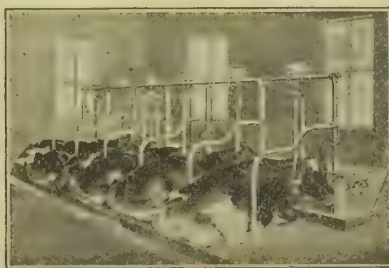


You will find that the features of vital importance in a silo are of better design and better constructed in the

IDEAL GREEN FEED SILO than in any other silo manufactured.

20 Years Experience in Silo Building is behind the IDEAL GREEN FEED SILO.

SANITARY BARN EQUIPMENT



Cow Comfort

Steel Stalls
Stanchions
Litter Carriers
Feed Trucks
Bull Pens
Calf Pens
Hog Pens

DeLaval Dairy Supply Co.

Everything for the Dairy.

SAN FRANCISCO, CALIF.

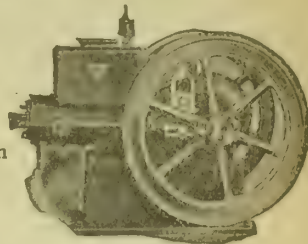
ALPHA DISTILLATE ENGINES

CAN BE DEPENDED ON 365 DAYS IN THE YEAR AND 24 HOURS A DAY.

Fine Workmanship
Perfect Balance
Last for Years.

You will feel secure with an Alpha on the job.

SIZES 1½ TO 100 H. P.



ACME FEED CUTTER AND SILO FILLER

FILLS THE HIGHEST SILO—MAKES AN EVENLY CUT SILAGE THAT PACKS WELL.

All Steel
Frame.

Built in
Seven Sizes



VIKING ROTARY PUMPS

A high-efficiency, positive delivery pump that will pump large quantities of water to high elevations.

SIMPLE AND DURABLE
EASY TO INSTALL



CATALOGS SENT ON REQUEST

DE LAVAL DAIRY SUPPLY CO., SAN FRANCISCO

Gentlemen:—

Please send me catalog of your.....

Name.....

Address.....

MAXIMUM CROPPING OF FORAGE CROPS.

Securing spring pasture, a crop of barley and a crop of silage from the same land in one year is what E. E. Freeman of Modesto has done on his 40-acre ranch the past two seasons.

He plants his barley in the winter, on sub-irrigated, sandy soil, and in 1916 was able to pasture it for five weeks before quitting to allow it to grow for hay. This year he only pastured about a week on account of the backward weather. Last year he harvested a 30-sack crop of barley from the land before planting to corn.

When he began harvesting the corn for silage the middle of September he had more than enough to fill his 50-ton silo, so turned the stock into the field where they grazed on the green corn stalks till the first of December.

At a meeting of the directors of the Bodega Cow Testing Association it was decided to charge the members 70 cents per cow for the season of ten months ending Sept. 1, 1917. Some time ago the Dairyman's Bank of Valley Ford presented the association with \$60 to be given in prizes. The National Bank of Sebastopol presented \$40 for the same purpose.

Do You Want World Record Breeding ?



King Korndyke Hengerveld Ormsby 7th.

Grandsons of Pietertje Maid Ormsby.

Record: 7 days, 35.56 pounds; 30 days, 145.66 pounds; test, 5.31 per cent. World's record when made.

Duchess Skylark Ormsby.

1506.36 pounds butter in one year, present world's record.

Write for Pedigrees and Prices.

MODESTO FARMS

MODESTO.

CALIFORNIA

BULLS = Shorthorns = HEIFERS

REGISTERED AND TUBERCULIN TESTED.

Animals of either sex ready to deliver in car lots or singly.

H. L. & E. H. MURPHY,

Perkins, Cal

Live Stock and Dairy Notes

Livestock breeders all over the State are invited to send on postal cards, notes regarding their sales, State and County Fair intentions, new stock, etc.

The Dairy.

A. W. Morris & Sons Corporation have withdrawn their consignment from the Sacramento sale.

Sunnybrook ranch, Willets, reports the sale of an 8-months old registered Holstein bull to Ellis rancho, Gilroy.

W. L. Mitchell of Napa has just received from Wisconsin two bred heifers sired by Merry Maiden's 3rd Son.

A. B. Humphrey of Escalon reports high tests being secured from five of his Guernsey cows. Sales of young bulls have been good.

The Sacramento-Yolo Cow Testing Association reports 11 cows as having produced over 52 pounds of butterfat for April. Highest, 63.2

The Gridley Cow Testing Association reports 11 cows as having produced more than 55 pounds of butterfat during April. Highest, 63.6.

The San Francisco Dairy Exchange has voted to suspend operation of the rule allowing trading in futures.

Manufacturers of canned milk have assured the Navy Department of a sufficient supply to meet the needs of the navy.

F. Stenzel recently sold to H. L. Pylman of Sacramento county a young Holstein bull sired by Dutchland Sir Pietertje Creamelle and out of a 24-pound 3-year-old.

Dairymen of the central counties have organized the Central California Milk Producers' Association. Dairymen say that the price of milk has not increased in two years' time, while in the same period of time the price of feed has gone up by leaps and bounds.

Hereford Breeders to Organize.

A meeting of purebred Hereford breeders was held at San Francisco May 2, at which steps were taken to form a Coast organization. The meeting was attended by about thirty breeders and short talks were made by nearly all present. A committee of seven was appointed to draft constitution and by-laws and the organization will be completed at the State Fair, at Davis, May 29. The committee named was: Prof. G. H. True, W. D. Duke, D. O. Lively, Wm. Madden, H. H. Gable, D. B. Harris, E. B. Bemmerly.

Great Production for Gibson Holsteins.

The first six cows of the J. S. Gibson Company's Holstein herd to finish yearly tests made the following records:

Winnie Korndyke Cornucopia De Kol, age 9 years: Milk, 31,034.2; butter, 1,201. Princess Jetze, age 9 years: Milk 19,981.8; butter, 786.9. Mary Acme of Oakwood, age 7 years: Milk, 17,977.3; butter, 702.2. Hazel Aaggie of Oakwood Daughter, age 3 years: Milk, 21,208.5; butter, 860.9. Inka Tritomia Walker, age 2½ years: Milk, 21,237.6; butter, 816.1. Princess Niko Mechthilde, age 2 years: Milk 11,773.9; butter, 620.4. Average milk, 20,535.5; butter, 831.2.

More Records for A. W. Morris & Sons.

A. W. Morris & Sons Corporation report records as follows:

Aaggie Acme of Riverside 2nd, strictly official record, 150 days: Milk, 12,769.9; fat, 524.11; butter, 655.14. Molly Dekol Pontiac Mead, senior 2-year-old daughter of Segis Pontiac De Kol Burke; Butter, seven days, 20.23. Changeling Tidy Abbecker Gem: Butter, seven days, 34.74; butter, 30 days, 139.63; best seven days' milk, 750 pounds. Pauline Creamelle Mercedes: Butter, seven days, 30.25. Susie Dekol Canary Mercedes Burke: Butter, seven days, 28.90. Miss Dutch, a thirty-pound daughter of the 1,000-pound cow, Miss Blaney, has completed a year's record of 25,600 pounds milk and 1,025 pounds butter.

A Good Hereford Sale.

Bulls sold surprisingly well at the first California public sale of Herefords last week. Fifteen head brought an average price of \$466. Cows and heifers averaged \$307. Altogether fifty-four head were sold for \$18,970, a general average of \$351.

The sale was held at the D. O. Lively stock farm, Mayfield, and the consignors, beside Mr. Lively, were A. B. Cook, Townsend, Montana, and F. D. Tintinger, Park City, Montana. The buyers were J. D. Canary, Saratoga, Wyoming; W. J. Bemmerly, Woodland; Benj. Quigley, Linne; Chas. Rule, Jenner; J. A. Bunting, Centerville; Henry Struve, Watsonville; S. R. Crowe, Hayward; Rancho Del Canon, La Honda; Sierra Vista Vineyard Co., Minturn; Wm. Burgess, Amador; H. H. Cable, Esparto; N. B. McGahan, Stanford University; E. U. Buddicke, Roseville; W. D. Duke, Likely; A. L. Lillencrantz, Hol-

El Dorado Herd Reg. Holsteins



Colona Johanna Hartog 148031
Butter (7 days), 28.36 lbs.

A FEW BULL CALVES FOR SALE AT
REASONABLE PRICES.

Alex Whaley, Prop.

Tulare, Cal.

Headed by PONTIAC DE KOL BURKE LUIT, whose dam, Luit Burke, made 32.76 lbs. butter in 7 days and 120 lbs. in 30 days. His sire's dam was Riverside Sadie De Kol Burke, one of the greatest milk and butter producers of the breed.

Young bulls of this combination are worth considering when you are purchasing a herd sire.

Do You Want Long Distance Backing?

We have a son of the California State Champion three-year-old for sale. Born October, 1915; Sired by PRINCE ALCARTRA KORNDYKE, whose dam is TILLY ALCARTRA.

The Dam of this young bull is not a fifty-lb. cow, but she has to her credit 21,208 lbs. milk and 860 lbs. butter in one year, which is the largest record ever made in California by a Junior three-year-old.

If you are in the market for a bull, it will pay you to visit our ranch and see what we have to offer—at prices that will surprise you.

J. S. GIBSON CO., Box 97, Williams, Cal.

"THE NAME GIBSON INSURES QUALITY."

DAIRYMEN

These are the days when you need help that is reliable.



A 3-UNIT HINMAN OUTFIT costs less than the pay and board of one hired man for six months.

Write for Catalog and estimate of outfit for your needs.

C. F. Daniells

Distributor

HINMAN MILKER

HUGHSON, CALIFORNIA

Your Success Depends Upon Your Herd Sire

Why not secure a Holstein bull from EL PREDA WAYNE COLANTHA, the only living bull whose dam and sire's dam average 5.1 per cent fat? I am now offering BULLS FROM HIGH TESTING DAMS AND BY THIS GREAT SIRE.

Call or write

J. W. BENOIT,

Route C, Box 183, Modesto, Cal.

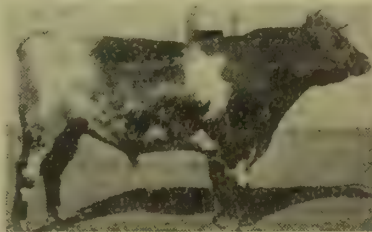
We Have Some Young

Registered Holstein Bulls

for sale from 6 weeks to 2 years old. These are sired by our herd sire, Ruby Gem Canary Lad, No. 98609. Their dams are all heavy producers, one being Miss Plebe De Kol Colantha, No. 199519.

SUNNYBROOK RANCH, Willits, Cal.

INNISFAIL DAIRY SHORTHORNS



GLENSIDE ROYAL 408155.

Our herd of registered Shorthorns has been carefully selected from the leading milk producing strains of the breed and is being developed along the same lines in our hands. The herd is headed by

GLENSIDE ROYAL

a prize-winner at the 1913 International and grand champion at Panama-Pacific Exposition.

Sired by him and out of large cows of good milk production, we offer for sale a few choice young bulls.

Our entire herd is tuberculin tested.

Alexander & Kellogg, Suisun, Cal.

Farm on Grizzly Island.

Rossmead Holsteins

Offering TWO FINE YOUNG BULLS sired by CREAMCUP FIDESSA CORNUCOPIA DE KOL and out of cows that are big producers and will establish records. Write for full particulars and prices.

F. D. Ross, Prop.

Hanford, Cal.

A. R. O.

Purchase your needs from tested dams. Our herd sire's dam and her sire's dam have an average test of 5.09. Please compare with other sires.

Gotshall & Magruder

Registered Holstein-Friesians

RIPON,

CAL.



Pacific Guernsey Herd

Cattle selected from best Imported and Advanced Register Stock. Now Offering Choice Bulls.

C. S. RASMUSSEN,

Loleta,

Calif.

lister; H. Talle, French; W. M. Marshall, Los Angeles, and Mayo Newhall of San Francisco. Mayo Newhall secured the two highest priced bulls for \$1,000 and \$750 respectively. The highest priced cow went to W. J. Bemmerly for \$800.

Holstein Breeders Entertained at Napa State Hospital.

Though not largely attended by Holstein men, the meeting of the California Holstein Breeders' Association at Napa State Hospital on May 5 was a very pleasant and enjoyable affair. An excellent lunch was served in the cow barn, while the hospital orchestra dispensed sweet music. F. J. Kiesel, president of the association, presided, and speeches were given by Emmet Phillips, president of the Board of Managers, Napa State Hospital; J. F. Neylan, president of State Board of Control; Judge Thos. Lennon; Assemblyman Bismark Buck and other dignitaries. President Phillips stated that they were getting more and better milk now than they got from twice the number of cows before they began breeding up the herd. Credit was given to Manager Owen Duffy for his work in developing the Holstein herd, the up-to-date dairy plant and the general productiveness of the 19,000 acres constituting the institution's farm.

A. W. Morris in his talk predicted prosperity for dairymen and breeders on account of the class of men going into the business and co-operative organizations. At the close of the banquet visitors were shown through the dairy plant and through the hospital wards.

High-Priced Dairy Bulls.

[Written for Pacific Rural Press.]

The foundation stock of the Holstein herd owned by McAlister & Sons at Chino, Cal., was secured by an importation in January, 1916, of four express carloads of cattle from New York. This was the largest shipment of fine cattle ever brought into California, over 100 head, costing over \$70,000, on which the express bill alone was \$4,000. In it was the herd sire King Segis De Kol Korndyke, purchased for \$10,000, who was at the time the highest priced bull in the West, but who has had to resign this honor in favor of the bull, "It," who was the former junior herd sire in the Steven Bros.' herd. "It" and King Segis De Kol Korndyke are being used exclusively to all of the cows in the McAlister herd. King Segis De Kol Korndyke is the sire of the first 40-pound heifer under full age and the present world's champion 4-year-old in the thirty-day division; while he is also the only sire with a 40-pound daughter to have a son with a 40-pound daughter. "It" is from the same dam, Pontiac Clothilde De Kol II. "It" has had five 2-year-old daughters to freshen thus far, one making 23.92 pounds in the hands of a small breeder, who had never previously made an A. R. O. record. Another made over 21 pounds and the other three all made over 19 pounds. He has over fifty A. R. O. daughters to freshen in the next two years, about half of whom will be from 30-pound cows.

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SWINE.

Poland-Chinas.

MAKE BIG MONEY with our famous Whitten Ranch Big Type Poland-Chinas. Prolific breeders and profitable feeders. Grow rapidly, fatten quickly. Top the market at 225 lbs. in six months. Make greatest profit for feed consumed. Prices reasonable; satisfaction guaranteed. Send for free illustrated book, "Hogs for Profit." Finest ever issued. Packed with valuable information; tells how to become successful. Ranch in Tulare County, but address owner, R. E. Whitten, 610A Security Building, Los Angeles.

LARGE NUMBER of excellent young boars ready for immediate service. Weanlings of either sex. Sired by Joker, first prize boar at Wisconsin State Fair, 1915. Sows and gilts, sired by Iowa Wonder and bred to Joker and Sunnydale's Chief. For prices and further information write Geo. A. Smith, Corcoran, Cal.

BOARS of serviceable age all sold. We have a few choice gilts bred to John Henry; an exceedingly choice boar. Also have a fine lot of Fall pigs, either sex. Bar N Ranch, E. A. Noyes & Son, Props., Sutter, Calif.

REGISTERED POLAND-CHINAS—Young boars ready for service. Weanling pigs, both sexes. Prices attractive for quick sales. J. H. Cook, Paradise, Cal.

CRAWSHAW'S CALIFORNIA CHINAS are prolific and profitable. Can fill your order for weanlings, either sex, for \$15.00 each. J. A. Crawshaw, Hanford, Cal.

LAKESIDE STOCK FARM POLAND-CHINAS are money-makers. Satisfaction or money refunded. Geo. V. Beckman & Sons, Lodi, Cal.

NOW BOOKING ORDERS for Spring pigs, either sex, from my prize-winning, large type Poland China hogs. H. I. Marsh, Modesto, Cal.

POLAND-CHINAS—Big type combined with quality. Choice bred sows, gilts, boars. W. D. Trehwhitt, Box 82A, Hanford, Cal.

REGISTERED POLAND-CHINA SWINE—Prize-winners. Finest stock in the State. \$20 up. M. Bassett, Hanford, Cal.

POLAND-CHINA HOGS—Large type. 200 lbs. in 6 months. I guarantee to please you. O. L. Linn, Linview, Modesto, Cal.

BIG-TYPE POLAND-CHINAS—Stock from the best herds of the Middle West. N. Hauck, Alton, Humboldt Co., Cal.

REGISTERED POLAND-CHINAS and Duroc Jerseys. Cholera immune for life. T. H. Beckman, Lodi, Cal.

POLAND-CHINAS—Three extra fine boars, one large and two medium type. W. Bernstein, Hanford, Cal.

POLAND-CHINAS—Large type. The Browning Stock Farm. W. H. Browning, Woodland, Cal.

POLAND CHINAS—A few gilts left at \$15 each. Edward A. Hall, R. F. D. 1, Watsonville, Cal.

REGISTERED POLAND CHINAS—J. H. Hansborough, Route A, Modesto, Cal.

REAOAKS RANCH herd of registered Poland-Chinas. W. J. Hanna, Gilroy.

Berkshires.

GRAPEWILD FARM BERKSHIRES—World's Fair Grand Champion Grand Leader 2nd heads our herd, not only himself a champion, but the sire of Champions. At the 1916 California State Fair his daughters won first in all of the senior sow classes, including the Grand Champion Sow. At the 1916 Oregon State Fair a Grand Leader sow was Junior Champion. We are offering a number of choice boars of exceptional breeding and are also booking orders for Fall pigs. A. B. Humphrey, Escalon, San Joaquin Co., Cal.

CHOLERA IMMUNE BERKSHIRES—A dandy 750-lb. son of Star Value, \$75; sons of above ready for service, \$35; fine September gilts, \$30; November Ames Rival boars, \$25 to \$30; three months' pigs, \$15 each. All bargains. All registered. Order now and get choice. W. H. Waugh, Riverside, Cal.

REGISTERED BERKSHIRES—Progeny of Improver B. Young stock now ready for sale. Start your herd with breed and strain of established reputation for California conditions. Geo. G. Meckfessel, Berlin, Cal.

BERKSHIRES—I have one of the best herds on the Pacific Coast, including Grand Champion Sow, Reserve Grand Champion Boar under one year, Third Aged Boar, etc. Frank A. Brush, Santa Rosa, Cal.

EFFICIENCY FIRST BERKSHIRES—Ten firsts, all championships Nevada State Fair, 1916. Laurel Champion and Grand Leader breeding; any age. Joseph Wilson, Jr., Mason, Nevada.

IMMUNIZED NORMANDY BERKSHIRES—Good type. Breeding stock, any age, for sale at all times. Cast iron guarantee. Arlington Smith, Visalia, Cal.

REGISTERED BERKSHIRES—Special offering. Three service boars at prices to move them quick. Write us. Imperial Stock Farm, Morgan Hill, Cal.

ROSE CREST BERKSHIRES—Rivals Champion Best Blood Open and bred gilts. Service boars. F. L. Hall, Ferris, Cal.

CARRUTHERS FARMS BERKSHIRES—Cholera immune. Second annual sale August 2, 1917. Mayfield, Cal.

MODEL HERD BERKSHIRES—Bred for size and quality. Weanlings and gilts. J. L. Gish, Laws, Cal.

HOPLAND STOCK FARM—Registered Berkshires. Prices on application. Hopland, Cal.

REGISTERED BERKSHIRES—Geo. M. York, Modesto, Cal.

BERKSHIRES—Fair Oaks Ranch, Willits, Cal.

Duroc-Jerseys.

FIRST PRIZE HERD—Comprising the three most noted families of the breed, Golden Model, Crimson Wonder and Colonel. Offering line bred show winners and show prospects in each family as good as can be found in United States. Also weaned pigs. Seeing is believing. It will pay you to investigate this offer. Haden Smith, Woodland.

RANCHO RUBIO DUROCS—Only a few September gilts left. One coking good Fall Boar by Orion Model, son of the last International Grand Champion. Place your orders now for weaned boar pigs. Best I ever raised. Elmer Lamb, Ceres, Cal.

REGISTERED DUROC-JERSEYS—Service boars from prize-winning stock are money-makers. They grow faster. New England California Corporation, Ripon, Cal.

CROLEY'S BALANCED HOG FEED—the cheapest feed to fatten hogs. Write Geo. H. Croley Co., Inc., Live Stock Supplies, 631-637 Brannan St., San Francisco.

DUROC JERSEYS—Sow and boar pigs from Registered Stock. Low prices. Delta Farm and Live Stock Co., Colton, Cal.

DUROC JERSEYS—Herd boars. E. N's Colonel and Tulare Boy. Sweepstakes winner at Fresno, 1915. Choice breeding stock. J. F. Walker, Visalia.

REGISTERED DUROCS of guaranteed breeding. All ages. Weaned pigs, \$10. H. E. Boudier & Son, Napa.

HEAVY BONED DUROCS—A few service boars for sale. Ormondale Co., Route 1, Redwood City, Cal.

REGISTERED DUROCS—Crimson Wonder stock. Young stock, both sexes. L. D. Collins, Denair, Cal.

REGISTERED DUROC-JERSEY SWINE—Both sexes. Big-boned type. E. F. Kendall, Hanford, Cal.

WINTON DUROC-JERSEY FARM, Winton, Cal.—High-class purebred hogs, both sexes, any age.

BIG TYPE DUROCS—Quick maturing. Easy keeping. Frederick M. Johnson, Napa, Cal.

THE DEVILBISS HERD of large type Durocs. J. M. Devilbiss, Patterson, Calif.

DOS HERMANOS REGISTERED DUROCS—Duveneck & Pickersgill, Ukiah, Cal.

DUROC-JERSEY REGISTERED HOGS—River Bend Farm, St. Helena, Cal.

REGISTERED DUROCS—Either sex at all times. W. P. Harkey, Gridley, Cal.

REGISTERED DUROC-JERSEYS—S. S. Southworth, Napa.

Yorkshires.

LARGE YORKSHIRES—The ideal hog for the progressive farmer. Young stock for sale. A. L. Tubbs Co., Calistoga, Cal.

Chester Whites.

BILLIKEN HERD OF CHESTER WHITES—The type that is ready for the market in less than seven months. The easy feeders and big producers; sold out of bred gilts and service boars; October farrows to offer as follows: 8 boar pigs and 18 sow pigs; these are from 6 different litters and 3 different sires. Order now before these are all sold. Description and prices on application. C. B. Cunningham, Mills, Cal.

REGISTERED IMPROVED CHESTER WHITES—Grizzly Bear Ranch, East Auburn, Cal.

Essex.

LITTLE BLACK ESSEX—New crop nearly ripe. A few fine youngsters left. L. W. Mill-sap, Yolo, Cal.

Hampshires.

BELLA VISTA HAMPSHIRE SWINE—from prize-winning stock. J. W. Henderson, First National, Berkeley.

Tamworths.

BEAVER LODGE TAMWORTH—Service boars. Write for prices and pedigrees. A. G. Lane, Amsterdam, Cal.

DAIRY CATTLE.

Holsteins.

FOR SALE—From 1 to 70 extra fine, straight well-marked, light-colored, registered Holstein heifers, from 8 to 20 months old. Those old enough are being bred to a first-prize son of Prince Gelsche Walker, whose dam has a high yearly record. Some of these heifers are sired by bulls whose dams have from 35 to 37 pound records. They carry the very best blood of the breed and are good enough for any herd anywhere. Prices to fit any pocketbook. Geo. A. Smith, Corcoran, Cal.

GRANDSONS OF HENGELVELD DE KOL and out of A. R. O. cows for sale. Prices reasonable. Write for pedigrees. Many years of constructive breeding has made my herd one of the prominent ones of the San Joaquin Valley. R. F. Guerin, Visalia, Cal.

REGISTERED HOLSTEINS—Grandsons of King Segis and o.w.s. record cow Creamie V. B. Will build up the production and value of your herd. Write or call and see them. F. H. Stenzel, San Lorenzo, Cal.

FOR SALE—Two registered cows, one with record 24.59. Sister to other one made 23-10 as a two-year-old. Both bred to a 30-lb. sire. Geo. Koumas, Modesto.

TULARE GUERNSEY AND HOLSTEIN Farm is offering young bulls of both breeds. Excellent breeding. Prices reasonable. W. J. Higdon, Tulare, Cal.

THE MCLOUD RIVER LUMBER CO., McCloud, Cal.—High-class thoroughbred Holstein bulls for sale. Write for prices and pedigrees.

J. H. HARLAN, WOODLAND, CAL.—Breeder of Registered Holsteins. Sold out at present. Watch for announcement on King Valdessa.

PACKWOOD FARM HOLSTEINS—Fine young bulls of serviceable age out of tested A. R. O. cows. W. F. Mitchell, Visalia.

TWO SERVICEABLE SONS of Colantha Sir Pontiac Aagie for sale. Moorland Farm, K. W. Abbott, Milpitas, Cal.

THE HENDERSON CO.—Breeders and importers. Registered Holsteins. Sacramento Bank Bldg., Sacramento.

BREEDERS OF REGISTERED HOLSTEIN cattle and Berkshire pigs. Whittier State School, Whittier, Cal.

REGISTERED HOLSTEINS—A. W. Morris & Sons, Corp., Importers and Breeders, Woodland, Cal.

FOR SALE—Registered Holstein bull, son of Prince Gelsche Walker. D. H. Beagles, Napa, Cal.

CREAMCUP HERD—Registered Holsteins; Pontiac bull calves. M. Holdridge, Modesto, Cal.

REGISTERED HOLSTEIN BULLS, \$50 to \$150. Glorieta Stock Farm, Woodland, Cal.

BREEDERS OF REGISTERED HOLSTEIN Cattle—McAlister & Sons, Chino, Cal.

GOTSHALL & MAGRUDER—Breeders of Registered Holstein-Friesians. Ripon, Cal.

CHOICE HOLSTEIN bulls for sale. No females. Millbrae Dairy, Millbrae, Cal.

REGISTERED HOLSTEIN BULLS for sale. C. L. Morse, Route B, Modesto, Cal.

REGISTERED HOLSTEIN-FRIESIAN CATTLE—J. M. Campbell, Escalon, Cal.

REGISTERED HOLSTEIN BULLS for sale. Sunnybrook Ranch, Willits, Cal.

REGISTERED HOLSTEIN CATTLE—E. E. Freeman, Route B, Modesto, Cal.

BREEDER OF HOLSTEIN-FRIESIAN CATTLE—Dr. Ben Stetson, Napa, Cal.

A. R. O. HERD OF HOLSTEINS—Alex. Whaley, Tulare, Calif.

FOR SALE—30 first-class milk cows. Address Occidental Dairy, Menlo Park.

Jerseys.

N. H. LOCKE CO., LOCKEFORD, CAL., Jerseys. Bull No. 432, born Dec. 2, 1915. Sire, King's Valet; Dam, Derrien's Lassie of L. She produced 604.6 lbs. fat in 351 days at 4 years. Price, \$200. Bull No. 491, Oct. 20, 1916. King's Valet—Sunshine of L. 56.9 lbs. fat third month. Price, \$100. Records made under dairy conditions at a profit. Service bulls and bull calves with profitable production breeding. Prices, \$50 and up. Poland-China boars. Big Wonder, over 400 lbs. A good breeder, \$50. Chester White Swine—Boars and Gilts.

VENADERA HERD OF JERSEYS offers calves from Register of Merit Cows with official yearly records. Write for list of bulls. Guy H. Miller, Route 1, Modesto, Cal.

CHOICE REGISTERED JERSEY FEMALES—Fresh and Springers. Breeding and individuality the very best. McLouth, Orland, Cal.

BREEDER OF REGISTERED JERSEY Cattle—Duroc Swine. Young stock for sale. W. J. Hackett, Ceres, Cal.

JERSEY BULLS—Sons of Gertie's Lad and Gertie's Son's Victor. A. A. Jenkins, Tulare, Cal.

YOUNG REGISTERED JERSEY BULL Calves at reasonable prices. O. J. Ames, Oakdale.

REGISTERED JERSEYS—Young bulls and bull calves. T. B. Purvine, Petaluma, Cal.

JERSEY BULLS from Register of Merit cows. C. D. Hayworth, Modesto, Cal.

Guernseys.

YOUNG REGISTERED GUERNSEY service bull. Fine condition. Bred by University Farm at Davis. May Rose and Glenwood blood, backed by A. R. records. Tuberculin tested, gentle. Guaranteed active breeder. \$150 f. o. b. cars Willows, Cal. For particulars address, C. W. Hutton, 3618 Kingsley St., Oakland.

PACIFIC GUERNSEY HERD—Cattle selected from the best imported and Advanced Register Stock. Now offering choice bulls. C. S. Rasmussen, Loleta, Cal.

EDGEMOOR FARM GUERNSEYS—First in the show ring and in official records. Few animals of either sex for sale. Edgemoor Farm, Santee, Cal.

REGISTERED GUERNSEY BULL—No. 24342 from A. R. and imported stock. Write for prices and pedigree. A. G. Lane, Amsterdam, Cal.

TWO REGISTERED GUERNSEY BULLS—A. R. Breeding; of serviceable age. Also a few bull calves. E. R. Frey, Byron, Cal.

BELLA VISTA GUERNSEYS—Males from A. R. dams, \$100 up. J. W. Henderson, 1st National, Berkeley.

Ayrshires.

AYRSHIRES—Registered—75 head. All ages. Young stock for sale. Le Baron Estate Co., Valley Ford, Cal.

FAIRVIEW AYRSHIRES AND DURHAMS—Bred for quality. Choice young stock. Geo. Fay, Sheridan, Nevada.

AYRSHIRES—Registered; all ages. E. B. McFarland, 412 Claus Spreckels Bldg., San Francisco.

BEEF CATTLE.

FOR IMMEDIATE SALE—15 registered Shorthorn bulls, one year to three years of age. Grand individuals in good flesh, fashionably bred from high-class sires and dams. Also two registered Percheron stallions—cheap. Apply: Wm. Bond, Mowry Station, near Newark, Cal.

SCOTCH AND SCOTCH-TOPPED SHORTHORNS—We have the largest herd of straight Scotch cows in California. Foundation stock of both sexes for sale; also a choice lot of range bulls. Barco Ranch, Hollister, Cal.

D. O. LIVELY STOCK FARM, INC., 216 Hobart Bldg., San Francisco, breeders of Hereford cattle. A few choice heifers for sale. We buy and sell livestock on commission. Farm at Mayfield, Cal.

REGISTERED YEARLING SHORTHORN Bulls—Heavy-boned, thick-meated Scotch and Scotch-topped breeding. Ormondale Co., Route 1, Redwood City, Cal.

BREEDERS OF REGISTERED SHORTHORNS—Milk strain. Choice young stock for sale. John Lynch Ranch, Box 321, Petaluma.

REGISTERED AND UNREGISTERED—Shorthorn bulls for sale. Paicines Ranch Co., 320 Sharon Bldg., San Francisco.

INNISFAIR DAIRY SHORTHORNS—Registered young bulls for sale. Alexander & Kellogg, Suisun, Cal.

HOPLAND STOCK FARM—Registered Shorthorns. Prices on application. Hopland, Cal.

REGISTERED HEREFORDS—H. H. Gable, Diamond G Ranch, Esparto, Cal.

SIMON NEWMAN CO., Breeders of Registered Herefords, Newman, Cal.

GEORGE WATTERSON—Breeder registered Herefords. Bishop, Cal.

SHORTHORNS—Carruthers Farms, Mayfield, Cal.

SHORTHORNS—Fair Oaks Ranch, Willits, Cal.

SHEEP AND GOATS.

F. A. MECHAN ESTATE, Petaluma, Cal.—Breeders and Importers of Shropshire, Rambouillet and American Merinos, both sexes. Also Red Polled cattle. Take electric car at Petaluma or Santa Rosa for Live Oak Ranch.

KAUFKE BROS., WOODLAND, CAL.—Breeders and Importers of Hampshire sheep.

DORSETS AND ROMNEYS—Dorset ram lambs for sale. John E. Marble, Los Angeles.

BISHOP BROS., SAN RAMON, CAL.—Breeders and Importers Shropshires.

CHAS. KIMBLE—Breeder and Importer of Rambouillets. Hanford, Cal.

HORSES AND MULES.

HORSES—For sale, 3 and 4 year-old Percherons. Broke and matched, \$250 to \$300 per span. S. L. Skaggs, Madera, Cal.

REGISTERED SHIRES—Black Hawk Stock Farm, Importers and Breeders. Easton & Ward, Proprietors, Burlingame, Cal.

MISCELLANEOUS.

CROLEY'S BALANCED DAIRY FEED—the cheap milk producer; and Croley's Calf Meal—the best California calf raiser. Geo. H. Croley Co., Inc., 631-637 Brannan St., San Francisco.

BUTTE CITY RANCH—Shorthorns, Shropshires, Cholera Immune Berkshires and Ponies. Special offering of sows, pigs and bulls. Butte City Ranch, Box P, Butte City, Glenn Co., Cal.

WANTED—Young heifer calf, pure bred Guernsey or Jersey. Address, stating age, price and breeding, P. O. Box 67, Los Altos, Cal.

FOR SALE—Twelve choice well-marked, high grade young Holstein cows. N. E. Mulich, Willows.

FREE, FREE RANGE, State, Government land, any amount. Booklet free. Joseph Clark, Sacramento.

Exercise and Wallows for Hogs.

[Written for Pacific Rural Press.]

Many times the show points on a purebred hog are characterized as "breeders' fancies" by market-pork producers; but in the main these points are based upon some good utility purpose. In no case is this more emphasized than in the bone development of breeding stock, for unless a meat-making animal has good, hard bone he is unable to withstand heavy forcing at fattening time.

The trick in developing good, heavy, hard bone in hogs is to furnish them exercise rather than keep them penned up in small lots, according to J. M. De Vilbiss of Patterson, Stanislaus county, who raises purebred Duroc Jerseys. To his mind the California farmer has exceptional opportunities in this direction because of the large areas of alfalfa which he possesses.

In his own operations Mr. De Vilbiss uses alfalfa fields both as a valuable food supply and as a bait to his hogs to get them to exercise. This latter feature is made possible by a long lane which leads from the hog pens to the alfalfa field, built purposely with the idea of making the hogs walk a long distance to green feed and an equally long distance back to water and shade.

When supplemented with grain, Mr. De Vilbiss believes that alfalfa pasture is worth \$75 an acre to the market hog raiser, and much more to the breeder of purebreds because of the increased value of his stock because of their registration.

Another feature which Mr. De Vilbiss has worked out in practical operation on his ranch that should be of value to the hog raiser in the warm interior valleys is providing a

wallow and a clean supply of drinking water.

In the first place, he doesn't believe in allowing hogs to wallow in cold water, thinking that they should have warm water the same as humans. He has also found that where a shade is provided over a wallow many hogs will lie by the hour in the water during warm weather, with the result that they contract rheumatism.

To overcome these objections he built a shallow wallow of concrete with a wall around three sides about 12 inches thick. The top of this wall was grooved out to form a drinking trough, the water being clean and fresh at all times. A disinfectant is used on the wallow at all times.

On one side of the wallow, but some distance away, a low thatched roof was built, with open sides, and on the other side a similar protection from the sun, with boarded-up walls, was erected. This with the intention of allowing the hog to use his own judgment as to the kind of shade he needed most after his bath; and it has been Mr. De Vilbiss' observation that certain hogs prefer one kind of shelter and others a different kind.

The practicability of his plan of developing big, strong bone is shown by the weight of his herd sire, Crimson Wonder II, who carries 800 pounds at two years of age without any indication of weak pasterns.

PIGS POT-BELLIED ON ALFALFA.

[Written for Pacific Rural Press.]

Pigs become pot-bellied when they run on alfalfa alone, is the experience of J. L. Cramer of Tulare county, also Harry Chamberlin of Sutter county, and others.

Mr. Cramer has 55 pigs 60 to 140 pounds that run on alfalfa and get 20 pounds of corn twice a day, to keep them from eating too much alfalfa and to strengthen their frames. He expects to increase the grain ration materially for two weeks before putting them into the fattening pen about June 15. Then he can market them before stubble hogs come in.

At the last meeting of the Duroc Jersey Swine Breeders' Association of Stanislaus county, held at Modesto, a talk was given by C. H. Connor, County Farm Advisor, on the "Food Values of Farm By-Products." He showed how by utilizing the waste products, such as sweet potato culls, canteloupes, pumpkins, fruit, etc., we can cheapen our hog ration and increase pork production at a good profit. He showed how the skim milk which is being sold to casein factories at 18 to 20 cents per cwt., if fed to hogs would displace grain to the value of 40 to 60 cents.

C. T. Thompson of Inyo county reports purchase of Pilot Defender, Duroc boar, from McKee Brothers of Kentucky. Pilot Defender was sired by Defender, a boar that was grand champion at the International Livestock Exposition held at Chicago in 1909 and 1910. Mr. Thompson has also another excellent Duroc boar in California Keen, recently purchased from the University Farm at Davis.

MONTELENA HERD

Large Yorkshire Swine

THE IDEAL HOG
FOR THE
PROGRESSIVE FARMER



MONTELENA BIG DICK,
First Aged Boar and Reserve Grand
Champion.

Won 9 Prizes
With 8 Entries
at Sacramento.

Young stock
for sale — both
sexes.

A. L. Tubbs Co.
Calistoga, Calif.

Grape Wild Farms Berkshires.

Who that has seen Grand Leader 2nd, the Grand Champion Berkshire Boar at the Panama-Pacific International Exposition, at the head of our herd for the past three years, has not been impressed with his outstanding qualities, his heavy bone, great depth, and scale? And who that has seen his get, numbering hundreds—on our farms, both at Escalon and Mayhew—has not been impressed with his prepotency?

Who that has seen and followed his winnings and the winnings of his production at all the Fairs where shown has not been impressed with the consistent and unsurpassed strength of that prepotence?

Therefore, what more natural when we parted with this great animal recently to a prominent Eastern breeder than that we should stand by the blood lines that have proven so successful through this boar's influence, and purchase another animal bred by his sire, the Great Superbus? And we now wish to announce—

We have purchased from W. S. Corsa of Gregory Farms, White Hall, Illinois, at as high a price possibly as was ever paid for a yearling boar, Royal Superbus No. 220200, to head Grape Wild Farms herd at Escalon. He is sired by Superbus and was not only First Prize Junior Boar at the Chicago International last year, but was also one of the young herd winning Second Get of Sire and similar honors for Produce of Dam.

Royal Superbus has already proven his Breeding power during the short time he was used by Mr. Corsa, and his get shows both smoothness and type in an impressive manner. A litter mate of Royal Superbus is owned by the Oklahoma Agricultural College, having been personally selected by Dean Carlisle, and another litter mate has been used in the herd at Illinois Agricultural College.

We have in our herd numbers of Brood Sows selected through years of careful breeding and a number of choice daughters of the Champion Grand Leader 2nd; will be bred to Royal Superbus to go through our Public Sale Ring in August, announcement of which will be made later.

OUR ENTIRE HERD IS CHOLERA IMMUNE.

Grape Wild Farms

Escalon, Cal.

A. B. Humphrey, Prop.

Gombault's Caustic Balsam

The Worlds Greatest and Surest

Veterinary Remedy

HAS IMITATORS BUT NO COMPETITORS I

SAFE, SPEEDY AND POSITIVE.

Supersedes All Cautery or Firing. Invaluable as a CURE for

FOUNDER,
WIND PUFFS,
THRUSH,
DIPHTHERIA,
SKIN DISEASES,
RINGBONE,
PINK EYE,
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BONY TUMORS,
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SPAVIN,
QUARTER CRACKS,
SCRATCHES,
POLL EVIL,
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REMOVES

BUNCHES or
BLEMISHES,
SPLINTS,
CAPPED HOCK,
STRAINED TENDONS.

SAFE FOR ANYONE TO USE.

We guarantee that one tablespoonful of Caustic Balsam will produce more actual results than a whole bottle of any liniment or spavin mixture ever made. Every bottle sold is warranted to give satisfaction. Write for testimonials showing what the most prominent horsemen say of it. Price, \$1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use.

The Accepted Standard
VETERINARY REMEDY

Always Reliable.

Sure in Results.



None genuine without the signature of
The Lawrence-Williams Co.
Sole Proprietors & Distributors for the
U.S. & CANADA. CLEVELAND, O.

NOTHING BUT GOOD RESULTS.

Have used GOMBAULT'S CAUSTIC BALSAM for more than 20 years. It is the best blister I have ever tried. I have used it in hundreds of cases with best results. It is perfectly safe for the most inexperienced person to use. This is the largest breeding establishment of trotting horses in the world, and use your blisters often.—W. H. RAYMOND, Prop., Belmont Park Stock Farm, Belmont Park, N.Y.

USED 10 YEARS SUCCESSFULLY.

I have used GOMBAULT'S CAUSTIC BALSAM for ten years; have been very successful in curing curb-bites, capped hock and knee, bad ankles, rheumatism, and almost every cause of lameness in horses. Have a stable of forty head, mostly track and speedway horses, and certainly can recommend it.—C. C. CHAMBER, Training Stables, 800 Jennings Street, New York City.

Sole Agents for the United States and Canada.
The Lawrence-Williams Co.
"TORONTO, ONT. CLEVELAND, OHIO."

The Army's Requirements in Horses and Mules.

The passage of the selective draft measure by Congress makes certain the immediate preparation and equipment of an army of at least a million men in 1917. All preparations are being made for a war that will last three years, for, regardless of what civilians may think, army officials do not expect an early ending to the war into which the United States has been drawn. The requirements of cavalry, infantry and artillery regiments in horses and mules are set forth in a letter just received by the writer from the War Department, Washington, D. C., to be as follows:

Cavalry regiment—1,541 horses, 152 draft mules, 29 pack mules, 6 riding mules.

Infantry regiment—69 riding horses, 112 draft mules, 25 pack mules, 6 riding mules.

Artillery regiment—1,097 horses, 88 draft mules, 4 riding mules.

These are minimum requirements, and do not take into account transportation trains required to forward supplies from terminal points to field bases. In other words, the number of animals specified above refer only to those actually needed with the troops.

The war strength of a regiment of infantry is approximately 1,500 men; of a regiment of cavalry approximately 1,300 men; of a regiment of artillery consisting of six batteries of four guns each, approximately 1,146 men. While definite information as to the proportion of infantry, cavalry and artillery to be included in the new army is not yet forthcoming, it is generally understood among army officials that an artillery battery of four guns will be allowed for each 1,000 infantry. It seems probable, therefore, that the first one million men placed under arms by the United States will be composed of 500 regiments of infantry totaling 750,000 men, 125 regiments of artillery totaling 143,250 men, and 100 regiments of cavalry totaling 130,000 men, making a grand total of a little over 1,000,000 men. The proportion of artillery certainly will not be less, and may be more, as actual warfare on European battlefields has demonstrated that overwhelming superiority in the artillery branch of the service is essential to efficient operation by the infantry.

It may be argued that there is no probability that the United States will prepare 100 regiments of cavalry, but in view of the danger from the Mexican situation it appears to be the belief of well-informed army officers that at least that many cavalry regiments will be provided for in this year's mobilization.

To equip 500 regiments of infantry will require 34,500 riding horses, 56,000 draft mules, 12,500 pack mules, and 3,000 riding mules. One hundred and twenty-five regiments of artillery will require 137,025 horses, 10,000 draft mules, and 500 riding mules. The equipment of 100 regiments of cavalry will necessitate 154,100 horses, 15,200 draft mules, 2,900 pack mules, and 600 riding mules. The total number, therefore, required for the equipment of 500 regiments of infantry, 125 of artillery, and 100 of cavalry, will amount

to 325,625 horses and 100,700 mules.

The Army has at present only 70,000 head of horses and mules. This means that approximately 350,000 head of horses and mules must be bought within the next six months. No information has yet been received from the army authorities in regard to how the purchase of these horses and mules will be made. In the judgment of experienced horsemen, however, the purchase of so large a number of horses and mules within the limited time available can best be accomplished by setting a definite price to be paid by the army for the dif-

ferent animals that will pass inspection for their respective classes, and by establishing ten or fifteen inspection points where horses and mules may be tendered for inspection. This will permit dealers, large or small, or even farmers, to consign their horses directly to inspection points with definite information in regard to what they will obtain for them if they pass inspection. There seems to be no good reason why the producers of horses should not be permitted to sell them directly to the Government, if they pass inspection, instead of being obliged to sell them through some intervening contractor. It is earnestly to be hoped that the army officials will decide on some general plan.

It must not be forgotten that the

allied nations are still in the market, and will continue to be. Their need for horses and mules is as great as for guns and ammunition; indeed, even more so, because they can manufacture the guns and ammunition in their own countries, but their resources in horses and mules have already been exhausted, and the United States is the only source from which they can obtain additional supplies. 853,116 head of horses and 289,062 head of mules have been exported, practically all of them for war purposes, during the thirty months ending March 1, 1917. In spite of the shortage of ships, 40,000 head of horses and mules were shipped in January, 1917, and more than 27,000 head in February, 1917.

WAYNE DINSMORE.

== Fair List Prices ==  == Fair Treatment ==

GOODRICH

BLACK SAFETY TREAD TIRES

Must Make Good

WHEN a Goodrich Black Safety Tread Tire is sent from the factory of the B. F. Goodrich Company, it carries Goodrich's avowal that it is free from imperfection of material and workmanship.

It is the best non-skid fabric tire, the oldest, largest, most skillful rubber manufacturer can make.

It *must* render service worthy of the good name it bears—the high service Goodrich requires of it.

If, as occurs in rarest instance, it fails, the B. F. Goodrich Company is more eager than you that its shortcoming be made good.

Fair Treatment Open-Handed

The B. F. Goodrich Company *courts* honest fault-finding with its tires. Goodrich Fair Treatment will meet these complaints with adjustments, quick and square,—will make these adjustments gladly and generously.

It will not permit a Goodrich patron to feel that a Goodrich tire owes him anything. *It wants back any Goodrich tire you feel owes you anything.*

The B. F. Goodrich Rubber Co., Akron, O.

Also maker of the tires on which Dario Resta won the official 1916 National Automobile Racing Championship—Silvertown Cord Tires.



Order through your Dealer

"Best in the Long Run"

Third of Cows in Best Dairies, Boarders.

[Written for Pacific Rural Press by Carl J. Williams.]

This report is made up from herds belonging to dairymen who have remained in the San Joaquin County Farm Bureau Cow Testing Association for an entire year's test during the last year and a half. During this time over one thousand individual cows have been tested; but no satisfactory records could be obtained for a great many of them as they were not in the association long enough. This report covers practically the full lactation period of 636 cows belonging to 12 dairymen:

Herd	Under 200	200 to 250	250 to 300	300 to 350	350 to 400	400 to 500	500 to 600	600 to 650	Over 650	Total
1	25	10	27	10	7	3	1	1	83	
2	14	9	8	3	1	1	1	1	34	
3	39	25	25	15	6	1	1	1	111	
4	7	6	3	3	1	1	1	1	20	
5	10	17	16	4	1	1	1	1	48	
6	1	11	6	1	4	1	1	1	24	
7	7	12	16	18	13	3	1	1	69	
8	4	15	6	5	1	1	1	1	30	
9	1	8	4	2	1	1	1	1	15	
10	28	10	18	7	1	1	1	1	63	
11	52	16	11	1	1	1	1	1	80	
12	26	8	14	4	5	3	1	1	60	
Total	214	147	154	71	38	12	1	1	636	

One cow produced over 600 pounds of butter fat during 12 months, and proved in a class by herself as no other cow came within 175 pounds of her mark. Of the 636 cows tested, 422 or 66.3 per cent of them paid a profit over the cost of their feed and care and 214, or 33.7 per cent, failed to pay for their keep.

In working out the cost of keeping a cow, 200 pounds of butter fat at an average price of 30 cents a pound, or \$60, is taken as the cost of feeding a cow a year. The value of her calf and manure is used to cover the cost of her care and milking. Interest on the investment or her depreciation is not included in the \$60, which is a very low figure for the cost of feed when it is figured at present market prices.

The average lactation period of the 214 cows which produced less than 200 pounds of butter fat in a year was about eight months. The shortest lactation period taken was four months; and there were several boarders which milked the full 12 months. A great many of these

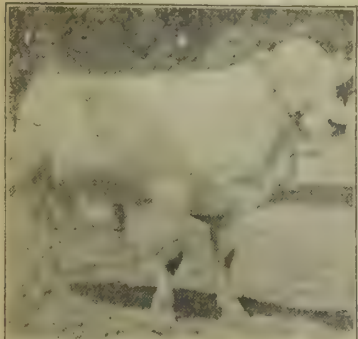
boarders were sold after six months test, which was sufficient in all cases to detect them. Some of them are being held over for a second trial, as they were taken sick during their period of test and did not have a fair chance or else they were heifers with their first lactation period and are being tried again.

The work of the association is a great success and will do great things for the dairies of this county. One of the main troubles is that it is being used only by the best dairymen, who need it the least. If 33 per cent of the cows in the best dairies in San Joaquin county proved to be boarders last year it is no wonder that there is a cry among the others that there is no money in the dairy business. There should be 214 cows above the 600 pound mark instead of below the 200 pound mark. A 600 pound cow pays \$120 above the cost of her feed while a 200 pound cow is kept at a loss.

There is money in most any business if it is run on an efficient basis, and the dairy business is no exception. The keeping of books and the use of scales and the Babcock tester is as essential on a dairy as the use of scales and a bookkeeping system in a grocery store. Know what your product costs you to produce and you will know whether you are being cheated by your commission men or creamery or by your cows. A check on a full year's production of your individual cows is the only way to determine just what they are doing. The Cow Testing Department of the Farm Bureau was formed to do this work on the most economical basis possible. If you are not a member you had better look over the above report and figure out if you can afford not to be.

A two and a half million irrigation project is well under way in Victor valley which will ultimately furnish water for 30,000 acres of land.

INTRODUCING OUR YOUNG SIRE Toyon Valdessa Hengerveld, 184353



Son of

KING VALDESSA

and out of a 30-lb. 4-year-old. His dam and sire's dam averaged 36.16 lbs. butter in 7 days.

J. H. HARLAN CO.
WOODLAND, CAL.

Leonard Farm Jerseys

Blood representatives of Interested Prince, the leading imported bull in the Registry of Merit, 41 daughters, Fox Marigold, Exile, King, and Golden Lad strains. Bulls for sale from Registry of Merit cows. Write for information.

W. J. HACKETT, Ceres, Cal.

Dutchland Sir Pietertje Creamelle's

Ten First Daughters in Milk have average records of 20 Pounds as two-year olds or younger.



MARIE CLOTHILDE PONTIAC CREAMELLE
Junior 2-year-old record: Milk 391, Butter 22.52, Test 4.6 per cent.

Two of These are California Champion Two-Year Olds



PAULINE INKA DE KOL CREAMELLE
Senior yearling record: Milk 423.4, Butter 24.43 lbs., Test 4.62 per cent.

This wonderful record is convincing proof that this young herd sire transmits his big production and high test breeding.

You Need Some of His Blood in Your Herd

To bring up your butter fat production and increase your profits.

I am offering a few young bulls sired by him, out of big producing dams, and just ready for service, at reasonable prices.

WRITE OR CALL AND SEE THEM.

F. STENZEL, San Leandro, Cal.

BREEDER OF HIGH TEST HOLSTEINS.

STEYBRAE FARM AYRSHIRES



WILL VESTA 4TH
Grand Champion at 4 State Fairs.

My herd of 100 head consists of Selected Animals from the best herds in the U. S. and Canada. In the individuals production is combined with show ring type.

ANIMALS OF BOTH SEXES AND ALL AGES FOR SALE.

E. B. McFARLAND

SAN MATEO, CAL.

Importer and Breeder of Ayrshires (the Perfect Cow).

PACKWOOD HOLSTEINS

AND

POLAND CHINA HOGS

All cows have A. R. O. records. Sire, Pontiac Wayne DeKol, 15979, Son of Riverside Sadie De Kol Burke. Write or call and see our stock.

WALTER F. MITCHELL,

Visalia, - - - California



FIDESSA HELENA
152737
Milk 606.9, Butter 31.68, Test 4.2.



The Jersey Blood You Need

Young Calves of both sexes sired by

VALET'S PETER OF L. 115734
(shown herewith)

His dam, San Joaquin Letty, is owned by N. H. Locke Co. and made 76 lbs. fat last month.

WRITE FOR INFORMATION.

O. J. AMES, Oakdale, California

Raising Poultry for Profit

TURKEY DISEASES.

(Continued from Last Week.)

LICE.

The next thing which gets turkeys, or perhaps one should put it first, is lice. They seem to attack turkey poults in greater force than chicks, perhaps because the turks are so quiet and peaceable. And lice weaken the poults so that they have little resisting powers for any other troubles that attack them. So we should take more pains to keep the lice down. Once a week something should be applied to young turks, or to the hens they run with, in order to keep them free from this enemy. Good reliable insect powder is as good as anything, because in spite of all the talk and all the schemes invented, unless they are watched, lice will multiply. In some of the States young turks are badly afflicted with gapes. Here we are not troubled with that disease, for which we should be thankful, for it must be an awful tiresome task to have to pull worms out of the young turks' throats.

BLACKHEAD.

The worst enemy, to the turkey tribe, is blackhead. While it started in the eastern States, we have a goodly share of it in California. Its greatest feature is that it is highly communicable. If one turkey has it, all the turkeys, old and young, would be in grave danger, because the disease comes both in endemic and epidemic form. It attacks the young first, probably because they are more susceptible, destroying 70 to 90 per cent of them before six weeks old, when confined in yards that are contaminated. Of those that escape after being attacked, 15 per cent die before they reach one year old. Once established on the farm it is hard to get rid of, even though you stop raising turkeys, for it is in the land; it gets in your poultry and it has really come to stay. The prevention is much easier than the cure. As long as there is a particle of danger from getting such a disease, it pays to be cautious where you buy eggs or young turks. Buy from reputable breeders even if you

pay twice the price. A recent bulletin says that there is not any known means of its eradication. Give the turkeys room; encourage them to ramble instead of hanging around yards where other fowls are.

DIARRHOEA.

Chicks that are afflicted with diarrhea usually recover when put on virgin soil, where if you allow them to stay in the same yards and on the same ground very likely all of them will die.

Besides keeping young turks' quarters clean and removing to new ground, the feed should be rather sparing until they begin to take plenty of exercise, when they will almost rustle their own. In the early stages, buttermilk or sour clabbered milk are the very best preventives known. The acid in the milk seems to keep the bowels in a condition unfavorable to the life of the blackhead germs. Of course, some use drugs, but it is doubtful whether they ever help.

The symptoms of blackhead in young turks are, listlessness, lagging behind, with wings drooped, and diarrheal discharges of an orange color. A post mortem usually discloses the fact that they have been sick longer than the owner thought, for all internal organs are thickened with inflamed walls, enlarged liver, and much inflammation of the various organs. Sometimes the liver has large creamy ulcers on it, in which case it may be concluded that the disease has gotten a strong hold before it was discovered.

SPROUTING OATS.

[Written for Pacific Rural Press by Susan Swaysgood, Pomona.]

From now on we can sprout oats or barley right out in the open and get a bunch of wiggly worms on each spade full. Soak the oats a few hours in warm water, then spread on a nice clean piece of ground so that the oats are about four inches thick. Cover with about one inch of dirt and sprinkle when needed; the more sprinkling you give the oats, the more worms you will get, provided the land is rich

enough to grow worms. When the oats show through just an inch of green, they are in such fine shape for eggs that your hens will repay you. For small chicks that have no other green feed, it pays to grow a little longer before serving. The chicks will digest every particle and grow like weeds.

This is the cheapest and best all around feed for growing chicks that we can serve. Oats are high, but they swell enormously and furnish bone and muscle for growing chicks in a larger proportion than almost any feed we have.

Last Saturday the George P. McNear Company and the Golden Eagle Milling Company of Petaluma issued a statement to the poultrymen of the section that they will guarantee to provide for their use 5,000 tons of new barley crop at a maximum price of 2 1/4 cents.

Poultry Breeders' Directory

Rates in this directory, 3c per word each issue; or if carried weekly for one year, 2 1/2 c per word.

BABY CHICKS—For May and June. We will have them—Barred Rocks, R. I. Reds, Black Minorcas, White and Brown Leghorns. They cost from 7 to 12 cents each, depending on breed and number. The combination is good quality and low price, because our plant is efficient, our hatching capacity is large, so we can operate on a smaller margin of profit and give good value for the money. Try us with a trial order. Our breeds are pure-bred and of the true utility class, bred for layers and hardness. Don't quit because grain is high—Eggs will be higher, and the laying hen is a good investment. Write for our circular and price list. Rooster Poultry Ranch and Hatchery, Campbell, Cal.

BARRED PLYMOUTH ROCKS—COCKERELS—Cockerels—Cockerels—Yes, we have them; also Hens and Pullets—all bred from our Champion Winners at California's leading shows. Also hatching eggs. If it's Barred Rocks you want, get in touch with me right away. Have bred them exclusively for nineteen years. Send for Catalog. Chas. H. Voden, Box 396, Los Gatos, Calif.

"FINEST HATCHERY IN THE WORLD"—Baby Chicks, White Leghorns, and Rhode Island Reds, settings, 100's, 1000's, hatched right in our \$60,000 brick and concrete hatchery from our quality heavy layers. Reasonable prices. Stock, Hatching Eggs. Pebbleside Poultry Farm and Hatchery, Sunnyvale, California.

MAY AND JUNE CHICKS—Will lay this fall if from our early maturing strain. Our Leghorns and Reds begin laying at 4 1/2 to 5 months. Leghorns, \$10 per hundred; Reds, \$12.50 per hundred. Brooke Farm (Rancho del Paso), 807 J St., Sacramento, Cal.

WHITE LEGHORN BREEDING COCKERELS—10 months old, from our famous heavy laying, prize winning stock. To make room we offer our regular \$5.00 values at \$2.50 each while they last. Rancho Del Marino, Downey, Cal.

BABY CHICKS—HATCHING EGGS—White, Buff, Brown Leghorns, R. I. Reds, Barred Rocks. Sturdy chicks from well-mated fowls. Prompt, efficient service. Write for circular. Campbell Poultry Ranch, Campbell, Cal.

HOGANIZED AND TESTED—220-egg type White Orpingtons and Buttercups. Hatching eggs, chicks and cockerels for sale. Reasonable prices. For particulars, write M. Woodhams, San Mateo, Cal.

S. C. RHODE ISLAND REDS—220-egg record in 12 months. Hatching eggs, Chicks, Stock. Also Rose Comb Reds. Mating list ready. Wm. Larm, 3915 39th Ave., Fruitvale, Cal.

WHITE WYANDOTTES—Persistent layers and Blue Ribbon winners. Eggs now \$1.50 and \$3.00. Chix 20c. R. W. Stawetski, Route 2, San Jose, Cal.

BABY CHICKS from S. C. White Leghorns from trapezoid hens with records from 192 to 297 eggs. Also S. C. Black Minorca chicks and eggs. J. W. Benoit, Route C, Modesto, Cal.

EASTMAN'S BRED-TO-LAY Barred Plymouth Rocks—chicks, eggs, cockerels. We hoganize and trapezoid. Fairmead Poultry Farm, Fairmead, California. Box P.

MODEL POULTRY FARM—White Leghorn specialists. Our thirteenth year. Baby Chix and Hatching Eggs for sale. W. C. Smith, Prop., Corning, Cal.

INCUBATORS—For Essex Model Incubators at factory prices, write Geo. H. Croley Co., Inc., Poultry Supplies, 631-637 Brannan St., San Francisco.

ANCONAS—First-class stock. Reduced price, \$2.50 per fifteen. Chicks, 25c each. Few choice birds for sale. J. R. Bell, Livermore, Cal.

CHICKENS, DUCKS, GESE, GUINEAS, Pea Fowl, Pigeons. Wm. A. French, 545 W. Park St., Stockton, Cal.

HATCHED CHICKS from Barred Rocks, R. I. Reds, White Leghorns. Good stock. Send for circular. G. L. Hawley, Madera, Cal.

WHITE PLYMOUTH ROCKS—Hatching eggs from splendid layers. Mrs. J. B. Tupper, Route A, Ceres, Cal.

TURKEYS, DUCKS AND GESE.

MAMMOTH BRONZE TURKEY EGGS—During May at \$2.50 per 10, \$20 per 100. M. M. Reiman, Planada, Cal.

FOR SALE—Mammoth Bronze Turkey Eggs. Eastern stock prize winners. Mrs. Robert Farrell, Bolinas, Cal.

BRONZE TURKEY EGGS—By the setting or hundred. Also fine young Toms. Albert M. Hart, Clements, Cal.

MAMMOTH BRONZE TURKEY EGGS—\$3.50 per setting. Toulouse Geese eggs, 25c each. Mrs. M. Coghlan, Walnut Creek, Cal.

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Rates in this directory, 3c per word each issue; or if carried weekly for one year, 2 1/2 c per word.

MISCELLANEOUS.

CEMENT STAVE SILOS are permanent investments. Grow better with age. Cannot crack, warp, leak or blow down. Cost no more than a good wood silo. They are sanitary and profitable. Get your money's worth. Write to Cement Stave Silo Co., 501 Call Bldg., San Francisco.

GROCERIES WHOLESALE—Our prices are the lowest and our quality the highest. Dollars saved on every order. Freight paid within 100 miles. Send for catalog. Freese and Company, Mail Order Grocers, 1264 Divisadero St., San Francisco.

SECOND-HAND WATER PIPE and Screw Casing. New threads and couplings dipped in hot asphaltum. All guaranteed. Send us your inquiry. Shecter Pipe Works, 306-8 Howard St., San Francisco.

AT LAST THE PERFECT SILO—The Star Round. No hoops. No bolts. No experiments. Any one can erect. Close price. Address D. O. Lively, 215 Hobart Bldg., San Francisco.

FOR SALE—New Bull Tractor, five-horse pull at drawbar, twelve on belt. Has only plowed ten acres. Runs like a clock. Good as new. \$375.00. Will demonstrate. Box 540, Rural Press.

PATENTS THAT PROTECT are procured through Pacific Coast Patent Agency, Savings and Loan Building, Stockton, California. Established fifty years.

TO REDUCE THE HIGH COST OF LIVING, send for our Wholesaler to Consumer Catalog. Smith's Cash Store, 106 Clay St., San Francisco.

WANTED TO BUY—CANARIES—1 Coolidge Place, off Jackson, San Francisco.

SEEDS, PLANTS AND TREES.

SEED BEANS—We sell direct to the grower. Buy now before the advance. Our stock is carefully selected. Satisfaction guaranteed. Tell us the nature of your soil and we will suggest the best variety. Modesto Farmers Union, Modesto.

ALFALFA SEED—There is a difference in the varieties and strains of alfalfa seed. Send your address for sample and our low price, and we will tell you just how our seed is selected—and why. Bomberger Seed Co., Modesto, Cal.

SEED CORN—Egyptian white, large pure white kernels. High germination test. None better offered. Also milo maize, feterita, and Egyptian wheat. Modesto Farmers' Union, Modesto.

WANTED AT ONCE—30 sacks Tepary beans. Send sample and state lowest price. K. Knutsen, Turlock, Cal.

TOMATO PLANTS—Transplanted, \$1.00 per 100. Panama Nursery Co., Concord, Cal.

ASTER PLANTS—25c per dozen. Panama Nursery Co., Concord, Cal.

WANTED.

WANTED—Young men and women to attend the Western Normal Courses—Normal and Academic. The Normal Course gives an adequate preparation for teaching, at a great saving in time and money. Academic course gives practical finish to education. Write for Bulletin "A," Western Normal, 524 E. Market St., Stockton, Cal.

WANTED—Position as manager of dairy or Stock Ranch, by married man, 44. Experienced in details of production and marketing sanitary milk. Would consider large dairy or blooded cattle ranch on share basis. Pacific Rural Press, Los Angeles.

IF YOU ARE LOOKING for a man thoroughly experienced in the live stock business, both market and pure-bred, corn and alfalfa, to take charge of your ranch, write at once, giving full particulars and wages. Box 9, Pacific Rural Press.

WANTED—Sober and industrious man for orchard work, must be able to handle team and accustomed to irrigating. Good opportunity for right man. State references and experience. Address, Box 520, Rural Press.

YOUNG MAN would like work on farm or in orchard. Wages \$15 per month with room and board. Box 550, Pac. Rural Press.

COUNTRY LANDS.

20, 30, 40 OR 70 ACRES—Napa county. Clear, level, rich valley land. Will grow alfalfa, beans, potatoes, fruits, etc. Plenty water, best climate. Fenced—cross-fenced. Good hog and turkey proposition. \$50 per acre. Easy terms. A. Melvin, Paradise, Cal.


FOR SALE—80 acres foothill ranch, well improved; 8-room house, new barn, new pumping plant, plenty good water; young orchard, twelve varieties. Few acres in alfalfa. Address: Owner, P. O. Box 3165, Perris, Cal.

B. S. COELHO, CORCORAN, CAL. Owner—150 acres improved, subdivided alfalfa dairy. Stratford. Keeps 85 cows. C. B. Robertson, 105 Montgomery St., San Francisco.

175 ACRES, near Princeton, Colusa county. Two years in rice. This season Egyptian corn. Price right. James M. Berry, 118 West Walnut St., Lodi, Cal.

STEVENS COUNTY—Logged-off land where stock-raising and dairying pay. Free booklet. Phoenix Lumber Co., Crop Department, Spokane, Washington.

STATE, GOVERNMENT AND INDIAN LANDS—Bargains overlooked. Free New Blue Booklet. Joseph Clark, Sacramento.



Try the Coulson
System of Feeding
Our free book, *Chickens from Hatch to Market*, gives full particulars.
Coulson Co. Petaluma, Cal.

AVALANCHE OF POULTRY—EGGS MUST GO HIGHER.

The most serious situation in the history of California poultrymen is gathering force; and the storm will break within a month in the opinion of Secretary E. A. Forbes of the State Market Director's office. Conferences of the Market Director with the San Francisco Produce Exchange and leading poultrymen of Sonoma county show that flocks are being reduced at an unprecedented rate. Whereas, heretofore, the hardluck poultry stories have come from beginners who failed, now it is the big successful poultrymen of the class of P. R. Lyding, Knox Bande, and others who are selling out along with the rest. Geo. P. McNear, who has a fortune in feed accounts with poultrymen, is advising them to sell their laying stock so soon as production goes low, and get jobs elsewhere, leaving their families in Sonoma county. Some poultrymen still have feed bought at lower prices. The climax of the laying season is not yet past. When it is, about next month, and the cheap feed is gone, an avalanche of poultry will come, for feed is now double the price of a year ago; while eggs are very little higher. At a meeting in Petaluma recently the Mayor was asked to appoint a committee of 25 to deal with the situation. This committee is expected to provide facilities to care for the chickens until they can be killed, dressed, and cooled in Petaluma, then shipped to San Francisco cold storage houses to relieve the market. The effect of this wholesale reduction of flocks in the greatest egg producing center of the West, will be to send prices of eggs out of sight very shortly and keep them up.

There is one way for consumers to prevent this, which is to accept a rise of 5 or 10 cents per dozen now. Otherwise they may not be able to get them at \$1 a dozen later. Conferences are being held with the San Francisco Produce Exchange and other egg dealers to see if prices may not be raised enough to keep egg producers in business at least until fall feed comes.

Mrs. Best's Letter.

STYLES IN DRESS WEAR.

Dear Friends: The nearness of summer makes us all think over the state of the wardrobe, especially with regard to house dresses.

Morning dresses are made so attractively that, when clean, they can be worn any time of day. The most popular style is the one-piece dress, the skirt a plain gored and the waist a simple shirt waist style, open at the throat and short sleeved. The collar and cuffs are of a contrasting material or white, and the new note is the presence of fancy pointed pockets on the skirt. They are belted, of course, as everything seems to be this spring.

Another very attractive style is in two pieces, a loosely fitted middy blouse effect, buttoning down the front, slightly belted and worn over a gored skirt. This style is developed in many combinations—white blouse with striped skirt and collar and cuffs of the skirt material or the blouse of a solid color, blue or rose, and the skirt of an harmonious stripe. This style when developed in a pretty lighter weight material makes very pretty informal home dresses. Some of the stores call them porch dresses.

Old fashioned gingham is with us again and very pretty dresses can be developed from the use of soft plaids with trimmings of plain materials and buttons.

The shirt waist dress is very smart and is shown in crepes or linens in both solid colors and stripes.

For more dressy occasions, crepe de chine and Georgette crepe are very popular—the crepe de chine in white with embroidery of colors is wonderfully effective. These dresses are made on soft clinging lines, with the skirt much narrower than formerly. If there are pleats or gathers or even drapery, they are made to keep a comparatively straight line. Skirts that flare just below the hips are much more the exception than the rule.

For graduation dresses, that are also to be used as party dresses, net seems equally as popular as Georgette crepe.

These dresses are made with simple waists, some finished with a berth at the neck while others are plain. The skirts are trimmed with bands of silk or soft net ruffles piped with satin. Most of them are made over an inexpensive silk foundation and have silk girdles. If the dress is made up entirely separate from the silk slip it is possible to use slips of different colors that give the garment an entirely different appearance. The girdle should be of the color of the silk slip in that case.

Petticoats for wear with these dainty dresses are either of white silk trimmed with lace or silk jersey tops with pleated flounce or of fine white goods with flounces of Valenciennes lace. For wear with the morning dresses, the petticoats are made of striped gingham or white sateen or pique with scalloped edge.

ROSABELLA BEST.

USE OF STALE BREAD.

Bread is one of the items most commonly wasted in many American households. This waste is probably due to the fact that many house-

keepers do not know what to do with the odds and ends frequently found in the bread box. Bread a little too stale to be appetizing, but not yet hard, may be freshened by putting it into the oven for a few minutes. The heat seems to drive the moisture from the crust back into the center of the loaf, making the crust more crisp and the crumb a little more spongy. Some housekeepers moisten the surface of the bread and sometimes cover it before putting it into the oven.

Toast is a form in which partly stale bread can be made attractive. In many families it is served only for breakfast, or supper, but the custom which many high grade restaurants have adopted of serving thin, crisp, hot toast with the more substantial meals, might well be followed at home. Such dishes as chopped meat with gravy, creamed chicken or fish, poached eggs, melted cheese, cooked asparagus, Swiss chard, baked tomatoes, etc., are served very commonly on toast. Cream or milk toast (that is, toast with a cream sauce or milk gravy, perhaps flavored with a very little chipped beef, salt fish, or other savory) may be used as the main dish at breakfast, luncheon, or supper. Slices of toast may also be dipped in water or milk and beaten egg, and lightly browned on a hot greased pan.

Another good way of using stale bread is to put the pieces in the warming oven or on the back of the stove and leave them until they are crisp and a delicate brown throughout. This is often called twice-baked bread and is very popular with children and also with grown-ups who like its "crunchiness" and the flavor which comes with the slight browning.

There is nothing new in the idea of using bread crumbs in cookery and most housekeepers are in the habit of having some on hand for use in scalloped dishes, stuffing for meat, puddings, etc. Few realize, however, how much more generally they might be utilized. Any bits of bread which can not be eaten on the table should be saved and crumbed for use in cooking. To prevent their growing musty, they should be kept in dry, air-tight containers. Fruit jars are often convenient for the purpose.

VALUE OF FRUIT.

There is nothing in the food line that so clears the skin as well as the brain as a diet of fresh, well ripened fruits. Apples are the finest spring tonic that can be found, while oranges are an aid to digestion and a sedative to the nerves. Pineapple juice is called a vegetable pepsin, strengthening the digestive powers, and both grapefruit and rhubarb are excellent spring tonics.

MANGELS.

Nothing yields such a quantity of real food value as mangels. Boiled tender, then chopped, and a piece of butter put in with vinegar, they are wholesome and satisfying.—S. S., Pomona.

THE HOME CIRCLE

THE PRESERVATION OF VEGETABLES WITHOUT CANNING.

[By Prof. Wm. V. Cruess, University of California.]

We have become so accustomed to using vegetables from cans, (or fresh), that we do not realize that they can be successfully preserved in palatable and nutritious forms by other methods. The scarcity of tin cans and glass jars makes it imperative that these other methods be used this season if any great quantity of vegetables is to be kept for use next winter. The methods described below are not especially new, but it is believed that they are not all generally known. They are very simple, cheap, effective, and can be used from the smallest to the largest scale.

DRYING VEGETABLES.

All root vegetables, such as potatoes, carrots, turnips, beets, etc., can be dried successfully by exposing them on trays to the sun. The vegetables should first be washed, peeled if necessary, cut into pieces about one-fourth of an inch thick, spread on trays or sheets of paper, and exposed to the sun until dry. Potatoes, carrots, turnips, and beets will dry in this way in two to four days. Onions require longer.

The appearance and general quality of all these root vegetables (especially potatoes) can be improved, the rate of drying can be increased, and molding during drying in foggy weather can be avoided if the vegetables are exposed to the fumes of burning sulphur a short time before drying. An ordinary fruit sulphuring box may be used for this purpose. If one of these is not available, the cut vegetables may be sulphured by exposing the trays to the fumes of burning sulphur in any fairly tight room or box. A box may be constructed of rough boards and covered with building paper to make it fairly air-tight. Cleats may be nailed to the inside walls to hold the trays during sulphuring. The box is made without a floor and one side is made into a door to admit trays. A hole about a foot square and 12 to 10 inches deep is dug in the ground at one end of the box. A pan of burning sulphur is placed in this hole after the trays have been stacked in the box. The door is closed and the vegetables left until sufficiently sulphured. The time necessary is from 10 to 20 minutes. The vegetables are then exposed to the sun on trays or paper till dry.

Peas and string beans should not be sulphured because of the bleaching action of sulphur fumes. Peas should be shelled and string beans should be strung before placing them on trays. Both dry rapidly.

Corn is cut from the cob and dried on trays successfully.

Dried vegetables must be kept in covered crocks or tight boxes or heavy sacks to prevent insect injury. Before being used for cooking, the dried vegetables must be soaked in water about 24 hours. They may then be cooked and served in ways similar to those used for fresh vegetables. By proper seasoning and

preparation, dried vegetables can be made into palatable dishes. Their nutritive value is not perceptibly changed by drying.

BY SALTING.

Wash, peel, and cut the vegetables into pieces about one-fourth inch thick. Weigh them. Weigh out one pound of salt to each three pounds of vegetables. Place a thin layer of salt in the bottom of a crock or barrel or wooden bucket in which the vegetables are to be stored. Then build the vegetables and salt up in alternate layers until the container is full, using one pound of salt to three pounds of vegetables. Cover the vegetables with a layer of salt. Place a piece of wood on top of the vegetables and a heavy weight on the piece of wood. In 24 hours the vegetables will be found covered with a heavy brine formed by the salt and the juice from the vegetables. The vegetables will have greatly decreased in bulk. More sliced vegetables and salt in the ratio of one pound of salt to three pounds of vegetables may be added to fill the jar or barrel and pressure applied again. Keep the vegetables emersed in this brine by means of a light wooden weight until they are to be used. If they show signs of spoiling add more salt. Before cooking, soak out the excess salt as is done with salt fish, or parboil a short time for the same purpose. Do not use metal containers for storage of vegetables, because metal will dissolve in brine. Use crocks, barrels or wooden containers.

IN BRINE.

Make a saturated brine by stirring $3\frac{1}{2}$ to four pounds of salt in a gallon of water. If it does not all dissolve at once, leave it in the liquid because it will dissolve when the vegetables are added later. Wash the vegetables. Slicing is not necessary. Place them in the brine and keep immersed by wooden weights, until needed. If signs of spoilage are noticed at any time, add more salt.

Vegetables may be kept in salt or brine indefinitely and make good substitutes for the canned or fresh vegetables. The most expensive grade of salt is not needed. It would pay communities to buy salt by the ton or half-ton lots direct from large salt dealers if any great quantity of vegetables are to be put up. A good grade of salt may be had for about \$8 per ton.

EGGLESS FRUIT CAKE.

One and $\frac{1}{2}$ cups sugar, 3 cups flour, $\frac{1}{4}$ cup shortening, 1 cup raisins, 1 teaspoon each of cinnamon and nutmeg and $\frac{1}{2}$ teaspoon of cloves, 2 teaspoons baking powder, 1 teaspoon soda in 2 cups of sour milk. Mix together the sugar, flour, shortening and spices, like pie crust, and take $\frac{1}{2}$ cup of this mixture out before adding other ingredients. After the ingredients are thoroughly mixed and poured in a greased pan, sprinkle the $\frac{1}{2}$ cup of dry mixture over the top for frosting and bake 30 minutes in rather a slow oven.

FRENCH DRESSING.

Mix together $\frac{1}{2}$ teaspoon salt, little pepper, 2 tablespoons vinegar or lemon juice, 4 tablespoons olive oil; beat thoroughly. A bottle is a good thing to shake it in and can be kept just for that purpose.

Good Health.

[By H. E. Pastor, M. D.]

The Balanced Ration for the Human Animal.

All stock-raisers pay close attention to the ingredients of the ration fed to their animals of whatsoever description. They themselves, however, gulp down their own ration with little or no thought of its composition or the proportion of its constituents. If they fall sick as a result of this neglect their ailment is regarded merely as the dispensation of an unkind Providence, or an unfortunate hand dealt out in the daily shuffle of life. In short, the result is accepted as a matter of course. As a matter of course, too, the remedy is a hasty dose of squills, calomel and jalap, asafœdita, or a patent pill of sugar-coated nastiness—and time for Mother Nature to correct in some measure the bodily disturbance arising from this wrong course of dietetic living.

Now, inasmuch as a large number of people never think of thinking for themselves at all, a paternal government has seen fit to hire a staff of food experts to teach its wards—and that means all of us,

dear reader,—something about the makeup of their own ration. The result is a circular issued by the United States Department of Agriculture on how to select foods, and the reasons why in brief. It seems strictly orthodox from a medical viewpoint, so we venture to reproduce it in part:

FRUITS AND VEGETABLES.

These contain the necessary mineral substances for building up the body and keeping it in good working condition; acids which give flavor, prevent constipation, and serve other useful purposes; and in minute quantities lime salts, compounds of phosphorus and iron, and other substances necessary to good health. By giving bulk to the diet they make it more satisfying to the appetite. Foods depended on for mineral matters are: Apples, pears, berries, oranges, lemons, bananas, melons, etc.; salads, lettuce, celery, green peas, beans, tomatoes, squash, "greens," potatoes and root vegetables.

MEAT AND MEAT SUBSTITUTES.

These are sources of an important body-building material, protein. In the case of children part of the protein food should always be whole milk. Foods depended on for protein are milk, skim milk, cheese, poultry, eggs, meat, fish, dried peas, beans, cowpeas, nuts.

FOODS RICH IN STARCH.

Foods depended on for starch are cereal grains, meals, flours, cereal breakfast foods, bread, crackers, macaroni and other pastes, cakes, cookies, starchy puddings, potatoes and other starchy vegetables.

SUGAR.

Unless some of the fuel is in this form the diet is likely to lack flavor. Foods depended on for sugar are sugar, molasses, sirups, honey, candies, sweet cakes and desserts, fruits preserved in sugar, jellies and dried fruits.

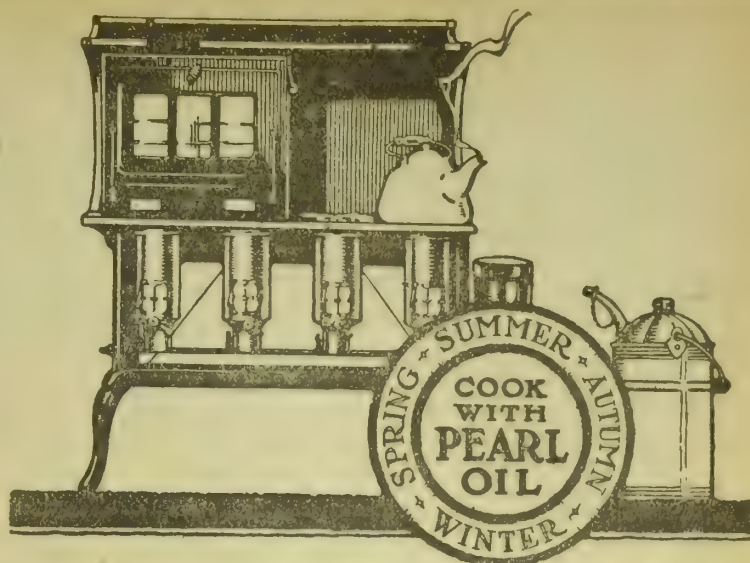
FOODS RICH IN FAT.

These are important sources of body fuel. Without them food would not be rich enough to taste well. Foods depended on for fat are butter and cream, lard, suet and other cooking fats, salt pork and bacon, table and salad oils.

Of course, some food materials lap over several groups. Cereals, for example, supply protein as well as starch; potatoes supply starch as well as the mineral matters, acids, cellulose, and body-regulating substances, for which they are especially valuable; and most meat supplies fat as well as protein. Serve meals that have sufficient variety and do not cut down in the wrong places when economy either of time or money is needed.

A YOUNG FINANCIER.

Russell Huckabee, aged 13 years, of San Jacinto has just started an investment system with two white leg-horn hens. His mother's hens are all barred rocks which lay brown eggs, so he can easily tell when either of his two hens lay on account of getting white eggs. All the white eggs his mother buys from him, paying him the market price, but deducting five cents a dozen for the feed that his chickens eat. Eventually he will have more hens, as he has just borrowed two of his



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HAROLD SOMERS, 150 DeKalb Ave., Brooklyn, N. Y.

mother's setting hens to hatch out two dozen high quality settings of eggs. Then he intends to keep his poultry separate and buy his own feed and sell his own eggs.—C. F. B.

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In 4-in. pots now ready, 25 cts. each, \$2.50 per dozen. Am booking orders now for choice varieties of CHERYANTHEMUMS, commercial, show, single and pompons. Forty varieties of PELARGONIUMS in 4-inch pots will soon be in bloom, 25 cts. each, \$2.50 per doz. Also a large variety of other stock. Send for catalog.

GEO. N. TYLER, Brookdale Nursery, Los Gatos.

SAN FRANCISCO.

San Francisco, May 9, 1917.

WHEAT.

The local grain market has been in such an unsettled condition during the past week that spot quotations are hard to obtain. Available holdings are so light that the least sign of an advance in the East causes holders here to jump their asked figures about twice as much as the Eastern advance, and vice versa on declines. The stocks of Northern Club have been pretty well cleaned up.

There was little or no trading in spot barley here during the past week on account of the light holdings, although more of the current sales commanded the top asked figure of \$5.15 per cental. Futures trading on the floor of the Merchants Exchange showed a very decided gain on the May option and fair-sized advances on December stock. The crop outlook in this State has shown no marked improvement, and cutting of the small volunteer crop has already begun.

Shipping, cti. Nominal
Brewing, cti. Nominal
Choice feed, cti. \$3.00@3.15

BARLEY.

One decline and one advance marked the price changes in the bean list during the past week, with trading slowed up very noticeably. This is mainly the result of the rapid cleaning up of present holdings, some lines being so scarce that it is estimated on the street that it would require the holdings of three or four dealers to supply five carloads. Bayos eased 25c per cental, this demand having fallen off as a result of the high prices. The cleaning up of most of the first quality stock of this variety was also a factor in the easier market here for bayos. Shipping orders from Alaska put Garbanzos up to 77c per cental for fancy grades. More contracts were reported to have been let at very good prices, the reported prices being 10 1/2c on large and small whites and 10 1/2c on limas.

Bayos, per cti. \$11.25@11.50
Blackeyes 9.50@10.00
Cranberry beans 11.50@12.00
Horse beans 7.00@7.50
Small Whites (south) 14.00@16.00
Large Whites 14.00@16.00
Pinks 12.00@12.25
Limas (south, re-cleaned) 16.00@16.25
Red Kidney 12.50@13.00
Mexican Reds 11.00@11.50
Tepary beans None offered
Garbanzos \$6.00@7.00

CORN.

Would-be buyers of corn faced much the same situation during the past week as those who tried to purchase wheat, the market varying with every wire received from the East. California sacked failed to share in this uneasiness, but Egyptian corn advanced to \$4.10@4.50 per cental, with as high as \$5 paid for fancy seed stock.

First-hand prices on strictly first-class grain, San Francisco:
Eastern Yellow, cti., bulk. Unsettled
California, sacked \$3.45@3.50
Milo Maize None offered
Egyptian \$4.10@4.50

HAY.

The past week saw no changes made in the asking prices on carload lots of hay in San Francisco, but there was nothing in the market tone to indicate that lower prices could be expected immediately. Arrivals for the week were 1,204 tons, as compared with 1,220 tons for the week previous and 1,375 tons for the week before that. Of the current receipts, only half was California stock, with the remainder coming from Oregon and Washington. The relief furnished by this outside stock can readily be seen, with the market holding steady on shipments twice those coming from California points.

Wheat, No. 1 \$33.00@35.00
No. 2 28.00@30.00
Tame oats 28.50@33.00
Wild oats 24.00@29.00
Barley 27.00@30.00
Alfalfa 24.00@27.00
Stock hay 16.00@18.00
Straw, per bale 1.00@1.25

FEEDSTUFFS.

The local feedstuffs market was ruled by a decidedly firmer undertone during the past week, and advances on a number of lines were noted. Coconut cake or meal, rolled barley and rolled oats showed the heaviest gains. A few small lots of rice middlings, not enough to warrant the inclusion of this feedstuff in the list, went on sale here, and commanded \$37.00@40.00 per ton, according to quality.

(Per ton, San Francisco.)
Beet Pulp, per ton None offered
Alfalfa meal, per ton \$34.00@35.00
Bran, per ton 46.50@48.00
Oil Cake None offered
Coconut cake or meal \$36.00@37.00
Cracked corn 72.00@73.00
Middlings 55.00@60.00
Rolled Barley 62.00
Tankage None offered
Rolled Oats \$60.00
Rice middlings None offered
Rice bran 35.00@36.00
Shorts \$52.00@53.00

POTATOES, ONIONS, ETC.

Present conditions in the vegetable market are hard to render quotations on, because of the possibility of an extended strike on the river boats. Should this develop, it will mean a shortage here of delta products and a consequent boosting of prices on most offerings. With only one boat tied up, asparagus prices for Wednesday showed a gain and fancy graded lots sold as high as \$3.25 per lug.
Asparagus, per box \$1.25@3.25
Peas, per sack 1.25@1.75

THE MARKET REPORTS

Figures Given are Independent and Reliable.
Prices Quoted as Paid to Producers.

String Beans, per lb. \$8@12c
Wax Beans, per lb. 10@12 1/2c
Lambard squash, per lb. 2 1/2@3 1/2c
Summer squash, per crate 75c@1.00
Lettuce, crate 50c@75c
Celery, Delta, crate \$1.00@1.50
do, Southern, crate None offered
Tomatoes, crate Not enough to quote
Rhubarb, bay, per box 75c@1.25
do, San Jose \$1.15@1.35
Potatoes, cti., Delta \$3.25@4.00
Salinas Cleaned up
Oregon \$3.70@4.00
New, per lb. 5@6 1/2c
Sweets, per lb. None offered
Onions, green, per box \$1@1.25
Garlic, lb. 1@3c
Bermuda (seed), per cti. \$2.25@2.75

POULTRY.

Small chickens, laying hens and old roosters continue to form the bulk of the local offerings, and all of these lines registered lower prices during the past week. The offerings of old roosters is common at this time, but the other two varieties are coming in because of the high prices asked for feed. A committee from the Associated Poultry Producers of Central California and the local Produce Exchange is planning an advertising campaign to get the housewife to eat more chickens.

Turkeys, live, lb. 20c@22c
do, dressed, large, lb. Nominal
Broilers, 1 1/2 to 2 lbs. 33c@35c
do, under 1 lb. 23c@25c
do, 1 1/2 lbs. 26c@27c
Fryers 33c@35c
Hens, extra, per lb., colored 20c@24c
Small leghorn 14c@17c
Smooth Young Roosters, per lb. (3 lbs. and over) 33c@35c
Old Roosters, per lb. 12c@14c
Geese, per lb. 18c@20c
Squabs, per lb. 35c@40c
Ducks 18c@21c
Old 17c@18c
Belgian Hares (live) 14c@15c

BUTTER.

Butter quotations closed the week 1 1/2c higher than on the opening day, despite a noticeable increase in receipts. A good shipping demand was directly responsible for this, as increases in ice-house holdings here were but 1,500 pounds, and this stock will only be kept in there for thirty days. However, the local trade is gradually working around to the belief that butter prices have very nearly touched bottom, and a number of dealers say that they intend to start storing for the season next week, in case no decline occurs in the quotations.

Thurs. Fri. Sat. Mon. Tu. Wed.
Extras 33 1/2 34 34 1/2 35 35 35
Prime 1sts 33 33 1/2 33 1/2 34 1/2 34 1/2

EGGS.

Receipts of eggs during the past week showed a marked increase as far as the pullets grade was concerned, and this grade closed at easier prices, while both washed and unwashed extras advanced. This is said to be due to the fact that so many laying hens are being killed on account of the high prices for feed, and the older hens are killed first on the theory that the pullet has a longer period of laying usefulness before her.

Thurs. Fri. Sat. Mon. Tu. Wed.
Extras 32 1/2 32 1/2 32 1/2 33 33 1/2
Extra 1sts 31 1/2 31 1/2 31 1/2 31 1/2 31 1/2
Extra pullets 31 31 31 30 30 30 1/2
Ex. 1sts pul. 30 1/2 30 1/2 30 1/2 30 1/2 29 1/2 29 1/2

CHEESE.

There was a general advance on cheese here during the past week as the result of a big shipping demand and only normal receipts. The call for Jack cheese is especially good, and full cream stock is now commanding a top of 27 cents per pound on the street.

Y. A.'s 25 1/2c
Fancy Calif. Flats, per lb. 22c

Monterey Cheese 24@27c

DECIDUOUS FRUITS.

Cherries are now being offered in quotable amounts, and are meeting with a ready sale at \$1.00@1.50 per ten-pound drawer. Newtown Pippin Apples advanced during the week as the result of the steady cleaning out of the better grades. The first apricots of the season, from the Imperial Valley, reached here Tuesday in an immature condition, but sold at 15 cents per pound for the 20-pound box on account of their novelty.

Apples:
Bellflower, box Not enough to quote
Newtown, fancy \$1.50@1.75
do, ordinary 1.25@1.40
Cherries, per drawer 1.00@1.50

CITRUS FRUITS.

There were no changes of note in the citrus fruit list during the past week. Several large export orders were reported as closed.

Oranges:
Navels, fancy, per box \$2.65@2.90
do, Choice 2.25@2.50
Tangerines 1.75@2.00
Lemons:
Fancy, per box 3.25@3.50
Choice 2.75@3.00
Standard 1.75@2.00
Lemonettes 1.50@2.25
Grapefruit, fancy 2.75@3.00

DRIED FRUITS.

Advances on both spot and future prices proved the only notable change in the dried fruit list last week, although all offerings are being very firmly held. As high as seven cents is being offered on 4-size prunes now.

(Net to growers, bulk basis, f. o. b. shipping point.)
Apples, new crop 5 1/2 @ 6 c
Apricots, per lb. 15 @ 16 1/2 c
Figs, black, 1916 Not enough to quote
do, 1917 5 1/2 @ 6 1/2 c
do, white, 1917 6 @ 6 1/2 c
Calimyrna, 1917 9 @ 10 c
Prunes, 4-size basis, 1917 5 1/2 @ 7 c
Prunes, 1916 8 1/2 @ 9 c
Pears 6 @ 7 1/2 c
Peaches, 1917 7 1/2 @ 8 1/2 c

BERRIES.

Increased receipts of berries have been constantly bringing prices down, while the California Packing Corporation is taking all stock not sold by the eleven dealers chosen to represent the Growers' Association by nine o'clock each morning. Four cents per pound is being paid by the canners, a very good increase over prices paid by them last year.

Strawberries (per chest):
Southern \$5.00@6.50
Fresno 5.00@7.00
Longworth 8.00@9.00

HOPS.

While handlers of hops were daily expecting further declines, the market held about steady during the past week. This was the result of the lack of interest on the part of buyers, and it is thought here that any earnest efforts to buy now would mean a lowering of the asked price here.

Sacramento 5 1/2 @ 8c
Sonoma 6 @ 9c
Mendocino 7 @ 9c

HONEY.

Local dealers are still marking time as far as active buying of honey is concerned, with a firm undertone ruling the market. Reports from Hawaii indicate that the production there this year will be a little short of the normal.

Prices in San Francisco:
Comb, water white 13@15c
Amber 8@10c
Light amber 11@12c
Fancy white, extracted 10c
Light amber, do 8c

Special Citrus Market Report

Los Angeles, May 8, 1917.

Shipments of citrus fruits from southern California from November 1 to May 3: Oranges 22,000 cars, and lemons 3,762 cars. Same time last year: Oranges 18,878 cars, and lemons 3,025 cars.

The market the past week held up fairly well. In the Eastern markets the best of popular sizes met with a very good demand and closed the week a little higher after opening a little lower. Average prices remain much the same as a week ago. Receipts good and the less well known brands and small fruit sold slow and lower. That is navels. No Valencia moving as yet. Locally the market was very quiet. The navel season is pretty much over and packers are holding back and buying sparingly. The larger sizes of highly colored fruit met with a fair demand, but small sizes were very dull. What few sales made were at old prices for oranges, 1 1/2c per pound in the grove picked. Grape fruit dull at last week's decline. Packers buying but few and paying 1 1/4c per pound

in the grove picked. Lemons very draggy, even at the decline of last week. Packers only offering 1/2c per pound in the grove picked for the best. Poor have to be sold for what they will bring.

AUCTION SALES.

New York, May 7.—Sales today were: Forty-nine cars navels, one car Michaels, one car sweets, five mixed navels, bloods and tangerines, and three cars lemons. Better demand for oranges. Prices of all grades 10 per cent higher. Some fancy, 15x20c higher. Lemons easier. Attendance good. Weather cloudy. California navels averaged \$1.45@3.00; bloods, \$1.70@2.13; Michaels, \$1.70@1.97. Lemons averaged \$2.00@2.90.

Boston, May 4.—Seventeen cars sold. Market higher on oranges, unchanged on lemons. California navels averaged \$1.30@3.15. Lemons averaged \$1.40@1.65.

Philadelphia, May 4.—Eight cars sold. Market higher on oranges, unchanged on lemons. California navels averaged \$1.35@2.65. Lemons averaged \$1.80.

GRAIN BAGS SCARCE—BUY EARLY.

Grain growers who have not bought bags for the coming crop may well prepare to handle their grain in bulk unless their local merchants have a supply. The Prison has sold all the bags it can make to the end of July, though one grower recently was guaranteed delivery of 50,000. Previous to last year 50,000,000 to 60,000,000 grain bags have come to United States from Calcutta annually. Last year about 35,000,000 came. This year the total supply available is estimated at 32,000,000, most of which is enroute now. These have practically all been sold into second hands by the importers. The price now is 11 1/4 to 12 cents, with good prospects of increase.

LOS ANGELES.

Los Angeles, May 8, 1917.

BUTTER.

Receipts of week ending May 8 246,950

Receipts of same week last year 324,500

There was quite a dropping off in the receipts the past week, and the market here ruled steady and firm up to Monday, when, in sympathy with a higher market in San Francisco, extra creamery was bid up 1c and no sellers. The local consumptive demand holds up fairly well and there was some shipping movement. The volume of trade, however, was no better than a year ago. There was some buying for storage from the outside, and the cold storage holdings now are 44,403 pounds greater than this time last year. In Chicago extra creamery declined 1/2c up to Monday, the market there then being 38c against 38 1/2c the same day last week. In New York the market for the same time lost 1/2c, extra closing there Monday at 40c. This weakness East, however, had no influence upon the market here on the coast, which is being controlled by a good shipping demand from the north and no increase in the production. Tuesday brought no change. On call there was nothing doing, no bids or offers, and the market was left the same as the day before. The East and San Francisco were also unchanged.

We quote:
California extra creamery 34c
Prime first 33c
First 32c
Daily quotations:
1917— Wed. Th. Fri. Sat. Mon. Tu.
Extra 33 33 33 33 34 ..
1916—
Extra 24 24 24 24 26 26

EGGS.

Receipts (railroads) for week ending May 8, 1917, 3,366 cases.

Receipts (railroads) for week ending May 8, 1916, 4,565 cases.

There was less life to the market on 'change the past week than for some time. Receipts were much the same as the week before and there was a very fair consumptive demand and some little shipping movement to nearby points. There was little disposition to buy for storage at the present high prices. Stocks in cold storage here now are 13,725 cases greater than this time last year, and they have been bought at prices averaging about 9c to 10c higher than last year. In San Francisco the market showed no change up to Monday, while in Chicago first advanced 1c up to Monday and in New York 1 1/2c to 2c. This improvement East, however, failed to influence the market here, which was controlled by local influences. Still prices are 10c higher than this time last year, due as much to the high cost of production as anything else. Poultry people claim that at present prices they are making nothing the receipts were light and San Francisco was up 1/2c, yet the market lacked life. On 'change there was nothing doing and the market was made the same as the day before.

Daily quotations:
1917— Wed. Th. Fri. Sat. Mon. Tu.
Extra 32 32 32 32 32 32
Case count 31 31 31 31 31 31
Pullets 25 28 1/2 28 1/2 28 1/2 28 1/2
1916—
Case count 21 1/2 21 1/2 21 1/2 21 1/2 21 1/2

POULTRY.

The market continues quiet and weak. Receipts of light hens and broilers continue liberal, being driven in by the high price of feed. Light hens and broilers have been marked down again and heavy hens, roosters and fryers remain steady, and turkeys and ducks are unchanged. Heavy hens and fryers in fair demand, but all else slow sale.

We quote from growers:
Broilers, 1 1/2 to 2 lbs. 20c@21c
Fryers, 2 1/2c to 3 lbs. 23c
Hens over 4 lbs. 18c@19c
Hens under 4 lbs. 14c@15c
Ducks 20c
Geese 15c
Roosters, 3 lbs. up (soft bones) 20c
Turkeys, heavy, 12 lbs. and up 20c@30c
Turkeys, light 24c@25c
Squabs, live, per doz. \$1.50@3.00
Dressed 3.75@4.85

BEANS.

The advance noted a week ago is being maintained. The demand, however, was only fair and mainly confined to seed. Stocks are light and holders claim that what beans being held will be needed for seedling purposes and are firm in their views in spite of the slow movement. The trade continues out of the market and is taking but few beans at present high prices.

We quote from growers:
Limas 18c
Large white 15c
Small white 15c
Pinks 13c
Blackeyes 12c@12 1/2c

HAY.

A little more coming in and the market is weaker. Some new alfalfa is coming in and it is selling lower. Grain hay unchanged but weak. A fair demand is being had from the country, but the dairy people are buying but little hay, using mostly green alfalfa. With increased receipts it is thought that the market will work lower.

We quote f. o. b. Los Angeles:
Barley hay, ton \$21.00@23.00
Oat hay, ton 22.00@24.00
Alfalfa, northern, ton 19.00@20.00
Alfalfa, local, ton 20.00@21.00
Straw, ton 11.00@12.00

NEW VEGETABLES.

A steadier and more healthy tone pervaded this market the past week. Offerings were better, and the increased supply brought a better demand, as most of the vegetables are now in reach of the average consumer. Cabbage coming in quite freely and a little lower, but fair demand. Asparagus continues to glut the market and sells very cheap. New pota-

BUMPER RICE CROPS IN ASIA—FREIGHT RATES HIGH

Practically every rice-producing country in the Far East has a rice crop far above the average, and some of these countries have bumper crops. Prices on the Hong Kong market are comparatively low; but at present it is almost impossible to get adequate freight accommodations; and freight rates are still further advancing. The total turnover on the Hong Kong market during 1916 was estimated at 820,000 tons, compared with about 800,000 tons in 1915 and 720,000 tons in 1914. The West Indies and Central and South American countries had been importing from the Far East largely via German ports before the war, but are now importing through the United States.—Consul General G. E. Anderson, Hong Kong, China, Mar. 14, in U. S. Commerce Reports.

atoes are weaker under steady arrivals, but demand fair. New onions are also off a little, but sell fairly well. String beans coming in more freely and a little lower. Summer squash is now coming on the market, both from the Imperial Valley and from local growers.

We quote from growers:
Cabbage, per cwt.\$2.00@2.25
Asparagus, per lb., local and north-ern3@4½c
New potatoes, per lb.5@6c
Peas, per lb.3½@4½c
New onions, silver skins and Ber-muda, per crate\$1.60@1.75
String beans, wax, per lb.9@10c
do, Kentucky Wonder, per lb.10@11c
Summer squash, per 4-basket crates\$1.20@1.25

BERRIES.
A steady and somewhat firmer market was had the past week. The abundance and cheapness of strawberries caused freer buying and more liberal consumption.

Prices are now so low that strawberries are in the reach of the poorest. Demand very good at the prices. Blackberries are coming in more freely and lower, but in fair demand. A few raspberries were in during the past week, but they were high, selling at 18c to 20c per basket.

We quote from growers:
Strawberries, poor to choice, per 30-basket crate90c@1.00
Fancy, per 30-basket crate\$1.20@1.25
Blackberries, per 30-basket crate. 2.75@3.00
Raspberries, per 30-basket crate.. 5.00@5.50

HONEY.
There is no change to note in the honey situation here since a week ago. The weather continues unfavorable for the accumulation of any amount of honey by the bees. The past week was another one of chilly nights and partly cloudy days. No honey is being extracted and none marketed, hence we are unable to give quotations.

Special Livestock Market Report

San Francisco, May 9, 1917.

Hay fed cattle command ½c@¾c above grass fed.
Grass Cattle—
Steers, No. 18½@9 c
No. 28½@8½c
Cows and Heifers7½@7½c
No. 26½@6½c
Bulls and Stags6½@7 c
Calves, light8½@9 c
Medium8½@8½c
Heavy7½@7½c
HOGS are coming as usual. No change. Plenty of light weights arriving.
(Rough docked 10 and 20 pounds; piggy sows, 20 to 40 pounds.)
100 to 150 lbs.12 c
150 to 300 lbs.14½@14½c
300 to 375 lbs.14½@14½c
SHEEP.—Lambs rather poor condition. No change.
Prime Wethers11½@12 c
Ewes10½@10½c
Milk Lambs12½@12½c
Yearling Lambs12½@12½c

WOOL.—While quotations remain unchanged, the outlook is less promising on account of the British embargo.
Sacramento Valley, spring clip....40@45c
MendocinoNominal
Cloverdale40@42c
San Joaquin, 8 mos.26c
San Joaquin, year's35@40c
Southern, spring clip28@30c
Southern, 7 mos.22@23c
Imperial Valley, 7 mos.30@35c
Nevada, year's35@40c

Los Angeles, May 8, 1917.

CATTLE.—A weak and slow market was had the past week. The offerings were the best for some time, the high price of feed and drying up of pastures making country holders more anxious to realize. Some grass cattle are also arriving, which is having a weakening influence upon the market. California and Arizona furnished most of the arrivals and the cattle coming in were in fair condition. Calves continue dull and weak. A good many arriving.

Per cwt. f. o. b. Los Angeles:
Beef steers, 1000 to 1100 lbs.\$9.50@10.00
Prime cows and heifers7.50@ 8.00
Good cows and heifers7.00@ 7.50
Calves8.00@ 9.00

HOGS.—The market remains much the same as a week ago. A very fair run of young half fat hogs were had during the week, mainly from California, but choice grain fed hogs were scarce and continue to command a premium over general receipts. A few Arizona hogs were in, but they were generally light weights. No Idaho hogs received, they still being drawn east by the high prices there.

Per cwt. f. o. b. Los Angeles:

Heavy, averaging 250@300 lbs.\$11.50@12.00
Mixed, 200@250 lbs.12.00@13.00
Light, 175@200 lbs.12.00@13.00
Rough docked 20 pounds, piggy sows 40 pounds and stags 40 per cent.

SHEEP.—More sheep were offered the past week than for some time and ewes are down \$1.00 per cwt. The high price of feed and good prices that still prevail and less urgent demand for mutton and lamb causing killers to hold back and they are wanting fewer sheep and lambs. California and Arizona furnished most of the supply and as a rule the offerings were in fair flesh, though the lambs were hardly so fat as previous years.

Per cwt. f. o. b. Los Angeles:
Prime wethers\$ 9.00@10.00
Prime ewes8.50@ 9.00
Yearlings10.50@11.00
Lambs13.00@14.00

North Portland, May 7, 1917.

CATTLE.—Today's cattle market opened with only 500 head, but a string of California grassers received during the day swelled the total to about 1,000 head. The market opened strong with steers moving at steady prices, while cows scored another 25 cents advance. The California grass steers while not fat were better than expected, considering the hard winter. Heavy hay feds sold well with several loads of light grain feds.

BEEF STEERS.—There was a liberal supply of beef steers here today. Prices were mostly steady with a week ago. One load of light grain fed steers sold early at \$11.25, which was probably a little higher with a week ago with another load going at the same price, although they were the better cattle. Heavy beef steers sold up to \$11.00, with a load at \$10.75. Eight loads of grassers sold at \$10.25 straight, but were not of extra good quality. Medium grades of hay steers sold from \$9.75 to \$10.00.

COWS AND HEIFERS.—Demand for cows continued very good today with a good run. A load of fairly good cows sold at \$9.25, with a few small sales at higher prices. Fair to good cows brought \$8.75 to \$9.25, while ordinary grades sold from \$8.00 to \$8.50. Thin dairy kind \$6.00 to \$7.50.

BULLS.—There were only a few bulls on the market with but little demand. Prices ruled steady in most cases. There were no strictly fat heavy bulls here, but are selling from \$8.00 to \$8.50; medium heavy bulls sold from \$7.50 to \$8.25, with ordinary kind down to \$6.50.

HOGS.—Killers made another attempt to break the hog market here this morning, but as usual it did not amount to much. Speculative demand made them take notice and when trading began it was on a basis fully steady with a week ago, in all cases except pigs, which suffered a 25 cents decline in some sales. There was a fairly good supply over 2000 head. Best heavy hogs sold from \$15.75 to \$15.85, while prime light hogs brought \$15.60 to \$15.70. Good light hogs sold down to \$15.45.

SHEEP.—There were no sheep on the market today, and prices remain steady.

Publisher's Department.

Two hundred and fifty two new paid subscribers were added to our list during the week ending May 5.

Mrs. R. S. Spaulding of Woodland writes: "I find the Rural Press the best paper I have ever advertised in." Mrs. Spaulding's specialty is purebred poultry.

If you are interested in dairying and livestock, keep this issue on file for future reference. The announcements of many of the foremost California breeders will be found in the advertising columns, in addition to those of the supply dealers.

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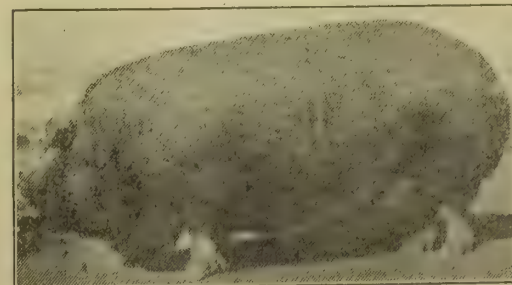
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"IT"

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We desire to announce that we have just purchased the

Famous Herd Sire "IT"

"IT"

"IT"



"IT"

"IT"

IN our endeavor in the last year to purchase a herd sire that would stand second to none in the United States in respect to breeding and individuality, we finally decided that our requirements could only be fulfilled by that wonderful bull, "It," the widely noted herd sire in the Steven Bros. herd, Liverpool, N. Y.

HIS BREEDING in respect to great yearly butter production is unequalled by any other bull in the world. His dam, Pontiac Clothilde De Kol 2d, was the first cow to make 37.21 lbs. butter in 7 days, 145.29 lbs. in 30 days, or 1,271.6 lbs. in a year. She is the only cow in the world to ever make 1,000 lbs. fat in a year to ever come back with a 30 lb. record the next freshening. Her seven days' records from two to eight years of age as a whole have never been equaled.

HIS SIRE, King Korndyke Hengerveld Ormsby, has 34 A. R. O. daughters, including three over 30 lbs. His full sister has made over 1,000 lbs. fat in a year.

HIS SIRE'S dam, Pieterje Maid Ormsby, has twice broken the world's record for 30-day production. She made 35.56 lbs. butter in 7 days and 145.66 lbs. in 30 days.

HIS OPPORTUNITY has already served to make him one of the most noted sires of the breed. He has been used almost exclusively in the last four years upon daughters of

King of the Pontiacs, the greatest sire of the breed in respect to number of 40 lb., 30 lb., 25 lb., 20 lb. and A. R. O. daughters. He will be bred annually in our herd to over 150 females, which now include six 30 lb. cows, with a lot more yet to come; twenty-five 25 lb. cows, and over a dozen 20 lb. two-year-olds, which will give him the greatest opportunity of any bull in the West. Keep your eye on "It."

FOR SALE

Owing to the fact that we intend to use "It" and his half brother, King Segis De Kol Korndyke, exclusively upon our whole herd, we are offering at half their real worth our other two herd sires, both of whom are just past two years of age, are nicely marked and are splendid individuals. King Korndyke Sadie Vale 27th, who is the only son ready for service of his noted sire that is for sale. His three nearest dams average over 33 lbs. butter for 7 days and his six nearest dams average almost 32 lbs. of butter, which averages are unexcelled by any other bull in the West. King Winnie, whose dam, Winnie Korndyke Cornucopia De Kol, holds the world's milk record for ten months by over 450 lbs., and who is the only cow to make over 31,000 lbs. milk and 1,200 lbs. butter in a year.

FEMALES AND YOUNG BULLS ALWAYS FOR SALE

McALISTER & SONS, CHINO, CAL.

"IT"

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THE PACIFIC RURAL PRESS

SAN FRANCISCO

MAY 19, 1917.

LOS ANGELES

Labor Questions California Farming is Up Against

[Written for Pacific Rural Press.]

ABOUT a hundred persons assembled in Sacramento, May 11. These persons may be roughly classed in thirds, viz.: farmers, near-farmers and non-farmers. They answered a call of the California Farmers' Protective League, and they all found out, at the end of five hours of hard talking, that what California farmers really need is protection against their own greed, inhumanity and impolicy and that they will be immediately furnished such protection by the patriotic politicians, social philosophers and sanitary policemen of the State—but of all that we may say what we think on another page. In this place we desire to state a few prominent declarations made at the meetings, but unfortunately we cannot do that with full justice to the speakers nor their speakings, because they surely talked the fill of this issue of our journal before they tired each other out. Still we may be able to state enough to show the imaginative reader the swing of the discussions. —

ORIENTALS SOMETIMES NECESSARY.

What was well designed to be the keynote of the occasion was struck by Chairman G. W. Pierce in these words:

"The farmer has come to be the most important factor in the present struggle, and the labor question has become an acute problem. If the government could raise forces of farm hands to go from state to state when and where most needed, it would afford relief. The Oriental exclusion act and literacy test for aliens are good pieces of legislation, but are responsible for a good portion of the shortage in farm help.

"A man with good muscle and an average amount of common sense will make an efficient farm hand. The factories, the railroads and the cities pay better and afford more comfortable living, and are strong competitors with the farm for labor. Now the call for volunteers to serve in the armies and navies have taken more. 'The Man with the Hoe' has been immortalized, and now the hoe is manless. Orientals are not desirable, and under ordinary conditions we would not want them among us, but there are times when it becomes necessary to have them."

OFFICIAL EYES SEE NO LABOR SHORTAGE.

Probably not by concerted action but rather by community of political interests and perhaps through wholesome fear of organized, non-agricul-

tural influence which all political patriots seem to be born with, all the official speakers, who were invited to help the farmers solve their distressing difficulties, agreed to reach solution by denial of their existence or, if they do exist, it is the farmer's own fault. L. C. Owens, assistant secretary of the State Council for Defense, read a report in which he claimed that there was no shortage of help in the Sacramento district. Plenty of cherry pickers had been supplied and there were plenty of men willing to work on the farms if living conditions were better. He said in many places

there were no bunk houses at all and men had to burrow into haystacks to sleep. One man slept in a piano box in a cow shed and not a too sweet smelling cow shed at that. Mr. Owens said that the man who offered \$1.50 per day and took the man in and treated him like the family got all the help he wanted, while the man who paid \$2.50 and provided poor accommodations for his men got no one. Speaking more broadly, Mr. Owens said there were men available if living conditions were changed. He ended the report by saying that there is no real shortage of labor and if handled properly there will be none. It all depends on the way the men are treated. If the farmers will co-operate with the State, the farm labor problem will be no problem at all.

F. E. Stahl, in charge of the State's free employment bureau, corroborated Mr. Owen's report and said that good food and comfortable quarters would help solve the problem. He did not seem to be quite so sure as Mr. Owens that there was no problem, however.

MORE LABOR OF THE RIGHT KIND A FUNDAMENTAL NEED.

By this time the swish and gurgle of the stream of official eloquence had well nigh drowned the keynote of Chairman Pierce, that, undesirable as it may be

for certain reasons, "there are times when it becomes necessary to have Orientals." But there were some sharp echoes of the claim. E. L. Shelly of Grand Island spoke from long experience in growing delta products of all kinds. He held that the claims of ill treatment of white laborers are grossly exaggerated, but chiefly maintained that such white labor as could be had, except in a few instances of thoroughly good men, as teamsters, etc., was both unwilling and unfit and could not be depended upon. Instead of being abused, if you even look cross-eyed at them they will leave.

(Continued on page 621.)



TWO CALIFORNIA FARMING LANDSCAPES: WHICH?

At the Sacramento meeting officials said if farmers could not find white labor suited to great specialties they should revise their farming so the family and the old-fashioned, hired man could handle it. The pictures suggest the contrast involved in this proposition.

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R. E. HODGES - Assistant Editor
J. C. LOOMIS - Assistant Editor

EDITORIALS

THE FARMER'S VOICE IS HUSHED.

JUST at the moment, it is not the thing itself so much as the manner of its coming off which makes us mad. Exclusion of the most serviceable of the Orientals for farming uses nearly forty years ago was afterwards admitted by the great apostle of it, Denis Kearney of the Sand Lots, to have been a mistake. This admission was made because absolute exclusion was an extreme measure, taking no thought of consequences. Toward the end of his life Mr. Kearney saw that what he had done in his haste was wrong: that his purposes could have been much better served by a limited, selective exclusion: that he need not have interfered with the farmers' use of such Chinese as their enterprises required: that he need not have discriminated against the agriculturally best of the Asiatics—thus opening the doors to others who have proved less trustworthy and more aggressive: that he need not have taken the ground that California farmers were so stupid as not to know what was good for them. It was the claim of those farmers of forty years ago that they could not stay on the land unless they had a loyal, efficient and contented labor supply, but their voice was hushed beneath the clamor of race prejudice, demagoguery and political ambitions. It was a triumph of an extreme recourse and therefore no insight of moderation and conservatism could withstand it. But the farmers' claim that they could not stay on the land without the labor they needed has been proven true. The older owners and developers have been retiring from the land, instead of ripening their years in comfort amid the scenes of their earlier enterprise. For forty years, and to this day in increasing numbers, the white-race pioneers and their descendants have disappeared from communities which they established and built up. The white-race prejudice of the Sand Lots has wrought for two scores of years to the prejudice of the white race on the farms. Denis Kearney was right when he admitted that his crusade was too extreme and thoughtless and brought consequences which are natural to unthinking radicalism.

PUTTING OVER A NEW HUSH.

BUT the exclusion of foreign labor supply is the thing which does not excite us at this moment. It is rather the manner of it, which recalls the extreme insistence of the Sand Lots, which awakens us to protest. We have tried to give on other pages a sketch of what was called to be a farmers' assembly in Sacramento on Friday of last week. The reader will perceive that as a representative farmers' assembly, both numerically and geographically, it fell short. He also will perceive that as an outspeaking of non-farming beliefs, policies and interests it was over-rich. The idea of such a meeting, as it was cherished by its farming proponents, was good: the working out of it was exactly contrary to its conceived purpose.

The idea was this: farmers are called upon by

a national emergency to increase production: farmers are ready with patriotic spirit, with lands and outfit and with such money as they have or can get, to make a supreme effort for maximum output of foods—but such a thing cannot be done without adequate labor of the right kind. Farmers have now no such supply: it is but right that those in authority should know this and should help farmers to secure this essential factor of production.

The outcome of the meeting was, as shown in the sketch on other pages, that insufficiency of visible labor was denied: that farmers could not get the labor they needed because they would not treat it properly: that if the work for special products which world-trade calls for is too hard or disagreeable for such labor as is claimed to be abundant, such products should be abandoned: that farms should be planned and operated, not to bring in millions in cash for the upbuilding of the State, but as lodging and boarding places for the farmers' helpers, and if, after serving this purpose for humanity, the farm could sell enough left-overs to get cash for taxes, the farmer would be a great patriot—a good, stout pillar in the basement of the commonwealth!

And this view, voiced by state and national authorities in goodly number, prevailed. A great hush fell upon an assembly called by farmers to ascertain what farmers could do to discharge their full, patriotic duty!

HOW THE MUFFLER WAS PUT ON.

NOW WE wish it clearly understood that the official representatives of authoritative patriotism who so politely suggested that the farmers should go way back and recline upon their idea that new sources of farm labor must be drawn upon, did not behave themselves unseemly nor did they of their own volition intrude their views upon the assembly. They were invited by the organizers of the meeting and it was perfectly right for them to express their convictions: it would have been wrong for them to do otherwise. Therefore, we offer them no affront nor did the assembly do so. If the farmers smiled at the diagnosis of farming conditions and prescriptions for farming cures which these officials presented, they did it in their sleeves—for they felt the great hush which these speakers almost unconsciously brought down from above or up from below, as the reader may for himself conclude. What excites us is not what came but the manner of its coming. Last week's meeting was only a new and somewhat unique exemplification of what we are getting, quite cross about, and that is that when an intrinsically important agricultural fact or requirement appears, or when an issue arises in which the farmer is a fundamental factor, neither the farmer himself nor those chosen by him to represent his social or industrial point of view are expected to have any weight or influence in determining what is to be the adjustment of the matter to the farmer himself, to his God or to his fellow man. Take, for instance, this present question of the farmers' ability to meet the emergency in food production. There is nothing clearer or surer than the fact that there is no adequate supply of suitable farm labor. It is not peculiar to California: it pervades this country: it occupies many civilized nations. It is not new: it existed before the war and it has handicapped farming progress here and abroad. It is now more acute than formerly and it absolutely determines the amount of foods which can be grown, even if all other things are favorable to maximum production. Now, why is it denied outright or met with interrogative denials accompanied by declaration of vain substitutes for the qualified, competent and ever-ready help which the producing farmer knows he must have? Why do those in authority scout the farmer as a qualified expositor of his own business needs? It is simply because he has no organized advocacy of his needs and desires. Therefore, when the California farmers declare they must have help from outside which will do work and not boss the farm, what happens? Just what happened last week. As soon as the first note was sounded that help must come from the outside, the political muffler was put on, all the way from Washington to Sacramento, and, lest any pulsing

of the farm motor should be heard, the hurdy-gurdy of political employees was set to playing—

So long, Mary: Mary, we will miss you so!
So long, Mary: How we hate to have you go!

POLITICS AND FARMING.

"BUT," says some innocent reader, "how can you suggest that politically Washington and Sacramento are in the same drive against the farmers' idea of the help he needs? Are there not different parties in control in Washington and at Sacramento?" Of course they are different and still the same: parties are different, politics are one and inseparable. Politics are the only universal, all-pervading science. And so it is that we find all employees of parties, which are strong enough to have any, worship the same forces in the electorate and are by their very nature compelled to do so: and, naturally also, all the employees of all such parties pour out libations of selective philanthropy or wave the yellow-peril offering or light the fires under alleged immorality, to propitiate their political gods, whenever the farmers even whisper that they must have capable and willing labor or their production must decrease. The manner in which such a proposition is received when an organized force is pitted against unorganized convictions and claims is illustrated by the fate of the Sacramento meeting which was called to voice an agricultural claim and belief and really voiced nothing of the sort. In the nature of things the meeting as it was constituted could not do otherwise.

As stated at the beginning, it was not the thing itself but the manner of it which excites us. It is clear enough that no labor supply from the outside, even from our own insular possessions, can be admitted. We are neither approving or condemning this fact, nor do we invite any reader to send us his views on that subject. We have no space for discussion of what seems to us a dead issue. The question of how it died is, however, alive and should be understood. In one of the daily papers there was last week a brief interview with a representative of organized labor. This representative was asked what the labor unions had done about the farmers' appeal for imported labor and he said no action had been taken up to that time, but the labor unions would unanimously oppose it. It was a frank, clear, confident statement from a man who knew the forces he was representing. And not only did he know it, but all the politicians knew it and all the people of average intelligence knew it. We even knew it ourselves and we respect and admire it because it comes from men who have the strength of their convictions about what their interests are. We are not excited about what the labor unions do, when they act within their human rights and whenever they go beyond such rights they are perhaps not so much to blame as we are for making it possible. However, some of its purposes and methods may deserve condemnation and punishment, labor organization as a whole is a magnificent demonstration of what has to be done to get recognition for vocational points of view and service to vocational interests. In the light of their achievements it is very easy to see that farmers, unless they organize widely and effectively, will never get even respectful consideration for their needs and convictions. And so long as they send a minority to represent them at a meeting called to make these needs and convictions known, they will get from the politicians, and from people generally, just the same funeral hymn which the official hurdy-gurdy played for them at Sacramento—"So long, Mary."

SUBSTITUTES FOR FARM LABOR.

AND NOW we are promised by those in authority that they will make good their claims that enough farm labor can be gathered from the State itself. We hope they can make such a demonstration, for that seems to be really about all the hope there is, and farmers will make the fullest use of whatever supply the officials may discover, providing it is energetic, well-behaved and willing to take orders. We must, however, record a protest and a warning against filling the rural communities with peace breakers for whom the country has no adequate repressive machinery.

ery and against whom it has no adequate protection. The following appears in one of the daily papers of this city:

San Francisco police judges and district attorney believe that it would be possible to send at least forty men a day from the four departments of the Police Court to aid the farmers. The persons are those whose besetting sin is liquor, and who are not natural criminals. The judges are convinced that there is a chance for at least 90 per cent of them to "come back" in proper environment and through correct living. The plan is to keep a register of help wanted and where, and to give the calendar of the court each morning a thorough combing, select the best material, send them to the country with fare paid and at a living wage, and give them a chance to redeem themselves and be ready for drafting into the army after a six months' or a twelve months' session on farms.

Of course, we have no hard words for these unfortunates, but the city people should be made to understand that it is just such persons that no busy farmer can possibly afford to have on his

place—no matter how philanthropic he might be at heart. Men who are gone far enough to require a half or a full year's reformation must be pretty near the genus "bum." Such men are physically unfit for farm work—without mentioning other disqualifications. As laws now are, a farmer employing such a man might lose his horses or break down his machinery and have also to pay damages to the unfit man who was hurt in the losses he occasioned by his own unfitness. If it were not so serious it would be funny to read the charges against farmers which the speakers at Sacramento made of ill-provision for white laborers and then read the provisions which the San Francisco philanthropists are making to send them a white labor supply! Really, city people, politicians and philanthropists, would it not be better to let the farmer attend to his own business? He is not organized to demand it, but would it not be possible for you to do more of your own work and less farming of the farmers?

By
the Editor

QUERIES AND REPLIES

Inquirer Must
Give Full Name
and Address

Root Knots on Old Trees.

To the Editor: Have trouble with some of my peach trees. A knot forms on the root near the trunk under the ground, and it looks like dried cork. I cannot find any cause for it. Please can you tell me?—J. M., Monterey.

The excrescence or knot is caused by a fungus which has secured entrance to the tissue. If it has not spread over so much surface that removing it would girdle the tree and destroy what is now good bark, you can chisel off the knot and cover the wound with Bordeaux paste. If doing this would practically bark the tree, let it alone and keep the tree as long as profitable and then plant another in a new place. It is, of course, always desirable to have new orchard coming on, if you have the land for it.

One of the Grape Vine Hoplias.

To the Editor: Can you tell me what the enclosed insects are, and what to do to get rid of them or prevent them from coming next year? They arrive by the thousands as soon as it's warm in the spring and eat all my roses and most of the other flowers, and now they are beginning on the grape vines, both leaves and buds.—R. L. S., Porterville.

The insects are beetles of the chafer group and their proper name is *Hoplia pubicollis*. They are about a quarter or three-eighths of an inch in the length of their rather blunt bodies, with legs too long for them. They can be recognized by the silvery colofs of their under surfaces. They are an old pest of the vine and took to eating grape buds and foliage as soon as the pioneers began to grow them in the southern districts of the San Joaquin Valley. They are apt to be found quite widely in interior valley and foothill locations. As you have noted, they have a wide range of food plants. They grow underground as grubs on the roots of grasses and weeds on unplowed land—flying from such places to fruit plants and flowers as beetles. They can be killed by spraying the foliage of plants they attack with lead arsenate—2 pounds to 50 gallons of water, or, on a small scale, a tablespoonful to a gallon. This is, of course, poison and must be handled carefully in garden work. The insects can be shaken into a catch-pan of water with a little kerosene, by jarring the plant they infest.

Late Plowing and Fertilizing Apricots.

To the Editor: I have six acres of cots about eight to ten years old. I usually have an average crop in size and quantity. I plant peas for cover crop and pick from \$75 to \$100 worth of peas from the vines, but by doing so I delay the plowing about three weeks. I keep orchard well watered. I want to know if this delay in plowing (which will delay this year until May 24) is any disadvantage to my fruit, and if so to what extent. Also is it too late in the season to use nitrate of soda and superphosphate? What will it cost and where is the cheapest place to get it?—C. A. L., Hemet.

The late working will not hurt the crop if you

keep the moisture right. An irrigation before plowing in the litter of the pea crop would serve the trees and help decompose the litter. One would think the pea roots, etc., would give you nitrogen enough, but a little nitrate might help because immediately available. One hundred pounds of nitrate and 400 of superphosphate would be a good proportion. These are standard simple articles and prices will not vary much between reputable dealers. As they are soluble, it is not too late to use them in connection with irrigation.

Irrigating Beans.

To the Editor: If but one irrigation is to be given pink and small white beans, at what period of growth may same be best applied? I should assume the best time would be just before the blossoms appear, in order to induce the plant to supply further space for more blossoms, but perhaps the assumption is incorrect.—R. H. R., Lake-side.

Your guess is a good one—unless the plants come to bloom with notably good vigor and show signs of ample soil moisture. In that case we would irrigate after pods are set. If, however, early blossoms blast, as is the case in many hot interior places, the plants may need water during such a long blooming period to keep the plant strong enough to keep on trying for a set of pods. Irrigating beans depends upon the location with reference to the presence or absence of aerial moisture: it also depends upon the soil and cultivation in the retention of moisture. There are two things to be guarded against: one is not to allow the plant to perish before it can fill a pod: the other is not to irrigate so much that it is kept on growing too late and setting too many pods without properly maturing any until it is caught in a possible early fall frost or the crop is injured in an early fall rain of some duration. This has to be determined by experience or by reason and judgment: not by schedule.

Fertilizers for Beans.

To the Editor: What is a good commercial fertilizer for a bean crop to get results this year, and how much per acre? Our land shows very little lime and no alkali, but is lacking in humus. What do you think of this superphosphate?—H. L. J., Modesto.

Of course, the fertilizer will not get results, but it will help you to get them. Superphosphate is good, for it gives you both lime and phosphorus, but for dry beans, not counting what the soil may contain, it is best to use a complete fertilizer and a good mixture is the following per acre: Nitrate of soda, 40 pounds; dried blood, 20 pounds; superphosphate, 250 pounds; potash, 80 pounds. Manufacturers may, of course, vary some of these elements of a complete fertilizer, according as materials are now available. The substances must be thoroughly mixed and evenly applied to the whole ground and not bunched around the seed.

Summer Treatment of Beans

To the Editor: I will appreciate it if you can help me in solving the following problem in cultivation: We have a medium heavy soil, located near Ceres. Next month a crop of barley will be taken off, after which we flood thoroughly and plow as soon as possible thereafter. By July 1, after proper preparation, we usually have beans planted—blackeyes, pinks and teparies. We have in the past harrowed the land directly behind the plow and then twice just ahead of the planter. Do you think that rolling at this part of job would increase the bean yield? There are spots that are quite moist and I do not know what effect a roller would have on such places. With the plowing and harrowing and no cultivation between the rows afterward, except hoeing weeds, we have harvested from nine to twelve sacks of beans per acre (100-pound sacks). We have never tried shallow cultivation and none of our neighbors have done so on second crop beans after they were planted. I would like to know if you think it would pay. If it is true that a dust mulch becomes ineffective after ten days or two weeks, I should think it would be beneficial to use the disc cultivator.—E. B. D., Ceres.

If your regular system of getting your bean plants into moist earth with a loose surface and then laying them by for growth secures thrifty plants and good product, you have perhaps less to gain than frequent cultivation would cost. As you say that such is the adopted practice of your section, it creates an impression in favor of the method as being the result of local experience. On the other hand, if the weed-cutting hardens the surface and the middles are seen to be hard and baked, there can be no doubt that better surface tilth would conserve more moisture for the plants and make them more thrifty and productive. You must settle such a question by good thinking on the basis of soil conditions which you see. For loosening in connection with weed-cutting between the rows, light discs working over cutting blades may be pretty near an ideal of a surface-working outfit. Implement makers are, however, securing the same conditions with many different soil stirrers. The roller should not be used on moist soil unless it is very light. The effect of the roller is to compact the surface layer and, by restoring capillarity, bring moisture nearer to the surface. On a light soil this ensures the starting of seed and early growth of plants, which, without rolling, might perish from drying out because the surface is too loose and open. On other soils a better style of compacting or settling is secured with the harrow. Heavier soils, when very dry, may be helped by rolling, but that is not what you ask about.

The statement that a well-pulverized surface layer only acts as a blanket against evaporation for a short time is true if the air at any time of day or night carries considerable invisible moisture, or where visible in dews or fogs. In California such moisture is encountered in coast and mountain valleys and in such cases the soil surface should be frequently stirred, but not turned over. In the great valley, away from the intrusion of coast winds, a surface deeply stirred early in the summer may hold its efficiency as a check upon evaporation for a much longer period. Try it with your hand or foot and if it is dry and loose for several inches—down to where it is taking moisture from the moist, firm layer below—it does not need stirring. But if it is crusty at the surface or two or three inches below, it should be stirred at once and at short intervals afterward, for such disposition to compacting is a menace to moisture conservation and a sign that sun and dry air are robbing the plants.

California Weather Record

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau at San Francisco for the week ending at 5 p. m., May 15, 1917:

Stations—	Rainfall Data.		Temperature	
	Past Week.	Seasonal To Date.	Normal To Date.	Max'm. Min'm.
Eureka .....	.21	30.74	43.81	60 38
Red Bluff .....	.03	17.11	24.09	80 48
Sacramento .....	.01	12.84	19.63	78 44
San Francisco .....	.01	15.73	21.78	64 46
San Jose .....	...	12.41	16.39	70 36
Fresno .....	...	7.07	9.37	82 32
San Luis Obispo .....	...	22.54	19.98	66 38
Los Angeles .....	...	15.05	15.41	74 50
San Diego .....	.10	9.92	9.81	64 54

Well Prepared to Pack Cherries.

[Written for Pacific Rural Press.]

When labor is hard to get and wages are high, a little extra comfort for the help may make the difference between getting help or not. What H. A. Bassford of Solano county has done for his cherry packers could be done perhaps in a less expensive way by any group of cherry growers controlling as much orchard. Mr. Bassford has 5,000 cherry trees, the oldest of them twelve years old, from which he shipped 10,720 boxes last year, netting an average of \$1.50 per box.

Much of this good price is due to the packing, which is done by the day to insure better work. To get the fastest good work possible was the object of building the new packing shed which has been in operation since early May. It is 100 feet by 40, to accommodate also the three carloads of shook and sixteen kegs of nails bought early by Mr. Bassford. On a bench close by is equipment designed on the ranch for speedy construction of boxes. At the other end of the shed are six or seven packing tables, each partitioned off for four packers on each side of center. They are painted with heavy white lead, which enables easy cleaning and is not rough to bruise cherries. Cloth used as a padding in past years got dirty and wore out too easily. An inclined rack for each packer holds the box at 45 de-

grees and permits packing full from one end to the other, as we saw packers doing. Rubber mats for various sized cherries space them in the top of the box, which must later be loosened to remove the mats. A shelf lengthwise over the center of each table receives the filled boxes, and a shelf above that holds a supply of empties. At convenience the filled boxes are moved to the nailing bench in the center. This bench is covered with zinc to prevent getting slivers in the nailers' hands. The covered boxes are stacked on the floor beside the sliding doors, whence they are loaded into wagons whose beds are about level with the floor.

A ventilator in each end of the shed and forty-two hinged windows admit breezes. Glass windows above most of the ventilator windows make the shed light. The yard is sprinkled almost daily to prevent dust.

On May 7 we saw in this shed some nine-row nested Tartarians and ten-row solid Spauldings, extra large for this season. The latter is a white-pink variety originated on the "Ulati Ranch," as Mr. Bassford calls his home. Other varieties follow these and the Chapmans in such succession that the picking, packing and shipping are distributed evenly through six weeks.

Thins Peaches From a Wagon.

[Written for Pacific Rural Press.]

One man can thin as many fruit trees standing on a wagon as two can with ladders, said H. J. Vosberg of Yolo county when we found him walking around on a tight hay rack thinning half of a fifteen-year peach tree at every stop. "I'd pay a dollar a day for a team if necessary rather than use ladders." He could have kept two men busy on a wagon, and could have fixed a similar platform on a one-horse wagon if required.

Peaches should be thinned before the pits begin to harden, which would be after the middle of May this year in the Winters district. Pits contain more of soil plant food than the rest of the fruit, and this waste should be avoided. Too early thinning, however, might be succeeded by unfavorable weather and great loss of those left.

You thin differently when some limbs have a light crop as was caused on one side of the trees in Mr. Vosberg's orchard by frost. The tree can support a given number, and if the right proportion are not left on some limbs others may be left with heavier loads. Second-size peaches were not picked off because they would fall anyway, having been frosted, as shown by their brown pits. Since these were Lovells and Muirs for drying, less care was taken about spacing than for cannery peaches,

where size is a prime requirement. Still, where convenient, the peaches would be left in a whorl around their twigs, to take advantage of all the space there is, since a third to a half more were being left than would if the whole tree had been uniformly loaded. A twig a foot long would normally mature four peaches. No other attention was paid to location of reserved fruits either on upper sides or far from the bases. Where relative location of two peaches was equally desirable, the smaller one was sacrificed. Double peaches are not so objectionable for drying, though at least one of a double is likely to fall, and singles are preferred, if there. Muirs have more doubles than Lovells.

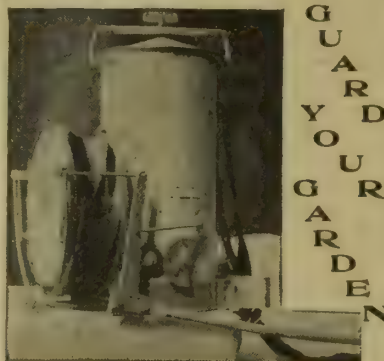
Where the fruit is pretty thick, considerable care is desirable to avoid loosening those that remain. It is even necessary to hold them safely sometimes while pulling off their mates. This is especially needed on the Muirs, which cluster more than Lovells.

Where fruit trees do not shade the ground too much crops of potatoes, beans and various kinds of corn may be grown between the rows, thus getting an income from the land while waiting for the trees to come into full bearing.

Fruit Tree Plant-Lice

Watch the fruit trees; and when plant-lice are found on the growing tips, drench them with spray under high pressure. Repeat a week or two later. If you let them get bad before spraying, they will do a lot of damage; and will also be better protected in many cases by curled leaves. Blackleaf 40, one part per 1,000 of water, with a few pounds of soap added, is effective and safe. Distillate emulsion, used strictly according to directions, is effective. It is dangerous if too strong. Blackleaf 40 added to this in above proportions makes it more sure. But spraying does no good unless it hits every louse to be killed.

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Red spider and mite, mildew, rust, and insects are at work on vines and trees. Dust now, before they get a start. Dust sprays are better than liquids, are cheaper and more easily and quickly applied. Serve your country by protecting your crops.

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Here and There in the Fruit Business

Humus Fundamental in Orange Production.

[Written for Pacific Rural Press.]
The great proposition that confronts the citrus grower at the present time is to get humus making material and organic fertilizer at a reasonable cost.

The experience of Chas. D. Baker, an eastern Los Angeles county orange grower, has been that unless there is plenty of humus and mulch in the soil the benefit of commercial fertilizers to a great degree is lost and results are not obtained in building up and retaining good producing groves for any long period of years.

In the fall of 1915 Mr. Baker applied two tons of alfalfa hay to the acre and disked it in, following in the spring with six pounds of blood and five pounds of superphosphate to the tree.

This season he has on one ten-acre grove an 8,000-box crop of oranges. He does not claim all results in the fertilizer alone, but by careful pruning, fumigating in the fall and spraying in the early spring has brought good results.

Sucker Apricots Now.

[Written for Pacific Rural Press.]
"Sucker apricots now," say H. G. Boyce and H. J. Vosberg of the Winters district. Mr. Boyce puts his men to this work so soon as they can be spared from fruit thinning, and believes that no suckers start after the

middle of May. Mr. Vosberg wants to sucker while the pits are hardening, which is a little later, to be sure few other suckers start. He mentions leaving suckers (watersprouts) on the upper sides of limbs, except where fruit wood already shades them. One man lost his next year's crop by cleaning off all sprouts and thus exposing the limbs to sunburn so they did not develop fruit buds. In the Winters district the general plan of pruning has been to run the main limbs out horizontally a little above a man's head, so they are thoroughly exposed to the sun if all growth is cut off. Unless suckers are taken out from among fruit wood, they will both rob and smother the latter to death.

Thinks Mulch Basins Will Be Plowed Up.

On account of devil grass in the Corona district, M. E. G. Tuthill, Deputy Horticultural Commissioner, thinks that people will be forced to plow up most of their mulch basins in citrus orchards. He also believes that with the same amount of fertilizers as is put in the mulch basins the trees would do equally as good if fertilized under the old plow system. The majority of citrus growers in and around Corona seem to talk against the mulch basin system, and with hardly an exception point out the Chase Bros. orchard (now in mulch three years) as a poor example of mulch system.

Labor Questions in California Farming.

(Continued from first page.)

The delta farmer has to have Oriental labor. It is not a question of wages. The farmer pays the Oriental high wages because the Orientals deliver something for their pay, no matter what their wages are. If the great special products which are making California famous are not to be abandoned, farmers must have labor they can use to make them come through.

Arthur M. Seymour followed by saying, "There is a definite need in the delta section and we think we have a definite remedy. This condition has not been brought about by war but has been growing for the past ten or twelve years. The white man will not perform a lot of work and we are forced to depend entirely on the Oriental. If we are to continue in this specialized farming such as California is doing, we have got to have labor and we have got to have Oriental labor. We ask assistance. We can keep up production if the Council of Defense will put into operation arrangements whereby this Oriental labor will be furnished.

G. W. Kesner invited the Council for Defense to go to his ranch and see conditions. The Jap and the Hindu have clean bedding and make for themselves clean quarters and take a bath every night, while the white man hasn't even a roll of blankets, and if he takes a bath once in two weeks he does well.

THE U. S. IMMIGRATION OFFICIALS WILL CO-OPERATE.

Interesting telegrams were read from Mr. Caminetti, U. S. Commissioner of Immigration, and help was promised by his local representative,

Captain White, in the way of help to ascertain what the labor supply and where the need. A very charming speech was also made by Mrs. Barfield, also of the Immigration office, which caused even her suggestion that if our farming cannot be done with white labor we ought to change our kind of farming to suit such labor, to be received indulgently by her hearers.

Judge Shields also made an impressive address upholding the necessity of preserving California for the homes and industries of white men. Several resolutions were presented and referred to a committee to be named by the chairman who should go on with the work which the convention was intended to pursue.

A very important statement was made by D. F. Lane of Turlock showing how the local association of growers is proceeding toward securing its needed labor supply and keep it well housed for local distribution co-operatively in the Turlock region.

OFFICIAL HELP PROMISED.

Since the meeting of May 11, and said to be a product thereof, the announcement is made that the State Council of Defense is formulating plans for co-operation of Federal, State and municipal employment bureaus in California in meeting the farm labor problem. A labor survey by the Council of Defense is under way and an effort will be made to secure reduced railroad fares to aid in the movement of workers from place to place, as needed.

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Sugar-Beet Growing at Corona

[Written for Pacific Rural Press by Chas. Barnum, Corona.]

Observations at this point show that beets, to do their best, should be sowed about February 1, 18 inches apart and two furrows between, with a drill, and 18 pounds to the acre. About the latter end of April they should be thinned out to one beet every 10 inches. Let beets go as long as possible the first time without irrigating, to avoid packing the ground and spoiling the original loamy condition of the soil. About May 1 comes the first irrigation, which should be repeated once a month till three irrigations are given, the last one not later than July 15. Cultivate after each irrigation, except the last one, because the beets are then too large and would be more injured than benefited thereby.

Plowing, planting, three irrigations, two cultivations and weed-hoeing twice, digging and hauling to the dump, consists of beet raising here at Corona. I know of good old alfalfa land here that grew nineteen tons per acre last year, while some hillside land not far off netted only four tons.

Plowing, drilling, cultivating, digging, and hauling to the dump, costs about \$28 per acre, while thinning costs from \$4 to \$4.50 per acre. Six men can thin twenty acres a day. Two hoeings cost about \$3 per acre. This makes a total cost of about \$35 per acre for raising them. Good beets should run 18 to 20 per cent sugar. Last year 20 per cent beets paid \$6, while 15 per cent beets paid \$4.50.

This year the American Sugar Co. has already announced a \$2 advance per ton on account of higher prices of sugar, and the cost of labor involved in growing the beets. Mexican labor has been used here in the past mostly.

LISTING GRAIN IN DRY SOIL.

High-priced grain has caused much land in San Joaquin county to be plowed rather later than it should have been this year, with the hope of raising a summer crop instead of letting the land lie idle. Heavy north winds have dried the sandy soil out badly in the past two weeks and because of this many who are sowing sorghums are listing it in. This gets the seed down to moist soil, where it can germinate, and is probably the only way a crop could be secured on the land this year, where irrigation water is not available or where the land has never been leveled and checked.

LOCATING WATER.

To the Editor: Is there any geological explanation for the use of a willow reed in locating a well?—J. F. C., Santa Rosa.

None at all. Entirely psychological and often successful due to the underground streams which are to be found most anywhere if you go deep enough.

Solid as the turnip roots appear, they contain on an average about 89 per cent of water, or a trifle more than is found in whole milk.

CRITICS' AND CUDDLERS' CORNER

Subscribers are welcome to praise or to condemn (in letters of not over 200 words) anything which appears in the reading columns of this journal. Contributors to this department may drive and counter-attack each other as they see fit without endorsement or response on our part.—Editors.

Poultry Graft?

To the Editor: Am I not right in saying the State experiment stations are kept up by combined State and National funds and we all should have access to the benefits and we all pay the people who give the time.

I notice mention of the Storrs, Conn., world's experiment and writing them; get full and complete information.

I notice in your paper mention of the Missouri station and have frequently written. What do you suppose we get—advertisements of a personal correspondence school they have, by which we can pay quite a nice sum and get two years' correspondence course. The general manager of the station is the president of the correspondence school. I wrote several times and then got others to write, for over a year. Not a single word regarding the world's experiment, but lots of "boom" of the great correspondence school. Is this right? Is it graft? Do they take advantage of public office, for which they must draw big salaries, to get the addresses of those to use for their private gain and use the time we pay for to conduct their own business?—Wm. Starbuck, Fullerton.

A German in Paradise.

To the Editor: In your appreciated paper, the Rural Press, you hit the nail right on the head with your editorial, "Patriotism, Paternalism, etc." It is just now best to look at things in a humorous, philosophical way. My father used to say often: "Mit wie wenig verstand die welt regiert wird, wir sehen nur so oft."

[Only too often do we see with how little common sense the world is ruled.—Editor.]

We have a very rapidly progressing fruit district on this ridge. We have now installed our own water system for irrigation, covering 10,000 acres. I would like to make record of the fact in your paper.—Hermann Heinke, Paradise, Butte County.

Thinks Kaiser Has Claws.

To the Editor: Allow me to suggest to the one who wrote the article entitled "Cream for the Kaiser" in the issue of April 28, that this fair United States is no place for such an one. All such should be sent back to where their heart is, just as quick as steam can take them. Great peace lord—bah—anyone with one sense of justice knows better. Why try to cover the cruel claws with velvet under the guise of truth? I am a lover of truth—real truth—not so-called. Such a statement is next to high treason and ought to be dealt with accordingly. He ought not be left to enjoy the liberty and privileges of this grand U. S. A.—Placer County Lover of Truth and Justice.

South African Oranges Paid.

To the Editor: I always peruse your paper with much interest and profit. But I do not agree with your views published late in January as to the chances and prospects of citrus growing in South Africa. It gets something more than the "pip" as he prophesied. The growers here last year realized up to 35 shillings per case for Navels in London. If you can beat that in California, good luck to you! Herewith money order for nine shillings, which I trust will be sufficient at the present rate of exchange to pay for two years' subscription.—Richard Rusk, Transvaal, South Africa.

Professor B. A. Madson of the University of California College of Agriculture, has written a bulletin on "Grain Sorghums," which imparts all

the information necessary to successful growing of stock feed in the campaign of agricultural preparedness now being waged.

We are facing a world wide food shortage. For the sake of the hungry world as well as for the good of your bank account you ought to make every foot of your land produce its utmost. You can't possibly do this without fertilizing. Germany's crop failures for the past two years have been largely due to her inability to secure proper fertilizer materials.

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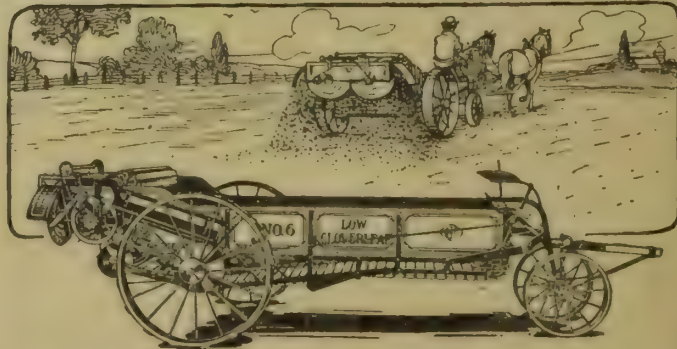
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Vegetable and Field Crops.

[Written for Pacific Rural Press.]

Gets Early Tomato Blossoms.

Chalks Early Jewel tomatoes transplanted a week ago by J. W. Davies of Glenn county are making blossoms now, due to Mr. Davies' previous treatment. They are vigorous and thrifty, while plants treated in the ordinary way are still struggling to put out new growth, having been set back in the transplanting. When the plants have four leaves they are transplanted to pots or to a box, four inches apart, and watered until they start to grow. From that time until transplanting to the field, they are never watered until they wilt. The tops do not grow much, but the roots develop splendid masses of feeders due to the struggle for moisture. Meanwhile the plants are setting buds. When the buds show, a small furrow is made in the field, water run through it, and the plants set in the mud, which is then covered with dry dirt. The plants never wilt, and it is three weeks before they need water.

Setting tomatoes in dry dirt and then soaking the ground has a very injurious effect on the plants, as observed by Mr. Davies.

Fast Tomato Planting.

On a ten-acre field in Solano county three men were planting tomatoes early in May, as fast as the horses could walk. Similar machines are used for sweet potato, cabbage and other plants. A middle-break plow is fastened between two wheels at the end of a wagon tongue. Following this is a knife between two four-foot wheels, which digs deep in the ground and is flared into two blades behind, to leave an opening for the plants. A barrel above the middle-break supplies water through a hose to this opening. One man drives, two men ride seats close to the ground so they can take the tomato plants from platforms in front of them and place them in the freshly moistened opening as the machine travels. Two curved knives follow the cutter knife to rake the dirt tight up to the plant. These tomatoes were being set about five feet apart each way and about six inches deep. They promptly wilted in the noonday sun, but recovered the first night.

Hauling Rather Than Dragging a Harrow.

Instead of dragging heavy three and four-sectioned harrows along the ground from implement shed to field or loading them on a wagon to transport them, we have found a sled very convenient this season. The one we have used is 12 feet long, 4 feet wide and about 6 inches from the ground. This accommodates three sections. When we want to load the harrow on the sled we drive the latter alongside the harrow and in this position one man can load with ease by turning each section completely over onto the sled. One man can unload it in the same way without heavy lifting.—J. C. L.

Don't Plant Beans Too Early.

Many inquiries are being made by farmers new to the bean growing business as to best time to plant.

In the upper San Joaquin Valley districts older growers generally advise late plantings for reds, pinks, kidneys, Lady Washingtons and "navies," some even planting as late as July 10 last year, with good success. May plantings are claimed to be more subject to weevil trouble and this year some of the early planted beans are already bothered with aphids. In our own planting we expect to plant about June 10, insuring moisture and a good seed bed by frequent harrowings and irrigation on those places which are already pretty dry. A neighbor advises the use of a Cyclone weed cutter for several weeks before planting, as he has found it keeps the young weeds cut down that sprout after plowing and at the same time leaves a good mulch on the surface.—

Clever Garden Irrigation.

Vegetables fresh from the ranch garden are so much better than what you buy that H. A. Bassford's son keeps up a garden about fifty feet square on their ranch in Vaca Valley, doing most of the work evenings.

The garden is fenced to keep chickens out. About every ten feet a wire is stretched across it five or six feet above ground. The garden hose is hung to one of these wires from near one end to the other by short wires bent into hooked ends to slide on the long wire and to hold the hose. On the end of the hose is a rotary sprinkler. When it has thoroughly wet the ground at the far end of the wire the hose is pulled endwise, sliding its hooks along the suspended wire, until it sprinkles a new place.

BUTTE COUNTY AGRICULTURAL EXPOSITION.

Last year's spring exposition at Chico startled some folks. For this year 50 per cent greater floor space had been sold ten days before the exposition shall have opened, May 21. Even Los Angeles promises a delegation of 150, and half a dozen county exhibits are arranged. More livestock has been entered. The tents are mostly up a week ahead of time. Livestock judges, Prof. Gordon H. True and Prof. J. I. Thompson, will place ribbons Monday, Tuesday and Wednesday afternoons out under the trees. U. S. Meat Inspector Fred Miller will give a carcass-cutting demonstration May 23 at 2:30 p. m. The Holstein-Friesian Association will meet that day in the city hall. Dr. Cady will demonstrate hog cholera vaccination. The livestock parade will occur Thursday at 10 a. m. The California Sales and Pedigree Company will auction twenty purebred Holstein bulls after the parade. On Friday will be held a consignment auction sale of all kinds of farm and pet stock under supervision of the exposition, and under the management of S. F. Williams. At 2:30 p. m. milk maids of Northern California under 20 years of age will contest for dresses, hats, etc., to the value of \$35.

About 3,500 square feet will be devoted to farm machinery, including tractor exhibits of the Yuba, Samson, Best, Bear, and Purpose machines.

Poultry has its special building and C. J. Hinds will be the judge.

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Mechanical Power on the Farm

Users of tractors, engines, pumping plants, motor trucks, automobiles, electric motors, and other mechanical farm power are invited to make this department an exchange of their experiences and troubles.

POWER-RUN PASTEURIZING PLANT AND DAIRY HOUSE.

[Written for Pacific Rural Press.]

Pasteurizing and purebred Jersey bulls enable C. R. Merrill, of the Jersey Farm Dairy in Colusa county, to sell his milk locally at 50 cents per quart per month more than his competitor. Mr. Merrill has three full strings of cows, 90 to 100, sells 100 gallons of milk and perhaps a dozen gallons of cream per day in Colusa. The surplus cream is made into butter under the Merrill brand, and all of it is sold locally.

The pasteurizing plant is run by electricity. One motor runs a line shaft, which runs the separator, clarifier, pasteurizer coil, churn and bottle washer. Another runs the compressor and small centrifugal pump for the ice-making outfit, which has capacity of a ton per day. Water to wash utensils and bottles, and to run through the pasteurizer coil, is heated with steam from a six horse-power boiler in a separate room of the dairy house. Steam sterilizes milk containers, also. The crude distillate or "stove oil" used in this boiler costs about \$35 a month, according to Mr. Merrill; while electricity for the ice machinery costs \$25 to \$30 per month. The ice outfit is used to cool brine, which brings both milk and cream down to freezing point after pasteurization. It also circulates in pipes which line the wall of a small refrigerator room, where the butter and bottled milk are stored, until hauled to town. Cream to be held in cans is set into the tank where ice blocks are frozen.

One man cares for the entire plant, including the churning and packaging of 75 to 100 pounds of butter per day. For A-grade milk, such as is put out at this dairy, the raw milk must contain not over 100,000 bacteria per cubic centimeter; and this must be reduced below 10,000 by pasteurization, since the cows are not tuberculin-tested.

The reduction is accomplished by holding the milk or cream 25 minutes at 145 degrees temperature. Further increase of bacteria is prevented by cooling the milk and keeping it cold until delivered to the consumers.

ORCHARD TRACTOR SAVES MOISTURE AND DOESN'T BARK TREES.

[Written for Pacific Rural Press.]

Use of an orchard tractor permits cultivation closer to the trees, with less danger of knocking off the bark than with horses, in the estimation of H. G. Boyce, of the Winters district. Its steadiness and absence of doubletrees are the reasons. Moreover, Mr. Boyce believes he lost less moisture this spring, because with the tractor he double-disked both ways so soon after the land was fit for cultivation. Sixteen acres per day of about nine hours was disked; and about 24 acres per day were spring-toothed right afterward. The disk had to go three times per row, while the harrow covered a center in two trips.

For the 127 acres operated by Mr. Boyce, he keeps only four horses besides the 10-25 tractor; and the horses are "idle a good part of the time". They are preferred, however, for trucking in the orchard and for hauling fruit to town.

"I like the tractor for orchard work," says he, "and I think the time is coming when people can't do without one or more."

H. G. Hutchins of Terra Bella has recently purchased a Samson tractor and last week completed the installation of a Pomona deep well pump, with which he will irrigate a considerable acreage he is setting out to olives.

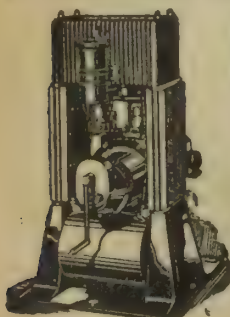
H. P. Smith of Butte County writes that he has been using a 12-25 tractor to pull four 10-inch plows in all kinds of soil, also for harrowing, leveling, checking, road grading, and pulling two five-foot Fresno scrapers.

FARM MACHINERY SCARCE—FIX UP OLD MACHINES.

[Written for Pacific Rural Press.]

Agricultural implement companies are advancing prices by the 10 per cents; and some of them are withdrawing quotations on many lines. At least one is not accepting orders for even fall delivery. Prices on raw material have advanced. The material itself is going into other channels. Labor is hard to get. It is possible that prices will fall within the next few years, but there seems no probability at all. People who wait till they need machinery are likely to get fooled in two ways—by paying more for what they get, or by not getting it at any price.

Our suggestion is that all Pacific Rural Press readers who are likely to need machinery this fall may well try at once to get reliable guarantees of immediate or fall delivery. Many country retailers still have odd machines in stock which they will sell low to avoid carrying till fall. If you can't get definite guarantees, see to it early that you get your old machinery repaired before time to use it.



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Over \$100,000,000 have been spent by electric companies in California for new plants or service extensions in the five years since they came under supervision of the State Railroad Commission, according to President Max Thelan of the Commission.

KARDELL MOTOR PLOW.

[Written for Pacific Rural Press.]

Three mold-board plows hang on a frame under the seat, which is just behind the engine, of the Kardell motor plow. This takes away the friction due to the pressure of

common plows on the bottom of the furrow as they turn the furrow slice. The plow frame is hung securely to the frame which carries the engine; so the side-thrust of the plows comes, not against the landside of the furrow where it would create great friction, but against the tractor itself. Lever adjustments and stirrup equipment hold the plows at even depth on rolling ground. The drive-wheels, one on each side of the engine, have a "webbed tread" which looks a little like the openings of a turbine wheel. This tread is good on soft ground.

The rear end of the engine frame is supported by a furrow wheel which guides the outfit.

For heavy hauling on the roads up to eight miles an hour, an extension frame on two wheels is quickly bolted to the tractor engine frame, making a three-ton truck. The belt wheel delivers 30 horse-power, while the draw-bar pull is 15 horse-power.

STAUDE MAK-A-TRACTOR.

[Written for Pacific Rural Press.]

Channel-iron rear extensions of the Ford car frame support an axle on which tractor wheels are placed. These wheels are run by pinions, which replace the rear wheels of the Ford and mesh in a gear around the insides of the tractor wheels. It is claimed that the change from touring car to tractor or vice versa can be made in twenty minutes. As a tractor, it does the work of four horses plowing, drilling, hauling, harvesting, etc. Speed as a tractor is about two and a half miles an hour with the motor at 1000 r. p. m., which is the Ford speed for twenty miles per hour. A special radiator is furnished to keep the engine cool. A force-feed oiling system is added for permanent safety of bearings.

By putting a bolster on the tractor wheels and attaching the reach of any farm wagon, the tractor is converted into a truck for road use where it runs up to five miles per hour.

STRONG PLOWS FOR DEEP TRACTOR PLOWING.

[Written for Pacific Rural Press.]

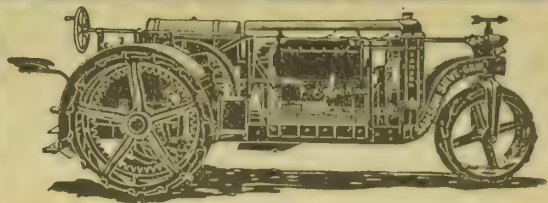
A tractor rig is as good and no better than the plows one is pulling, according to Mode Foster, owner of a 75 horse-power tractor in San Joaquin county.

Mr. Foster doesn't believe in shallow plowing for grain on adobe soil, either for summer fallow or spring-planted grain; and to secure good, deep tillage he has had specially constructed plows made.

They are four-bottomed gangs, with exceptionally heavy standards, the wooden frame being well reinforced with steel beams. The mold boards also are made for deep plowing, the curve starting about eight inches from the bottom so that they will not do good work unless sunk in deep. Lighter plows would not stand the heavy load.

Two gangs of four plows each are all that can be pulled in adobe with Mr. Foster's engine, and that makes the expense per acre greater than shallower plowing; but the additional expense is more than shared by the increase in grain secured at harvest time.

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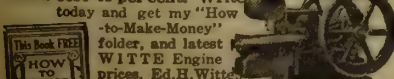
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General Agricultural Review

Field Crops.

Barley harvest commenced in the Sacramento Valley about May 7.

Glenn county is preparing land to nearly double the rice acreage over last year.

Many small parcels of land near Corning will be seeded to feterita corn this season.

The American winter wheat crop this year shows the lowest condition recorded since 1888.

Rice, beans and milo maize will be planted very heavily in the southern part of Butte county.

Ninety per cent of Canadian wheat will be sold to the allied governments or to Dominion mills.

Preliminary estimates show that Yolo county's rice crop for 1917 will be about 600,000 sacks.

The amount of paddy rice left in California in either growers' or millers' hands is insignificant.

Colusa county will raise a great grain crop this season. On the lower lands farmers expect a 125 per cent yield.

Trading in May wheat has been ordered discontinued by the Board of Directors of the Chicago Board of Trade.

According to the County Horticultural Commissioner there will be 20,000 acres of rice in Yolo county this season.

Alfalfa keeps on working for J. H. McDole of Willows while his fruit trees of all kinds are laying off on account of frost.

E. D. Marcellus of Chico last week sold 300 tons of alfalfa at \$12 a ton in the shock, which is equal to \$16 a ton in the bale.

Grain farmers north and east of Stockton recently suffered heavily from the passing of a plague of crickets over their fields.

The latest government forecast of the winter wheat crop in California this year places it at 4,870,000 bushels against an average of 7,166,000.

Quite a large acreage of tomatoes is being planted in Sonoma Valley this year. Growers are signing contracts with the Sonoma Valley Cannery at \$10.

The first car of 1917 barley arrived in Los Angeles May 3, ten days ahead of the usual opening of the season. The barley was raised in the Imperial Valley.

The hop acreage will be materially decreased in the Sacramento valley this year. Near Wheatland the Horst and Durst ranches have reduced their acreage nearly one half.

Sutter county will plant a heavy acreage to beans, milo maize and potatoes this season. Rice acreage will be reduced. Grain will make a normal yield, while hay will be short.

Deciduous Fruits and Berries.

The apricot outlook in Aromas is good.

Club girls in Arizona can the surplus fruit in shares.

"Flour goes up, berries go down," is the way berry growers put it nowadays.

Shipping of cherries began in Sonoma county last week. Early peas are looking fine.

H. A. Bassford of Vacaville had 2,500 boxes of cherries last year. He expects 5,000 this year.

The cherry crop in Alameda and Santa Clara counties promises to be larger than had been estimated.

Fourteen crates of plums from two of C. W. Carter's trees sold last year at \$1 per crate f. o. b. Los Molinos.

Pears in Sonoma Valley are good and prunes medium. Apples are a light crop, especially among the early varieties.

The first cherries of the season were shipped out of the Pajaro Valley and were grown in the Corralitos section.

Apple blossom time in the Hood River Valley, Oregon, which comes usually about May 1, will not be in full bloom this year until about May 10.

It is announced that the Central California Berry Growers' Association has obtained contracts representing 96 per cent of the nearby acreage.

Latest reports from the Yucaipa Valley say that all signs point to a heavy crop of peaches and apricots. The yield of apples, it is said, will also be large.

The peach orchard picture on our front page April 14 belongs to Fred H. Weeks of Red Bluff. Mr. Weeks had already determined to plant beans between the trees. Inter crops were suggested under the picture.

G. B. Abbott of Corning has controlled peach curled leaf perfectly for two years. This year most Elbertas in his county are full of it. Pacific Rural Press will tell how Mr. Abbott controlled curl leaf before time to spray for it.

Tehama county has the heaviest two crops of prunes we have observed in the Sacramento Valley. One belongs to the Northern California Nurseries Company and is on the Sacramento river bottom out of Corning.

The other orchard is owned by F. J. Tetrau and is also on the Sacramento river bottom near Red Bluff.

Pear blight has appeared in the Yucaipa Valley and is being vigorously fought by orchardists. Pear growers are cutting away every infected twig and the trees are being sprayed and tools disinfected after being used to prevent spread of the disease.

Citrus and Semi-Tropical.

Estimates place the Valencia orange production of the Fullerton-Placentia district at between 1,200 and 1,300 cars, a gain over last year's crop of more than 300 cars.

It is reported from the Barberton district in South Africa that after two years of drought the citrus crop this year promises to be a "bumper" one, but there is little hope of any export trade.

The Colton Fruit Exchange is in receipt of word from England that the third car of Tiger and Floral brand oranges shipped there brought \$3.30 per box f. o. b. Colton. The previous car averaged about \$3.80 per box f. o. b. Colton.

N. O. Newerl of Los Angeles has invented an adjustable cover for trees to do away with the smudge-pot. Speaking of his invention he says: "It not only affords protection from frost and heat but the cover will prevent citrus fruits from being soaked during rainstorms and enable orchardists to pick their fruit during periods of excessive rains."

The fourth semi-annual meeting and exhibit of the California Avocado Association is being held in Los Angeles, May 18 and 19. The avocado industry is growing in importance in this State. The food value of the avocado is very high. Ordinary varieties contain as high as 25 to 29 per cent of fat, and it is an easily digested fruit. One fruit of ordinary size is claimed to furnish enough food for a meal.

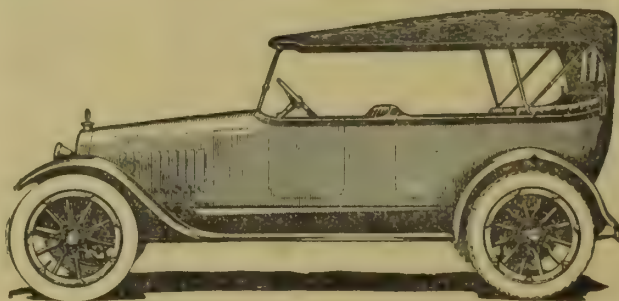
Olives to Pay Well.

The Heinz olive pickling works at Corning are contracting for Mission olives on a basis of \$175 per ton for 10-16s and up. The Maywood Company are paying \$225 for Sevillanos 16-16 size, and \$200 for smaller sizes. President Martin reports the sale of the remainder of last season's output of olive oil by the California Olive Growers' Association for \$2.25 per gallon, in cans. This association will build pickling plants at Oroville and Lindsay this summer.

Labor Exchange.

This department will print liners (not to exceed twenty words) free, one time, for farmers wishing to secure labor, and laborers wanting to get positions on farms. It is distinctly understood that the Rural Press does not undertake to vouch for or assume responsibility in any way concerning transactions which may result between employer and employee. Our desire is to bring the farmer and laborer in touch during this emergency. Copy must reach this office by Tuesday to appear in issue of Saturday following:

WANTED—Employment for self and team for months of June, July, August. J. N. Garrison, R4, Box 70, Watsonville.



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Chalmers builds for long life. Sturdiness is in every part. Severe usage and hard going only serve to prove Chalmers construction.

The Chalmers is a light weight, roomy car. Light weight insures right road performance and true economy. Long springs give easy riding qualities both on good roads and in the ruts.

Go to the nearest Chalmers dealer. See a Chalmers. Examine the car feature by feature. See the beauty of the

Chalmers lines. Note the fine body finish. The upholstery is genuine leather. The lamps are large and powerful. Point by point the Chalmers appeals to your good judgment.

Chalmers price is low for such quality. A cheap car is poor economy. A low priced, high grade, well performing car, such as the Chalmers is a genuine investment.

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Touring Car, 7-passenger	\$1475	Touring Sedan, 7-passenger	\$1850	Limousine, 7-passenger	\$2550
Touring Car, 5-passenger	1250	Roadster, 3-passenger	1250	Town Car, 7-passenger	2550
		Cabriolet, 3-passenger	- - -		\$1625

(All prices f. o. b. Detroit, and subject to change without notice)



Chalmers Motor Company
Detroit, Michigan

Present Crop Outlook in California

CALIFORNIA WILL, FROM PRESENT INDICATIONS, PRODUCE A NORMAL CROP OF FRUIT, CANTALOUPE, POTATOES, ONIONS, ETC., BUT GRAIN AND HAY WILL BE SHORT. BEANS, RICE, AND SORGHUMS WILL BE PLANTED IN LARGER ACREAGE THAN EVER BEFORE.

Agriculturally this State was never so wideawake. The writer last week completed a 2,000-mile auto ride through the San Joaquin Valley, into southern California, and up through the coast counties into the Bay section and through the Sacramento Valley as far north as Tehama; and from observation and inquiries is of the opinion that the products of the State will come very near equalling those of any previous year, in spite of a dry season and killing frosts.

Grain is very spotted, but an average crop will be harvested in most sections. In the Sacramento Valley lowlands barley and wheat never looked better—many growers are anticipating 30 and 40 sacks per acre. On the higher land on the west side of the above section grain is poor.

Hay will be short, because of drouth in spots and because every field that will make grain will not be cut for hay. Alfalfa has been growing slowly—the first crop was late and of poor quality.

Corn and forage crops promise to make up for the hay shortage. In practically every section of the State increased acreages will be planted to Indian and Egyptian corn, milo, fetterita and sudan grass. The demand for seed has exceeded the supply. Silos are being built in large numbers to help conserve feed.

The potato acreage will be somewhat increased, but the scarcity of labor and price of seed have prevented many large acreages from being planted.

Rice is to be seeded over larger area. Especially is this so in the Sacramento Valley, where the acreage will be fully 25 per cent larger than last year. Growers are now offered 2c on contract, but no one seems willing to sell at that price.

California will surely feed the world on beans next winter, if the season proves favorable. Every section will plant beans, limas, small and large whites, pinks, Lady Washingtons, teparies, blackeyes and every other variety.

Sugar beets will also command increased attention. Many localities will grow from 25 to 100 per cent more beets than last year. Shortage of labor is keenly felt in this branch of agriculture.

Cantaloupes will commence going to the market this week from the Imperial Valley. The crop from Imperial and Turlock districts, as estimated by railway men, will be a normal one and will total nearly 10,000 cars.

DECIDUOUS FRUITS.

The deciduous fruit crop will probably make nearly a normal yield. Frost damage is overcome by new acreage coming into bearing. Almonds and apricots suffered most from the cold. In the monthly report sent out this week by the State Horticultural Commission the following estimate was made of the crop at this time:

STATE AVERAGES.

Almonds, 58 per cent; apples, 93; apricots, 57; cherries, 68; figs, 94; lemons, 91; olives, 96; oranges, 94; peaches, 83; pears, 99; plums, 60; prunes, 91, and walnuts, 94 per cent.

ALMONDS.

Butte, one of the greatest producers of almonds, reports a 15 per cent crop; Contra Costa, 60; Yolo, 40; Stanislaus, 100; Sutter, 65; Sacramento, 30; Solano, 10; Los Angeles, 50; Riverside, 70; San Joaquin, 100 per cent. These counties produce 78 per cent of the entire almond crop of California.

APRICOTS.

The following counties grow 91 per cent of the apricot output, the reports varying from 35 per cent to a full crop: Alameda, 45; Fresno, 60; Kings, 60; Los Angeles, 45; Monterey, 80; Orange, 100; Riverside, 50; San Bernardino, 100; San Benito, 75; San Joaquin, 90; Santa Clara, 35; Santa Cruz, 85; Solano, 50; Ventura, 70; Yolo, 45 per cent.

PRUNES.

Santa Clara produces 55 per cent of California's prunes and reports a 100 per cent crop, while Sonoma produces 12 per cent of the total and reports a 60 per cent crop. Solano 75 and Tulare 100 per cent.

PEACHES.

Peaches show a crop ranging from 30 per cent in Butte and Alameda counties to 80 in Placer and Santa Clara, and 100% in San Joaquin.

Plums and cherries got a pretty stiff jolt from Jack Frost, showing a percentage of 60 and 68, respectively. Fig trees were also frosted, but now promise 94 per cent. Vineyards are looking fine and the little berries are in abundant evidence as a promise of a big yield.

THE LONGER YOU DELAY

The less chance you have to talk to Patterson.
Patterson makes

"SECURITY LADDERS"

(of course they cost more)

He is touring the fruit growing districts spreading ladder truths and showing orchardists how to make money by picking their fruits from "Security Ladders."



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120-inch Wheelbase

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7-Passenger—48 Horsepower
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Why Other Cars Omit These Mitchell Extras

The Mitchell offers you
31 extra features—
24 per cent added luxury—
100 per cent over-strength.

When you see these extras—
each a wanted feature—you will
ask why others don't include
them. This is to tell you the
reason.

Cost \$4,000,000

The Mitchell extras, on this
year's output, will cost us \$4-
000,000. To add them to the
ordinary car would bring the
price too high.

In the Mitchell plant, we save
them in factory cost. John W.
Bate, the great efficiency expert,
has worked for years to do that.

This entire 45-acre plant was
built and equipped by him. And
every detail is designed to build
this one type economically.

He has cut our factory cost
in two. No other plant could
build a car like the Mitchell at

anywhere near our cost. And
that saving goes into these
extras.

A Lifetime Car 100% Over-Strength

The 31 extra features—like a
power tire pump—will seem a
great attraction. The added
luxury—24 per cent—makes the
Mitchell the beauty car of its
class.

But our greatest extra is the
double strength in each impor-
tant part. In the past three
years we have doubled our mar-
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TWO SIZES

Mitchell—a roomy, 7-passenger
Six, with 127-inch wheel-
base and a highly-developed 48-horse-
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Price \$1460, f. o. b. Racine.

Mitchell Junior—a 5-passenger
Six on similar
lines, with 120-inch wheelbase and a 40-
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bore.

Price \$1195 f. o. b. Racine.

Also six styles of enclosed and convert-
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Over 440 parts are built of
toughened steel. All safety
parts are vastly oversize. We
use a wealth of Chrome-Vana-
dium steel. We use Bate can-
tilever springs, which never yet
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We have proved that Mitch-
ells can run 200,000 miles. Few
owners will live to wear a
Mitchell out.

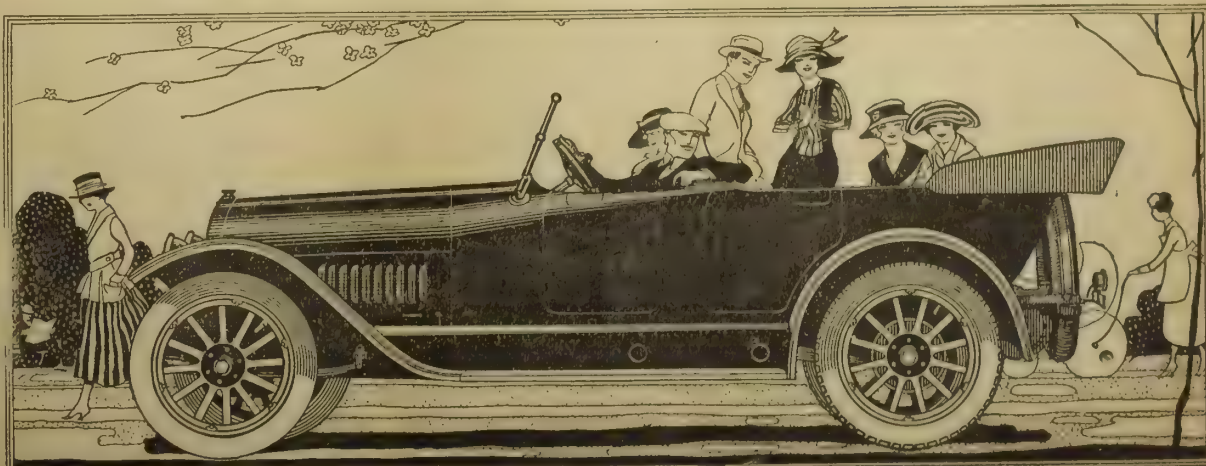
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Now there are two sizes—
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But even the smaller has a 120-
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See these new models. See
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If you don't know the nearest
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MITCHELL MOTORS COMPANY, Inc.
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Dairy Industry Must Organize

[Written for Pacific Rural Press by H. M. Ellis, Manager.]

There is no industry in California that is in as bad condition today as the dairy industry, and it is imperative that strenuous and persistent efforts be put forth to relieve the situation. The only way to accomplish this is for the dairymen to organize and work for themselves instead of for the speculator, who cares nothing for the farmer except to get all he can out of him. In spite of the high prices lately paid for butter fat, the dairyman is still losing money. Feed and all kinds of supplies are higher than ever before known, and the handlers of all these products get their price because they are organized. The average dairyman is not making any money—is not even getting the cost of production out of his product, and figures will prove this to be a fact. Prices paid for milk in California are the lowest of any State in the Union. The average price paid for milk throughout the United States is about twenty cents per gallon, but California dairymen do not get this price. The price the Eastern dairyman is receiving is much better than that the California dairyman gets, but the Eastern dairyman has only been able to get this better price by organization.

Why cannot the California dairyman accomplish the same result by the same methods? He can and he is doing so, and better results are coming, and very soon. Today there are four co-operative milk producers associations in California, all of which are working hard to better the dairyman's conditions, and to realize for him at least the cost of

production with a legitimate profit added. What is the result in any commercial line of business if the cost of production cannot be realized? The answer is, "Ruin." So with the dairyman, if he cannot get the cost of production, his answer is "Ruin" also. Why so many abandoned dairy farms over this State today? They would not be abandoned if the owners had made money. Unless the dairymen can make money they cannot stay in business, and the result will be a scarcity of the product and an increased price to the consumer.

A satisfied farming community spells prosperity for all. Prosperous agriculture builds up towns and cities, makes good business everywhere. The farmer is the backbone of the country. Make him prosperous, and the rest is easy. The Northern California Milk Producers' Association is one of the associations which is working hard to better the dairyman's condition, but to be successful it must have the loyalty and faithful support of its many hundreds of members scattered over the fourteen northern counties in which it will operate. The association belongs to its members and will be operated by them, and there will be no control by any outsider whose interests might be opposed to those of the dairymen. This association, working in conjunction with other like associations, hopes very shortly to realize a better return for its members by the betterment of conditions, elimination of waste, better marketing, and many other things.

Plans for a Sanitary Milk Room

A cheaply constructed but convenient and sanitary milk house is the one in use on the dairy of L. L. Long in Stanislaus county.

The building is 10 feet wide and 14 feet long, having a gable roof. It is located so that the door is in the end and faces the east.

The inside walls, from a height of two feet above the floor level, are covered with tongue and grooved ceiling, and the floor is of concrete, drained to the north side of the building, where is located a sink and drain board underneath a small window. Windows are also provided the other three sides of the building, screened to keep out flies.

The boiler is situated in the southwest corner of the building, pipes from which lead to the sink and to the skim milk pump that forces the skim milk from the building to the hog pens.

A recess in the south wall provides room for a galvanized iron vat into which the milk is poured from outside the building and which is connected with the separator by a pipe fitted with a strainer. The milk is also strained as it is poured into the vat. The separator, which sets on the south side of the floor near the vat, is run by electricity, a small motor being located near the ceiling on the north side of the building and connected with the separator by shafting and belts.

Between the separator and the east end of the building space was provided for a pair of scales and

a wall desk for the keeping of weights and records.

The floor of the building is four inches thick, but need not have been so thick. It was made of a mixture of one part cement to five parts gravel, while the side walls to a height of two feet were of a mixture of one part cement to four parts gravel.

GUERNSEY CATTLE RECORDS OF PRODUCTION.

To the Editor: Please print some late records of milk and butter fat produced by Guernsey cows.—R. G., Tulare.

Murne Cown is the leader, with 24,008 pounds of milk and 1098.18 pounds of butter fat in a year.

Guernsey Advanced Register Records, April 15, 1917.

Class*	Records	Lbs. Milk	Lbs. Fat	Per cent. Fat†
A.....	1708	10,228.11	502.71	4.915
B.....	337	9,738.61	485.02	4.981
C.....	454	9,293.92	466.22	5.015
D.....	471	9,078.53	456.71	5.030
E.....	589	8,391.98	423.60	5.053
F.....	725	8,074.85	403.77	5.062
G.....	1568	7,710.60	383.35	5.013

*Class A is 5 years or over. Each succeeding class is ½ year younger than the one above it.

†Notice consistent increase of fat percentage in the more recently-bred animals.

Stocks of butter in cold storage in Los Angeles May 3, 1917, were 49,885 pounds against 5,422 pounds the same date last year, an increase of 44,463 pounds. The holdings of eggs in cold storage in Los Angeles May 3, 1917, were 60,209 cases against 46,484 cases the same date last year, an increase of 13,725 cases.

Fortune Lurks in This Bull

Pride Fayne Valdessa Represents Greatest Holstein Blood.



PRIDE FAYNE VALDESSA
Born May 27, 1916.

This grand young individual, consigned by the Palo Alto Stock Farm to the sale of the California Breeders' Sales and Pedigree Company, is a handsome son of that great bred bull, Finderne Pride Fayne, out of Finderne Pride Johanna Rue 3rd, the world's record cow.

Pride Fayne Valdessa's dam, Finderne Valdessa Korndyke, one of the grandest heifers that ever lived, with a record of 19.16 as a senior yearling, is out of the former world's record cow, Valdessa Scott 2nd. The dam's sire, King Pontiac Segis Korndyke, a brother to a 40-lb. 4-year-old, a son of a 30-lb. cow and a grandson of a 37-lb. cow, is not only making good himself, but represents a wealth of large producing strains seldom found in any pedigree.

Pride Fayne Valdessa has a phenomenal pedigree. It contains three great world's record cows, as follows:

Segis Fayne Johanna, the ONLY COW to make 50 lbs. of butter in 7 days.

Finderne Pride Johanna Rue, 36 lbs. of butter in 7 days, 147 lbs. in 30 days and 36 lbs. in 11 mos. after calving. WORLD'S RECORDS.

Valdessa Scott 2nd, the FIRST cow to produce over 40 lbs. of butter in 7 days and 164 lbs. in 30 days.

We believe a great fortune lies in this young bull. His dam is sure to make a very large record—so sure are we of this we would not sell her at any price.

YOU NEED PRIDE FAYNE VALDESSA IN YOUR HERD!!!

BUY HIM AT SACRAMENTO, MAY 31.

Palo Alto Stock Farm

PALO ALTO,

CALIFORNIA

Real HOLSTEIN Quality

At Your Own Price

Our offering at the sale at Sacramento, Cal., May 31, 1917, consists of 10 highly bred females and 2 bulls.

One heifer whose first four dams average 34½ lbs. butter in 7 days, sire Spring Farm Pontiac Cornucopia, whose dam was the first 44 lb. cow, her dam a 31.70 lb. cow in our herd, who was sired by a brother to the twice 44 lb. cow Ormsby Jane Segis Aaggie.

A daughter of King Korndyke Sadie Vale, whose daughters are making such high records; her dam an own grand-daughter of Pontiac Korndyke, also De Kol 2nd Butter Boy 3d, both great transmitting sires.

A daughter of King Segis Pontiac, he being the best bred son of the great King Segis; her dam traces direct to Hengerveld De Kol and Pontiac Korndyke.

Seven other heifers equally well bred. Most of these heifers are bred to our herd sire, King Segis Alcartra Abbeckerk, whose first eight dams average 30 lbs. butter in 7 days.

The two bulls offered are both fine individuals and highly bred. One whose first six dams average 28½ lbs. butter in 7 days, sire Prince Gelsche Walker.

One a show bull whose dam has a 28 lb. 3-year-old record, with a good prospect for a much larger record; son of a 36 lb. bull.

ALL CAREFULLY SELECTED FROM OUR HERD
OF 123 HEAD.

Bridgford Company

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T. J. GILKERSON, Lemoore, Cal.

Horse Beans as a Silage Crop

[Written for Pacific Rural Press by Prof. F. W. Woll, University Farm, Davis.]

Replying to question as to horse beans as a silage crop, would say that I know of no case where horse beans have been made into silage and have no record of chemical analyses of such silage. There would be no objection to the use of this crop for the silo, however, so far as the quality of the resulting silage is concerned, except that, like other legumes, it will make a more or less rank-smelling silage that stock will not eat very readily until accustomed to it. There is also a question whether the yields secured would be sufficiently large to give it any advantage over other leguminous crops, like alfalfa, soy beans, cow peas, vetches, etc. One ton of green horse beans contains less actual food value (digestible nutrients) than either of the crops mentioned, with the possible exception of cow peas.

The important points in making horse-bean silage, like legume silage in general, are to cut the crop before maturity, to get it into the silo promptly before it is much wilted, and to pack it thoroughly in the silo, especially around the walls. It is possible that horse beans may be grown and siloed with Indian corn to advantage, as is often practiced in the case of soy beans and cow peas. But in most sections of this State, alfalfa gives larger yields and is to be preferred as a silage crop to any of the crops mentioned, and alfalfa is mainly recommended for the silo in the case it cannot be made into a good quality of hay, like the first and the last cuttings, the former on account of weediness and the latter because of the difficulty that may be experienced in hay making after the rainy season has set in.

POINTERS ON BUTTER QUALITY.

Some pertinent comments on "quality butter" were made by S. L. Denning at the California Educational Butter Scoring Contest held at Fresno May 2. At this contest twenty-five cubes of butter were entered. Hans Beck, of the Danish Creamery, Fresno, received the highest score—94½ per cent. The average score was 92.5. Mr. Denning said:

"A few of the entries showed the use of some old cream and several were criticized for having a neutralizer flavor. The feed flavor was again common and in some entries very pronounced. There was a big variation in the color of the entries, with almost any shade from pure white up to a bright yellow. Probably some of the butter makers do not realize the importance of having the butter of the proper color. A butter too light or too dark must stand a severe cut when sold on the market. Several of the entries were mottled and a few contained grit. Both of these faults can be easily remedied by a little more working. A few of the entries were excessively high in salt. The cubes showed a wide variation as to size, shape and general appearance. Most of the boxes were very neat, but a few were very rough in appearance. The package often gives the judge or buyer his first impression of the product, and it is generally an index to the workmanship of the butter."

Mr. Harris, one of the judges, spoke of the irregularity of the package and said that he is cutting very severely on the market when butter appears in off-sized and poorly-made packages.

The individual dairy cow must be healthy, with clear, bright eyes, set well apart. The head is usually small, the mouth large, the neck long and muscular; the brisket is not so wide as in the beef cow. The hips are rather prominent, the thighs somewhat muscular, the legs set square with the toes pointing forward. The dairy cow must be quiet and gentle, the skin soft and velvety.

The fast milker stimulates the udder more than the slow milker, and thus gets more milk.

SPRING EXPOSITION

THIRD BUTTE COUNTY AGRICULTURAL, LIVE-STOCK AND POULTRY FAIR

Exhibit space sold 50 per cent greater than last year. More fine livestock than ever. See the stock judging, milkmaids' contest, Butte county boys' and girls' hog, dairy and beef judging contest. See the best three hogs from the feeding contest begun last March. Home garden exhibits. Poultry. Women's handiwork. Holstein Breeders' meeting. Purebred Holstein bull sale. Auction of farm livestock of all kinds.

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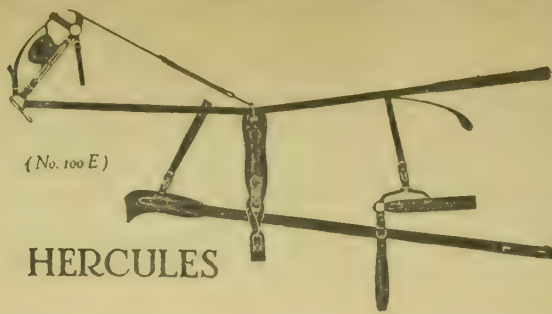
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DAIRY COWS

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Large or small lots. Any order executed.
GEO. P. ROBINSON CO.
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HERCULES BUGGY HARNESS

Made for looks and long service.

Possesses modern features; California oak-tanned leather; nickel trimmings; 1¼ inch traces; flexible saddle.

Known all over the Pacific Coast as 100-E Hercules.

None better made to sell at \$22.50 for the single set.

California oak-tanned leather lasts longest.

When a dealer offers you a Hercules Harness, Horse Collar, or Saddle, he is offering you THE BEST THERE IS

W. DAVIS & SONS

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THREE BLOCKS FROM THE FERRY

W. DAVIS & SONS, Dept. A-16
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Please send me, free, a copy of your road map.

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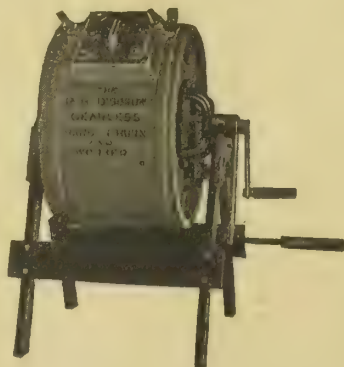
THE NEW DISBROW CHURN

FOR HAND OR POWER

Holding Capacity 35-115 Gals.

Works 10-160 lbs.

MILK AND
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Pacific Dairy Machinery Co.

56 CLAY STREET

SAN FRANCISCO

Do You Want Long Distance Backing?

We have a son of the California State Champion three-year-old for sale. Born October, 1915; Sired by PRINCE ALCARTRA KORNDYKE, whose dam is TILLY ALCARTRA.

The Dam of this young bull is not a fifty-lb. cow, but she has to her credit 21,208 lbs. milk and 800 lbs. butter in one year, which is the largest record ever made in California by a Junior three-year-old.

If you are in the market for a bull, it will pay you to visit our ranch and see what we have to offer—at prices that will surprise you.

J. S. GIBSON CO., Box 97, Williams, Cal.

"THE NAME GIBSON INSURES QUALITY."

Hauser's Digester Tankage

GIVES GREATEST VALUE FOR LEAST MONEY.

IT MAKES THEM FAT.

Hauser Packing Co.

Los Angeles

Live Stock and Dairy Notes

Livestock breeders all over the State are invited to send on postal cards, notes regarding their sales, State and County Fair intentions, new stock, etc.

The Dairy.

B. M. Brown of Corning on the Whitmore place is gradually working into purebred Jerseys.

The Grace Bros. are erecting an up-to-date dairy barn and two silos on their ranch near Sonoma.

Tulare county dairies are in good shape now, according to County Dairy Inspector C. A. Peairs.

J. Risse of Los Molinos proposes to sell some of his purebred Jersey cows. It is the labor problem again.

The demand for milkers is so great in the Gonzales section that many of the dairies are running short handed.

The thirty-second annual meeting of the Holstein-Friesian Association of America will be held on the first Wednesday in June, 1917, at Worcester, Mass.

J. B. Kroetch of Willows is furnishing land and feed while his tenant furnishes cows and labor to care for them and cut the feed. They share equally in the proceeds.

Manuel Veter of Los Molinos, whose bulls for the past five years have come from the Vina ranch, proposes to sell 30 of his cows on account of the labor problem.

R. F. Guerin, Visalia, reports sale of three young Holstein bulls to L. E. Robertson, Tulare; John C. Jacques, Visalia, and Pitt Miller, Gustine.

Starlight's Contrast 33439, A. R. 2521, has just completed a record of 17,701.9 pounds of milk and 811.11 pounds of butterfat, making her Minnesota champion Guernsey cow of all ages.

O. J. Ames, Oakdale, reports the following sales of Jersey bulls to Louis Skadsheim, Winton; J. M. Aitchison, Winton; R. A. Smith, Oakdale; Mrs. S. W. Taylor, Loomis; E. O. Bleckschmidt, Patterson; and Harry Knoll, Valley Center.

The Western Meat Company of San Francisco, which during the past few years has built up a creamery business in connection with its meat packing interests, is about to enter the creamery field in the San Joaquin Valley.

Dairymen of Fresno claim that with hay costing from \$14 to \$16 a ton and mill stuffs at the highest figure in history, the sale of milk at the same price as before the war, has taken all of the profit from the milk industry.

Will. Vista 4th, an Ayrshire cow owned by Steybrae Farm, San Mateo, completed on April 30th 240 days of her yearly test with a production of 13,310 pounds milk. Only 134 pounds less than the production for 251 days

of Agnes Wallace of Maple Grove, the Jr. Champion Ayrshire.

Alameda county milk distributors and milk producers have decided to raise the retail price of milk one cent on the current measures. Pints and quarts will seek 7 and 11-cent levels beginning June 1. Producers advanced the price of milk in wholesale measures 3½ to 4½ cents a gallon.

W. M. Colbert & Son of Corning propose to sell their grade Jerseys to make room for the 13 purebred heifers bought through Mr. Louth of Orland from Kentucky last fall. They also bought the bull which headed John A. Lee's herd in Kentucky until early this spring.

The Napa State Hospital recently received a shipment of Holsteins from Washington including four heifers and the grand Champion Cow at Washington State Fair bought at Davis sale; also five cows from the herd of Wm. Bishop. One of the latter is now giving 80 pounds milk testing right around 6 per cent.

In official testing in the McAlister herd, 14 of the last 17 cows that have freshened have made over 24 pounds of butter; while 12 of the 17 made over 25 pounds, which include more 25-pound three-year-olds than have ever been made in any other herd in the State in one year. Seven different cows have broken State records for seven days in the last five months.

Clementine Mable, a Guernsey of the Bella Vista herd is the oldest cow in the State contest. At 11 years and 11 months, she produced in February 1,280.8 milk, 58.40 butter fat; March 1,406.0 milk, 56.91 butterfat. Her daughter, Kitchener Clementine by Imp. Lord Kitchener, is also in the State contest as a 2-year-old. In five and a half months she has produced 6,800 pounds milk and 245 pounds butterfat.

While at the Stanford ranch, Vina, last week, we found fitters at work putting several Holstein cows and heifers in shape to exhibit at the Chico fair next week. All of the Holsteins, numbering over 300 head, are to be sold at the great dispersal sale June 3, 4, 5, which should interest every dairymen of the Coast. Make arrangements to attend this greatest of all dairy sales. A description of this herd and its history will be printed in our next issue.

Swine.

The National Duroc-Jersey Record Association will offer at the International Livestock show at Chicago, annually, a cup to the student doing the best judging work on swine.

W. S. Guilford of Orland returned recently from a trip east, where he secured a fine imported Berkshire boar. Mr. G. reports a good demand for purebred swine at the Butte City ranch.

Sheep.

A Ukiah paper says 50 cents per pound for short wool is being paid in that city.

California wool is not as good as usual this season, buyers say, on account of short feed for the sheep.

How to get coyotes every time will be told in an early issue. It is the successful experience of a big sheep grower.

About 11,000 sheep were sheared in the Panoche section this season, the owners being Miguel Yparra-guirre, Bernardo Yturriate and a sheepman from Newman.

J. R. Garnett of Willows, who last summer bought 100 purebred Shropshire bucks from the Meacham estate of Petaluma, reports that they sired the finest lot of lambs he has had in ten years.

Professor David N. Morgan, assistant to Dean Thomas F. Hunt, suggests that the large acreage in San Mateo and Santa Clara counties which are being held as potential residential places be thrown open to sheep pasture.

"The American Sheep Breeder" proposes to apply the acid test to the patriotism of American shepherds, and appeals to every shepherd for two fleeces of wool to furnish raw material for a large number of uniforms for the army.

Unless Idaho and Utah sheep men can get 60 cents a pound for their wool they cannot break even, according to R. W. Katerndahl, counsel for the stockmen who have started a campaign to keep up the price of wool.

It is said that on the foothills that hem in Mentone in the upper San Bernardino valley are a number of small herds of angora goats. That country is an ideal place for developing the goat industry, which is just getting a start.

A demonstration of market lambs, of special value to sheepmen in California, is planned as a special feature of "Farmers Week," to be conducted by the University of California at the University Farm at Davis from May 29 to June 1.

Recently H. Stanley Coffin of North Yakima, Wash., one of the largest wool growers in the country, returned from a trip through Australia and New Zealand and brought with him \$20,000 worth of sheep from those famous wool-growing countries.

The United States Government has sufficient wool to meet its present needs and there is no reason for wool growers to feel uneasy, according to a telegram received today by J. N. Burgess, director of the Oregon Wool Growers' Association from Dr. S. W. McClure, secretary of the National Wool Growers' Association.

Beef.

J. I. Cazler of Wells, Nevada, has recently secured from the Hereford Association, Cheyenne, Wyoming, 75 head of purebred heifers and calves, and from Geo. Chandler, Baker City, Oregon, three purebred Hereford bulls.

T. S. Glide, proprietor of the Hillcrest stock farm, recently sold a 2-year-old Shorthorn bull, sired by King Lancaster, to William Pierce of Suisun for \$1,000.

Miscellaneous.

Pastures in San Luis Obispo and Santa Barbara counties look fine and stock are fat.

Silos are being built in large numbers in the Sacramento valley. Many new purebred herds of dairy cattle and hogs are also being started.

A red Durham cow, owned by Roy Bauer, a rancher in the Covelo valley, gave birth recently to four healthy calves, weighing 40 pounds each. There were two heifers and two bull calves. All are doing well.

A Promising Lot of Heifers.

The Henderson Company, breeders of purebred Holstein-Friesian cattle, report good records completed recently. The heifers were fed on 10 to 15 pounds of corn silage, and 10 to 12 pounds of concentrate composed of bran, ground oats, ground barley equal parts, with 2 pounds of oil meal and 2 pounds of corn meal for a period of about six weeks before calving, finishing the last week with ration of 8 pounds of bran, 2 pounds oil meal, just before calving time. In addition they had alfalfa hay, of inferior quality. White Daisy Segts Queen made in 7 days 393.4 of milk and 17.10 of butter. Model Queen Pet Segls made 402.4 pounds of milk and 17.691 of butter. Korndyke Witkop De Kol II made 411.7 of milk and 19.64 of butter. Sunnyslope Duanna Pietertje made 405.9 of milk and 22.463 of butter. This class of heifers are all within 2 years and 4 months of age and nearly the same type of animals.

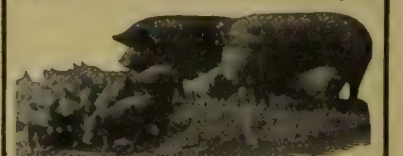
Duroc Jersey
Registered Association
of
TULARE COUNTY, CAL.

BREEDERS' DIRECTORY

	Sows in Herd	B	G
J. P. Walker, Visalia, Cal.	7	---	---
S. A. Williamson, Visalia	1	---	---
Glen Johnson, Lindsay	8	---	---
Allen Thompson, Tulare	9	---	---
Clifford Land Co., Strathmore	4	---	---
W. J. Fulgham, Visalia	6	---	---
Tagus Ranch, Tulare	20	---	---
C. E. Ellis, Tulare	2	---	---
J. L. Dickenson, Visalia	7	---	---
W. J. Higdon, Tulare	2	---	---
R. C. Sturgeon, Tulare	6	---	---

Place Your Money on the Red

HOG CHOLERA



In introducing the Dorset-Niles method of immunization as recommended by the U. S. Government, the Stockyards Serum Company of Kansas City, through their representatives, Mr. L. B. Green and Dr. E. M. Leaf, wish the hog raisers of California to know of the splendid results obtained in the Imperial Valley by such firms as Timkin Ranch Co., Lyons Bros., Russell Bros. and Stuart, Hale Ranch Co., D. Messmore, Thompson Bros. and many others. For vaccination or serum see Green & Leaf, Hog Cholera Specialists, 401 Bryson Bldg., Los Angeles, California. Phone Main 1107. (Cut this out for future reference.)

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Rydes Cream
RICHEST SUBSTITUTE



THE MILK IT SAVES SELLS FOR 3 TIMES ITS COST.

GREAT WESTERN MILLS
WESTERN DISTRIBUTORS
Dept. B, Desk 2
LOS ANGELES, CAL.

G. E. Trigg Wins Rural Press Prize In State Dairy Contest.

Our records show that G. E. Trigg of Ferndale, Humboldt county, had the five highest-producing grade cows in the State Dairy Cow Competition during the month of April and is, therefore, entitled to the Pacific Rural Press prize for last month. The average production for the month was 1,744 pounds milk, 82.372 pound fat, average per cent 4.7. The production of butterfat for the individual cows was as follows: 91.7, 82.3, 82.2, 78.6 and 77.1 pounds. These cows are all grade Jerseys. Eight other dairymen competed for the Rural Press prize during the last

month, the average production of milk and butterfat of five grades in each case being as follows:

	Lbs. Milk	Lbs. Fat
F. Stenzel, San Lorenzo	2049.4	70.991
J. W. Coppini, Ferndale	1254.0	65.654
Iver Iverson, Arcata	1451.1	61.969
K. W. Abbott, Milpitas	1659.8	60.061
Hollow-Hill Farm, Colton	1669.2	59.931
Floyd Beebe, Woodland	1471.8	59.320
F. O. & K. U. Bonnett	952.0	42.898
J. M. Christen, Pacheco	1153.7	41.316

I would ask you, therefore, to send Mr. Trigg your check for the Rural Press prize money for the month of April.

F. W. WOLL, Supt. of Dairy Testing.

REGISTERED SHORTHORNS

REGISTERED BERKSHIRES

HOPLAND STOCK FARM

Hopland, Cal.

RANGE BULLS, BOARS AND GILTS

San Francisco Office,

1210 Flood Building

A Successful Shorthorn Sale.

[The following account of the Carruthers Farms sale was put in type last week, but left out through an inadvertence in the mechanical department.—Editor.]

A fine day, good sized crowd of buyers, Scotch purebreds in fine condition, a live auctioneer, all contributed to the success of the first Shorthorn sale staged by the Carruthers Farms at Mayfield, Wednesday, May 2d. Mr. Carruthers knows stock and how to fit them and he knows how to work up a sale. He also knew how to secure a good auctioneer, as evidenced when he selected Col. Carey M. Jones of Chicago.

The total of the sale amounted to \$15,895 for 43 head, males and females. Average price paid for females was \$475. Total average \$370. Following is a list of animals and buyers' names:

White Brier and calf, T. T. Miller....	\$2,000
Magnolia, Barco Ranch.....	250
Orange Blossom Girl, Diblee Estate Co.....	350
Robkwood Ury, Diblee Estate Co.....	725
Mayflower, Diblee Estate Co.....	750
Lady Dorothea, T. T. Miller.....	550
Golden Queen, T. T. Miller.....	1,000
Young Blossom, Diblee Estate Co.....	435
Lucy Lee, Diblee Estate Co.....	400
Lucretia, C. F. Hawkins.....	375
Ruby Queen, Diblee Estate Co.....	900
Mary Fair, J. F. Dunn.....	285
Henrietta, Barco Ranch.....	220
Twinkling Star, H. L. & E. H. Murphy	225
Orange Mary, Barco Ranch.....	375
Western Lass, Miller & Lux.....	240
Mayfield Henrietta, Barco Ranch.....	205
Mayfield Magnolia, H. M. Elburg.....	235
Mayfield Victoria, Wm. Bond.....	525
Mayfield Rose, G. B. Harris.....	310
Violet Mayflower, G. B. Harris.....	310
Gloster Miss, J. F. Dunn.....	220
Lady Foxglove, H. L. & E. H. Murphy	250
Riverside Grace Fourth, T. T. Miller	300
Mayfield Lily, T. T. Miller.....	300
Fanny's Sultan, Barco Ranch.....	240
Orange President, G. L. Downey.....	210
Redemption, Wm. Clark.....	235
Creation, G. L. Downey.....	195
Golden Master, M. M. Marshall.....	305
Mayfield Knight 3rd, O'Connell Bros.	280
Hesitation, M. M. Marshall.....	125
Sultan Twinkle, Miller & Lux.....	300
Superior, M. M. Marshall.....	155
Mayfield Knight 2nd, O'Connell Bros.	280
Lord Wilson 3rd, M. M. Marshall.....	100
Dean Sultan, H. L. & E. H. Murphy	140
Mayfield Knight, Miller & Lux.....	260
Pacific Sunflower, H. L. & E. H. Murphy	140
Pacific Sultan, Diblee Estate Co.....	325
Mayfield Sultan, Diblee Estate Co.....	310
Lord Valentine, R. C. Burton.....	225
Ormondale Victory, Elder Creek Ranch.....	315

Palo Alto Stock Farm Will Offer Bull of High Pedigree.

In selecting a consignment of eight females and two males to the Holstein sale to be held by the California Breeders' Sales and Pedigree Company at the State Fair grounds, Sacramento, on May 31st, the Palo Alto Stock Farm has included Pride Valdessa 187266, a young bull bred in the richest purple of the black-and-white aristocracy. He has a pedigree that contains the world's three great record cows—Segis Fayne Johanna, the only cow to make 50 pounds of butter in 7 days; Finderne Pride Johanna Rue, 36 pounds of butter in 7 days, 147 pounds in 30 days and 36 pounds 11 months after calving; and Valdessa Scott II, the first cow to produce over 40 pounds of butter in 7 days and 164 pounds in 30 days. Pride Fayne Valdessa is a handsome son of Finderne Pride Fayne, out of Finderne Pride Johanna Rue III. His dam, Finderne Valdessa Korndyke, with a record of 19.16 as a senior yearling, is out of the former world's record cow, Valdessa Scott II.

LIVESTOCK DIRECTORY.

Rates in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

SWINE.

Poland-Chinas.

MAKE BIG MONEY with our famous Whitten Ranch Big Type Poland-Chinas. Prolific breeders and profitable feeders. Grow rapidly, fatten quickly. Top the market at 225 lbs. in six months. Make greatest profit for feed consumed. Prices reasonable; satisfaction guaranteed. Send for free illustrated book, "Hogs for Profit." Finest ever issued. Packed with valuable information; tells how to become successful. Ranch in Tulare County, but address owner, R. H. Whitten, 610A Security Building, Los Angeles.

LARGE NUMBER of excellent young boars ready for immediate service. Weanlings of either sex. Sired by Joker, first prize boar at Wisconsin State Fair, 1915. Sows and gilts, sired by Iowa Wonder and bred to Joker and Sunnydale's Chief. For prices and further information write Geo. A. Smith, Corcoran, Cal.

BOARS of serviceable age all sold. We have a few choice gilts bred to John Henry; an exceedingly choice boar. Also have a fine lot of Fall pigs, either sex. Bar N Ranch, E. A. Noyes & Son, Props., Sutter, Calif.

REGISTERED POLAND-CHINAS—Young boars ready for service. Weanling pigs, both sexes. Prices attractive for quick sales. J. H. Cook, Paradise, Cal.

CRAWSHAW'S CALIFORNIA CHINAS are prolific and profitable. Can fill your order for weanlings, either sex, for \$15.00 each. J. A. Crawshaw, Hanford, Cal.

LAKEVIEW STOCK FARM POLAND-CHINAS are money-makers. Satisfaction or money refunded. Geo. V. Beckman & Sons, Lodi, Cal.

NOW BOOKING ORDERS for Spring pigs, either sex, from my prize-winning, large type Poland China hogs. H. I. Marsh, Modesto, Cal.

POLAND-CHINAS—Big type combined with quality. Choice bred sows, gilts, boars. W. D. Trehwhitt, Box 82A, Hanford, Cal.

REGISTERED POLAND-CHINA SWINE—Prize-winners. Finest stock in the State. \$20 up. M. Bassett, Hanford, Cal.

POLAND-CHINA HOGS—Large type. 200 lbs. in 6 months. I guarantee to please you. O. L. Linn, Linview, Modesto, Cal.

BIG-TYPE POLAND-CHINAS—Stock from the best herds of the Middle West. N. Hauck, Alton, Humboldt Co., Cal.

REGISTERED POLAND-CHINAS and Duroc Jerseys. Cholera immune for life. T. H. Beckman, Lodi, Cal.

POLAND-CHINAS—Three extra fine boars, one large and two medium type. W. Bernstein, Hanford, Cal.

POLAND-CHINAS—Large type. The Browning Stock Farm. W. H. Browning, Woodland, Cal.

POLAND CHINAS—A few gilts left at \$15 each. Edward A. Hall, R. F. D. 1, Watsonville, Cal.

REGISTERED POLAND CHINAS—J. H. Hansborough, Route A, Modesto, Cal.

REAOAKS RANCH herd of registered Poland-Chinas. W. J. Hanna, Gilroy.

Berkshires.

GRAPEWILD FARM BERKSHIRES—World's Fair Grand Champion Grand Leader 2nd heads our herd, not only himself a champion, but the sire of Champions. At the 1916 California State Fair his daughters won first in all of the senior sow classes, including the Grand Champion Sow. At the 1916 Oregon State Fair a Grand Leader sow was Junior Champion. We are offering a number of choice boars of exceptional breeding and are also booking orders for Fall pigs. A. B. Humphrey, Escalon, San Joaquin Co., Cal.

CHOLEKA IMMUNE BERKSHIRES—A dandy 750-lb. son of Star Value, \$75; sons of above ready for service, \$35; fine September gilts, \$30; November Ames Rival boars, \$25 to \$30; three months' pigs, \$15 each. All bargains. All registered. Order now and get choice. W. H. Waugh, Riverside, Cal.

REGISTERED BERKSHIRES—Progeny of Improver B. Young stock now ready for sale. Start your herd with breed and strain of established reputation for California conditions. Geo. G. Meckfessel, Berlin, Cal.

BERKSHIRES—I have one of the best herds on the Pacific Coast, including Grand Champion Sow, Reserve Grand Champion Boar under one year, Third Aged Boar, etc. Frank A. Brush, Santa Rosa, Cal.

EFFICIENCY FIRST BERKSHIRES—Ten firsts, all championships Nevada State Fair, 1916. Laurel Champion and Grand Leader breeding; any age. Joseph Wilson, Jr., Mason, Nevada.

IMMUNIZED NORMANDY BERKSHIRES—Good type. Breeding stock, any age, for sale at all times. Cast iron guarantee. Arlington Smith, Visalia, Cal.

ROSE CREST BERKSHIRES—Rivals Champion Best blood. Open and bred gilts. Service boars. F. L. Hall, Perris, Cal.

CARRUTHERS FARMS BERKSHIRES—Cholera immune. Second annual sale August 2, 1917. Mayfield, Cal.

REGISTERED BERKSHIRES—Young stock for sale sired by a first prize son of Laurel Champion; prices right. Imperial Stock Farm, Morgan Hill, Cal.

MODEL HERD BERKSHIRES—Bred for size and quality. Weanlings and gilts. J. L. Gish, Laws, Cal.

HOPLAND STOCK FARM—Registered Berkshires. Prices on application. Hopland, Cal.

REGISTERED BERKSHIRES—Geo. M. York, Modesto, Cal.

BERKSHIRES—Fair Oaks Ranch, Willits, Cal.

Duroc-Jerseys.

FIRST PRIZE HERD—Comprising the three most noted families of the breed: Golden Model, Crimson Wonder and Colonel. Offering line bred show winners and show prospects in each family as good as can be found in United States. Also weaned pigs. Seeing is believing. It will pay you to investigate this offer. Haden Smith, Woodland.

RANCHO RUBIO DUROCS—Only a few September gilts left. One coking good Fall Boar by Orion Model, son of the last International Grand Champion. Place your orders now for weaned boar pigs. Best I ever raised. Elmer Lamb, Ceres, Cal.

DUROC-JERSEY WEANLINGS—Either sex; World's Grand Championship stock, registered, \$25 each. This is your opportunity to get started right. Rosenberg Co., Haywards, Cal.

REGISTERED DUROC-JERSEYS—Service boars from prize-winning stock are money-makers. They grow faster. New England California Corporation, Ripon, Cal.

DUROC JERSEYS—Sow and boar pigs from Registered Stock. Low prices. Delta Farm and Live Stock Co., Colton, Cal.

DUROC JERSEYS—Herd boars. E. N.'s Colonel and Tulare Boy. Sweepstakes winner at Fresno, 1915. Choice breeding stock. J. P. Walker, Visalia.

REGISTERED DUROCS of guaranteed breeding. All ages. Weaned pigs, \$10. H. E. Boudier & Son, Napa.

HEAVY BONED DUROCS—A few service boars for sale. Ormondale Co., Route 1, Redwood City, Cal.

REGISTERED DUROCS—Crimson Wonder stock. Young stock, both sexes. L. D. Collins, Denair, Cal.

REGISTERED DUROC-JERSEY SWINE—Both sexes. Big-boned type. E. F. Kendall, Hardwick.

REGISTERED DUROC-JERSEYS—S. S. Southworth, Napa.

CROLEY'S BALANCED HOG FEED—the cheapest feed to fatten hogs. Write Geo. H. Croley Co., Inc., Live Stock Supplies, 631-637 Brannan St., San Francisco.

DUROCS—Defender, Clintic B and Golden Model strain. The big type. Allen Thompson, Tulare.

WINTON DUROC-JERSEY FARM, Winton, Cal.—High-class purebred hogs, both sexes, any age.

BIG TYPE DUROCS—Quick maturing. Easy keeping. Frederick M. Johnson, Napa, Cal.

THE DEVILBISS HERD of large type Durocs. J. M. Devilbiss, Patterson, Calif.

DOS HERMANOS REGISTERED DUROCS—Duveneck & Pickersgill, Ukiah, Cal.

DUROC-JERSEY REGISTERED HOGS—River Bend Farm, St. Helena, Cal.

REGISTERED DUROCS—Either sex at all times. W. P. Harkey, Gridley, Cal.

Yorkshires.

LARGE YORKSHIRES—The ideal hog for the progressive farmer. Young stock for sale. A. L. Tubbs Co., Calistoga, Cal.

Chester Whites.

THE BILLIKEN HERD of Chester Whites—Every rancher, every fruit grower, every one who can possibly do so, should keep at least one brood sow; we must increase our meat supply. I am offering some bred gilts and sows at very reasonable prices to help this along. 1 spring gilt to farrow in May; 3 spring gilts to farrow in June; 2 young tested sows to farrow in July; 6 spring gilts to farrow in September; 18 fall gilts to farrow in October; 5 spring boars about ready for service; weaned pigs, both sexes, ready for delivery in June. Write for special price lists and circulars. C. B. Cunningham, Mills, California.

REGISTERED IMPROVED CHESTER Whites—Grizzly Bear Ranch, East Auburn, Cal.

Essex.

LITTLE BLACK ESSEX—New crop nearly ripe. A few fine youngsters left. L. W. Mill-sap, Yolo, Cal.

Hampshires.

BELLA VISTA HAMPSHIRE SWINE—from prize-winning stock. J. W. Henderson, First National, Berkeley.

Tamworths.

BEAVER LODGE TAMWORTHS—Service boars. Write for prices and pedigrees. A. G. Lane, Amsterdam, Cal.

DAIRY CATTLE.

Holsteins.

FOR SALE—From 1 to 70 extra fine, straight well-marked, light-colored, registered Holstein heifers, from 8 to 20 months old. Those old enough are being bred to a first-prize son of Prince Gelsche Walker, whose dam has a high yearly record. Some of these heifers are sired by bulls whose dams have from 35 to 37 pound records. They carry the very best blood of the breed and are good enough for any herd anywhere. Prices to fit any pocketbook. Geo. A. Smith, Corcoran, Cal.

GRANDSONS OF HENGELVELD DE KOL and out of A. R. O. cows for sale. Prices reasonable. Write for pedigrees. Many years of constructive breeding has made my herd one of the prominent ones of the San Joaquin Valley. R. F. Guerin, Visalia, Cal.

REGISTERED HOLSTEINS—Grandsons of King Segis and of world's record cow Cream-elle Vale. Will build up the production and value of your herd. Write or call and see them. F. H. Stenzel, San Lorenzo, Cal.

FOR SALE—Two registered cows, one with record 24.59. Sister to other one made 23.10 as a two-year-old. Both bred to a 30-lb. sire. Geo. Kounias, Modesto.

TULARE GUERNSEY AND HOLSTEIN Farm is offering young bulls of both breeds. Excellent breeding. Prices reasonable. W. J. Higdon, Tulare, Cal.

THE MCLOUD RIVER LUMBER CO., McCloud, Cal.—High-class thoroughbred Holstein bulls for sale. Write for prices and pedigrees.

J. H. HARLAN, WOODLAND, CAL.—Breeder of Registered Holsteins. Sold out at present. Watch for announcement on King Valdessa.

PACKWOOD FARM HOLSTEINS—Fine young bulls of serviceable age out of tested A. R. O. cows. W. F. Mitchell, Visalia.

TWO SERVICEABLE SONS of Colantha Sir Pontiac Aazgie for sale. Moorland Farm, E. W. Abbott, Milpitas, Cal.

THE HENDERSON CO.—Breeders and importers. Registered Holsteins. Sacramento Bank Bldg., Sacramento.

BREEDERS OF REGISTERED HOLSTEIN cattle and Berkshire pigs. Whittier State School, Whittier, Cal.

REGISTERED HOLSTEINS—A. W. Morris & Sons, Corp., Importers and Breeders, Woodland, Cal.

FOR SALE—Registered Holstein bull, son of Prince Gelsche Walker, D. H. Beagles, Napa, Cal.

CREAMCUP HERD—Registered Holsteins; Pontiac bull calves. M. Holdridge, Modesto, Cal.

REGISTERED HOLSTEIN BULLS, \$50 to \$150. Glorietta Stock Farm, Woodland, Cal.

BREEDERS OF REGISTERED HOLSTEIN Cattle—McAlister & Sons, Chino, Cal.

GOTSHALL & MAGRUDER—Breeders of Registered Holstein-Friesians. Ripon, Cal.

CHOICE HOLSTEIN bulls for sale. No females. Milbrae Dairy, Milbrae, Cal.

REGISTERED HOLSTEIN BULLS for sale. C. L. Morse, Route B, Modesto, Cal.

REGISTERED HOLSTEIN-FRIESIAN CATTLE—J. M. Campbell, Escalon, Cal.

REGISTERED HOLSTEIN BULLS for sale. Sunnybrook Ranch, Willits, Cal.

REGISTERED HOLSTEIN CATTLE—E. E. Freeman, Route B, Modesto, Cal.

BREEDER OF HOLSTEIN-FRIESIAN CATTLE—Dr. Ben Stetson, Napa, Cal.

A. R. O. HERD OF HOLSTEINS—Alex. Whaley, Tulare, Calif.

Jerseys.

BREEDER OF REGISTERED JERSEY Cattle—Duroc Swine. Young stock for sale. W. J. Hackett, Corcoran, Cal.

JERSEY BULLS from Register of Merit cows. C. D. Hayworth, Modesto, Cal.

N. H. LOCKE CO., LOCKEFORD, CAL., Jerseys. Bull No. 432, born Dec. 2, 1915. Sire, King's Valet; Dam, Derrien's Lassie of L. She produced 604.6 lbs. fat in 351 days at 4 years. Price, \$200. Bull No. 491, Oct. 20, 1916. King's Valet—Sunshine of L. 56.9 lbs. fat first month. Price, \$100. Records made under dairy conditions at a profit. Service bulls and bull calves with profitable production backing. Prices, \$50 and up. Poland-China boar Big Wonder, over 400 lbs. A good breeder, \$50. Chester White Swine—Boars and Gilts.

VENADERA HERD OF JERSEYS offers calves from Register of Merit Cows with official yearly records. Write for list of bulls. Guy H. Miller, Route 1, Modesto, Cal.

JERSEY BULLS—Sons of Gertie's Lad and Gertie's Son's Victor. A. A. Jenkins, Tulare, Cal.

YOUNG REGISTERED JERSEY BULL Calves at reasonable prices. O. J. Ames, Oakdale.

CHOICE REGISTERED JERSEY FEMALES—Fresh and Springers. Breeding and individuality the very best. McLouth, Orland, Cal.

REGISTERED JERSEYS—Young bulls and bull calves. T. B. Purvine, Petaluma, Cal.

Guernseys.

PACIFIC GUERNSEY HERD—Cattle selected from the best imported and Advanced Register Stock. Now offering choice bulls. C. S. Rasmussen, Lodi, Cal.

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FAIRVIEW AYRSHIRES AND DURHAMS—Bred for quality. Choice young stock. Geo. Fay, Sheridan, Nevada.

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BEEF CATTLE.

FOR IMMEDIATE SALE—15 registered Shorthorn bulls, one year to three years of age. Grand individuals in good flesh, fashionably bred from high-class sires and dams. Also two registered Percheron stallions—cheap. Apply: Wm. Bond, Mowry Station, near Newark, Cal.

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D. O. LIVELY STOCK FARM, INC., 216 Hobart Bldg., San Francisco, breeders of Hereford cattle. A few choice heifers for sale. We buy and sell livestock on commission. Farm at Mayfield, Cal.

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BREEDERS OF REGISTERED SHORTHORNS—Milk strain. Choice young stock for sale. John Lynch Ranch, Box 321, Petaluma, Cal.

REGISTERED AND UNREGISTERED—Shorthorn bulls for sale. Paicines Ranch Co., 320 Sharon Bldg., San Francisco.

INNISFAIR DAIRY SHORTHORNS—Registered young bulls for sale. Alexander & Kellogg, Suisun, Cal.

HOPLAND STOCK FARM—Registered Shorthorns. Prices on application. Hopland, Cal.

REGISTERED HEREFORDS—H. H. Gable, Diamond G Ranch, Esparto, Cal.

SIMON NEWMAN CO., Breeders of Registered Herefords. Newman, Cal.

GEORGE WATTERSON—Breeder registered Herefords. Bishop, Cal.

SHORTHORNS—Carruthers Farms, Mayfield, Cal.

SHORTHORNS—Fair Oaks Ranch, Willits, Cal.

SHEEP AND GOATS.

D. E. KELLHER, importer and breeder of Hampshire sheep, Eugene, California, offers for sale a choice lot of Hampshire Ram Lambs, sired by Walnut Hall and Butterfield; rams purchased at Salt Lake, August, 1916; lambs ready for delivery after July 15, 1917. Inspection and correspondence invited.

F. A. MECHAM ESTATE, Petaluma, Cal.—Breeders and Importers of Shropshire, Rambouillet and American Merinos, both sexes. Also Red Polled cattle. Take electric car at Petaluma or Santa Rosa for Live Oak Ranch.

KAUPKE BROS., WOODLAND, CAL.—Breeders and Importers of Hampshire sheep.

DORSETS AND ROMNEYS—Dorset ram lambs for sale. John E. Marble, Los Angeles.

BISHOP BROS., SAN RAMON, CAL.—Breeders and Importers Shropshires.

CHAS. KIMBLE—Breeder and Importer of Rambouillet. Hanford, Cal.

MISCELLANEOUS.

CROLEY'S BALANCED DAIRY FEED—the cheap milk producer; and Croley's Calf Meal—the best California calf raiser. Geo. H. Croley Co., Inc., 631-637 Brannan St., San Francisco.

BUTTE CITY RANCH—Shorthorns, Shropshires, Cholera Immune Berkshires and Ponties. Special offering of sows, pigs and bulls. Butte City Ranch, Box P, Butte City, Glenn Co., Cal.

FEED, FREE RANGE, State, Government land, any amount. Booklet free. Joseph Clark, Sacramento.

Profitable Lamb Feeding Experience

[Written for Pacific Rural Press.]

Lamb feeding for the spring markets on irrigated areas is an accomplishment of Emory Gates of Stanislaus county, who marketed 3,000 Wether lambs between October 28, 1916, and April 15, 1917, at a gross profit of about \$5.50 a head. Mr. Gates is purely a lamb feeder, securing his lambs from the owners of large range-raised flocks at a time of year when succulent wild feed is scarce and when prices are low. Last year his lambs were bought for \$5.00, the lot having been assembled from three flocks from widely separated districts and turned over to Mr. Gates at a point about eighty miles from his ranch. They were of mixed breeding, part being Merino, part Lincolns, and part Shropshires, the Lincolns having proved to be the best feeders. During the drive home they were dipped, as they had been exposed to scab, but by going slowly on little-traveled roads they gained weight on the trip.

FEED AND WATER

Ordinarily, Mr. Gates prefers to get delivery October 1 to 15, as by

that time the waste products which he utilizes are ready to be pastured. These feeds constitute a wide range of products, such as watermelons, beet tops, bean straw, vineyards, and stubble, all of them being secured cheaply after the main crop has been harvested. Last season Mr. Gates secured 160 acres of waste melon land at fifty cents an acre and bean straw at fifty cents a ton; and other feeds were bought at correspondingly low prices.

The flock was divided into three smaller lots of 1,000 head each, water being provided by a portable pump and engine and water troughs. A generous supply of salt and sulphur was furnished at all times.

The flocks were run on the rented lands till the first of January, when they were taken to the Gates home ranch, which lies along a river and which has good drainage.

HAND FEEDING

The four feed lots are situated on sandy soil near the farm buildings and equipped with feed and watering troughs, no protection from the weather being furnished. The past winter a daily ration of about one pound of cracked beans, either blackeyes or pinks, the former being preferred, one to one and a half pounds of chopped alfalfa hay, and a like amount of corn silage, was fed most of the time. Cracked corn and cottonseed meal were fed some, but proved too expensive. Some cull raisins were also fed with good results until they began to spoil and the price became prohibitive. When possible, the lambs are separated according to the way they eat, some being much better feeders than others. To the watchful shepherd, they are not hard to pick out.

MARKETING AND PRICES

Four carloads were marketed as soon as the flock was brought to the home ranch, and at regular intervals from then on the tops were cut out and marketed, usually when they weighed about 100 pounds. As the season advances heavier feeding is practiced with the intention of forcing; but at the same time care is exercised not to get them "off their feed." This is done in order that the largest possible number may be marketed at the highest price.

Some losses are experienced, Mr. Gates figuring on a three per cent loss during the season from sickness and death. He had no difficulty with dogs because of the careful watch that is maintained at all times. When dogs appear on the ranch they are shot.

Under ordinary circumstances, a cow should be bred at from 10 to 14 weeks after milk is being made.

Putting a little meal in the calf's mouth as soon as it finishes its milk, gives it a taste for grain.

Make all changes of feed by a gradual process, so as not to cause scours in the pigs.

Fat sows become lazy and fail to take the necessary exercise unless compelled to.

Protect cows from flies with a spray.

Hillcrest Stock Farm

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King Lancaster, sired by King Edward, grand champion bull State Fairs, 1909-10-11.

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Suited for either the range grower or breeder.

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DUROC-JERSEY SWINE ORMONDALE CO. REDWOOD CITY, CAL.



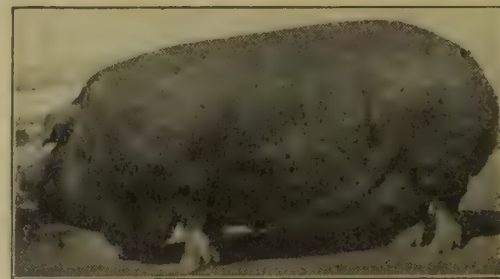
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P. P. I. E., 1915; Sacramento, 1916.

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Largest Herd in the State

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Sure to please.
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Gaited Kentucky Saddle Horses
Largest Importer in the United States.
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VETERINARY QUERIES

[Answered by Dr. H. B. Wintringham, Petaluma, Cal.]

[Subscribers wishing an immediate reply should send money order for \$1.00. No charge for questions answered through this department. Name and address of subscriber must accompany each query.]

Heifer With Urinary Trouble.

To the Editor—I have a Jersey heifer, two months old, which has some trouble with the kidneys or bladder. She jumps about, kicks, switches the tail, and finally urinates a large quantity. Her urine has become bloody, and she lies down much of the time. Her mother came down with milk fever, and a week later had mastitis. I fed the milk to the calf, but later took it away. What would you advise?—M. S. C., Dinuba.

A change of diet is indicated here. Give a gallon of whole milk three times a day and what green alfalfa she will eat. Give one tablespoonful fluid extract saw palmetto twice a day.

These Pigs Have Cholera.

To the Editor—About three weeks ago I had my sows vaccinated for cholera, and three or four days later the little pigs began to get sick and have been going from bad to worse ever since. They were sucking the sows at the time they were vaccinated. I have been feeding the pigs ground dry barley and alfalfa, but they refuse to eat. I have taken them away from the sows. They are weak and scour bad. Before I had the sows vaccinated they were all strong, healthy pigs, and the largest pigs seem to be the worse off. What can I do for them?—W. W. D., Arboga.

These pigs should receive a dose of cholera serum, as they have hog cholera.

Horse Rubs Off Tail and Mane.

To the Editor—My horse rubs his tail and mane off. What shall I do for it? I feed rolled barley and alfalfa; also a little bran. Quite a number of other horses in the neighborhood are the same.—C. G., Corona.

Have your veterinary give a hypodermic of sodium cocodylate for this trouble.

Warts on Teats.

To the Editor—Nearly all the cows which we are milking have an excessive number of warts on their teats. Some are the seed warts which grow in bunches and some are the large ones. Is this a contagious disease, or is it in their blood? All the young stock get

them shortly after freshening. What would you recommend to rid them of the warts? When would be the best time to do it?—E. N. S., Sausalito.

Seems to be contagious in certain herds. Paint with two per cent solution iodine.

Will Cows React?

To the Editor—In reference to cows placed on sale which are tuberculous, if given a double dose of toxin (or tuberculin), would it prevent a reaction within thirty days?

When cattle are bought at sales at a ten-day retest, is it safe? Or would a sixty-day retest be the best and safest guarantee to buy on?—D. L. Z., El Centro.

Yes, to your first question. If bought subject to a retest, do not test for ninety days to be sure.

Lump On the Jaw.

To the Editor—Can you give any cure for what I think is the beginning of lump jaw, other than that in "1000 Questions"? I think it originated from foxtail and is about as large as a half dollar, but seems to be fast to the jaw.—J. W. K., Highland Springs.

Paint with iodine once a day and give one dram potassium iodide in water three times a day.

Cow's Milk Bitter and Stringy.

To the Editor—I have a cow coming fresh about June 25th. She is now drying up. I grazed her along the roadside. Her milk got bitter and the cream would not come to butter. I then fed her alfalfa hay and some green alfalfa pasture, with plenty of salt, but her milk is the same and is turning thick and stringy. What is the trouble?—C. A. A., Oakdale.

This cow will come in earlier than you expect, and should be dried up immediately. The trouble is due to imminent parturition.

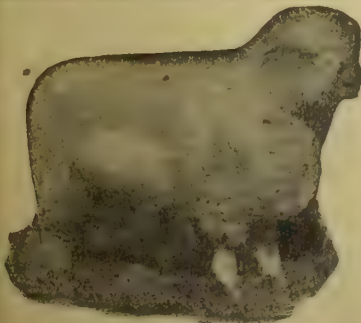
Enlarged Liver in Rabbits.

To the Editor—Are there any remedies for enlarged liver in rabbits? I have lost young ones around two months old. I feed different kinds of hay and rolled barley.—R. I., San Jose.

Give a one-tenth grain dose of calomel.

SAN RAMON SHROPSHIRE WINNINGS P. P. I. E., 1915.

Aged Ram, First and Second. Yearling Ram, First. Ram Lamb, First, Second, and Third. Champion Ram, Yearling Ewe, Second. Ewe Lamb, Second and Third. Get of Sire, First. Pen of three Lambs, bred by Exhibitor, First and Fourth. Pen of four Rams, bred by Exhibitor, First and Fourth. Flock, any age, Second. Flock, any age, bred by Exhibitor, Second. Flock, one year old, First. Flock, one year old, bred by Exhibitor, First. Flock under one year, First. Flock under one year, bred by Exhibitor, First. Produce of Ewe, First, Second and Third. Premier Championship for Breeder. Premier Championship for Exhibitor. A total including American Shropshire Specials, of 15 Firsts, 9 Seconds, and 6 Championships. Purebred Registered Rams and Ewes. Individuals or Carload Lots. BISHOP BROS., Agents. SAN RAMON. Contra Costa County, California.



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These sheep are purebred, large and smooth, with heavy fleece of fine, long, staple, white wool. Yearling rams and ewes. Individuals or carload lots. Prices reasonable. Correspondence solicited. CHAS. A. KIMBLE, HANFORD, CAL. Breeder and Importer.

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Raising Poultry for Profit

QUESTIONS ANSWERED.

[Answered by Susan Swaysgood.]

INCUBATOR HUMIDITY.

What per cent of humidity should I maintain in my incubator for chicken eggs and what for ducks?—J. W. L.

You should follow the directions sent you with the incubator. That is the safest way. I personally would not give room to a hygrometer, as I always go by the size of air cell. If too much moisture is used the air cell grows large and the chick matures too early, filling up the egg before the time; then it exhausts itself before hatching. If no instructions were furnished with the incubator, write to the Petaluma folks and tell them what model you have and ask for instructions. They will respond quickly.

THIS QUESTION A PUZZLER.

The upper bill of our ducks last year shriveled up at a few weeks of age, though they were alright when hatched. What is the cause?—J. D., Napa.

This question is a puzzler. It may have been caused by brooder heat, but honestly I do not know what could cause such a phenomenon, so cannot help you in this matter. I have seen many chicks hatched with the upper bill shorter than the lower, but in no case did the change occur after the chicks or ducks had been hatched right. Are you quite sure they were right when hatched? because incubating does some funny stunts, but nature does not often commit such grave faults after hatching.

HENS CONSTIPATED.

What is wrong with hens whose bowels move only under great difficulty? They pass a whitish substance and strain so hard that the vent protrudes quite a bit. We feed corn at night, mash mixed with warm buttermilk in the morning, and dry mash at noon, with plenty of green feed. The mash is bran two parts, middlings one part, crushed barley and oats one part, charcoal about one part.—I. D., Acampo.

Your feed appears all right. Give them about a half pint of coal oil in one gallon of the warm mash and repeat two days later; then give ten drops nux vomica in a quart of water each day for a week.

CHICKS PIP, BUT DIE.

Have set my two incubators twice this spring and can get only one-fourth hatch. I attend incubators according to directions. Chicks develop alright, and even pip the eggs, but seem too weak to get out?—Mrs. J. C. M., Brawley.

If you are using brown shelled eggs, the shells may be too hard for chicks to break out. Get a box of Egg-O-Hatch, which rots the shells. If you have white-shelled eggs, the trouble may be in feeding the hens too much moisture, or not airing the eggs enough. For further information write more details to me at Pomona.

GETTING RID OF NITS.

Some time ago a question was asked about getting rid of the nits laid by body lice on the feathers. In dusting, it is necessary to dust three or four times in order to get all of them; but I have lately found that if equal parts of good, strong

vinegar and coal oil are mixed and the feathers washed with the same, the nits will not hatch, as the action of the acid and coal oil kills them. It is necessary to keep the liquid stirred up so that you won't use all coal oil or all vinegar at one time. Coal oil alone would burn the hen to some extent, but when mixed with vinegar is quite safe to use and is a great help in ridding fowls of lice; for once the nits are killed there is no further trouble. And it is just as easy to keep chickens free of these pests as any other animals.

POULTRY FOR PROFIT.

[Written for Pacific Rural Press by Susan Swaysgood, Pomona.]

Poultry for profit—that's what we aim to teach in this paper. When you keep poultry at a loss it is because you do not pay proper attention to what is said in these columns. So if you are not making a profit on your poultry, just turn about face, look up your old files, and read what has been said. One lady recently wrote me that she hardly knew a rooster from a hen, until she began to read the Press a little more than a year ago, and that now she is having splendid results with her flock of poultry; and the Press and California Poultry Practice have been her only guides.

And perhaps here lies the secret of her success. Too many cooks "spoil the broth," and reading and listening to too many different opinions on poultry matters are just as likely to spoil the profits.

There is just one thing you can't do successfully, and that is keep changing from this to that with poultry and have good results. The hens resent any new contraptions either in yarding or feeding by withholding the eggs, unless it is done very gradually.

If you are doing well, be satisfied; if you are not, then make a change, but make it just as gradually as you can, so that the flock will not be put out or inconvenienced at all. I just tried moving five hens out of a rather small yard that I wanted to sow to green feed for baby chicks; and although the place I put the hens into was far superior in size and convenience, it bothered them, and in spite of all I could do two eggs were broken and eaten. Now that may give them a decided taste for eggs, so that they will be on the watch for any more broken eggs, for it is often this that causes egg eating.

RESETTING SETTING HENS.

[Written for Pacific Rural Press.]

Last year fifty chicks were hatched in June for Mrs. C. H. Gould of Riverside county by three hens. All were given to one hen, which raised every chick. The two other hens were reset twice afterward.

The fifty chicks were placed in a small box with the hen and fed lots of corn. The corners of the box were rounded with dirt to prevent chicks from crowding and smothering each other. After they were a few weeks old, they were

allowed to run in day-time and shut up at night in a larger box with plenty of straw in it.

This year Mrs. Gould had sixty chicks hatched before April 7 by five Rhode Island Red hens. These were given to two of the hens, and the others reset the same day. The latter were fastened into the nests with slats, and after the third day were resigned to another period of setting. In dividing the chicks the most vigorous and more than half were given to the larger hen.

PLANT SOME MANGELS.

After taking off a crop of lettuce or other green feed, plant some of the large varieties of mangels both for your own use and the chickens. Nothing gives so much in quantity of real food value as mangels. Cut in two and staked cut side up in the poultry runs, there is nothing quite so good during the fall months for the molting hens or during the early spring months before green feed comes. Now that all frost has gone 'is the time to plant. The old Gatepost is a good variety, or if you prefer an ovoid form you will get weight and size with either sort.

WHAT TO FEED.

The best way to feed is to give a variety of whatever we can get that is handy and cheap. Mind that we do not feed a ration that is too bulky without being nutritious.

If chicks and hens get plenty of exercise, they can use more rough feed than if they are confined in small houses and pens. When feeding rough coarse feed, always be liberal with the grit and sand.

POULTRY NOTES.

In setting hens at this season of year be sure to set them as near the ground as possible so that the moisture from the earth will rot the shell.

The University of California in order to give poultrymen expert instruction in the business of producing chickens and eggs will conduct a short course of poultry husbandry at Pomona June 19 to 21, inclusive.

It is said that buttermilk has proved a cure for one of the most fatal diseases of young chicks in California—coccidiosis. The announcement is made by Dr. J. R. Beach, assistant in veterinary science at the University Farm at Davis, in a bulletin which may be obtained by writing to the College of Agriculture, Berkeley.

The egg situation is a decidedly bullish one, judging from a cold-storage standpoint. The government report, April 1, 1917, showed there were held in cold storage by 293 firms 164,518 cases of eggs, against 182,706 cases held by 212 firms the same date last year. There were taken into cold storage during March by the same firms 159,238 cases this year, compared with 148,267 cases during March of last year. The holdings on March 1 of this year were only 5,280 cases, against 34,439 cases the same date last year.

Poultry Breeders' Directory

Rates in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

WHITE PLYMOUTH ROCKS—Hatching eggs from splendid layers. Mrs. J. B. Tupper, Route A, Ceres, Cal.

BARRED PLYMOUTH ROCKS—COCKERELES—Cockerels—Cockerels—Yes, we have them; also Hens and Pullets—all bred from our Champion Winners at California's leading shows. Also hatching eggs. If it's Barred Rocks you want, get in touch with me right away. Have bred them exclusively for nineteen years. Send for Catalog. Chas. H. Voden, Box 396, Los Gatos, Calif.

"FINEST HATCHERY IN THE WORLD"—Baby Chicks, White Leghorns, and Rhode Island Reds, settings, 100's, 1000's, hatched right in our \$60,000 brick and concrete hatchery from our quality heavy layers. Reasonable prices. Stock, Hatching Eggs. Pebble-side Poultry Farm and Hatchery, Sunnyvale, California.

WHITE LEGHORN BREEDING COCKERELS—10 months old, from our famous heavy laying, prize winning stock. To make room we offer our regular \$5.00 value at \$2.50 each while they last. Rancho Del Martino, Downey, Cal.

BABY CHICKS—HATCHING EGGS—White, Buff, Brown, Leghorns, R. I. Reds, Barred Rocks. Sturdy chicks from well-mated fowls. Prompt, efficient service. Write for circular. Campbell Poultry Ranch, Campbell, Cal.

HOGANIZED AND TESTED—220-egg type White Orpingtons and Buttercups. Hatching eggs, chicks and cockerels for sale. Reasonable prices. For particulars, write M. Woodhams, San Mateo, Cal.

S. C. RHODE ISLAND REDS—220-egg record in 12 months, breeding males; eggs at half price. Wm. Larm, 3915 39th ave., Fruitvale, Cal.

WHITE WYANDOTTES—Persistent layers and Blue Ribbon winners. Eggs now \$1.50 and \$3.00. Chix 20c. R. W. Stawelski, Route 2, San Jose, Cal.

EASTMAN'S BRED-TO-LAY Barred Plymouth Rocks—chicks, eggs, cockerels. We hoganize and trapnest. Fairmead Poultry Farm, Fairmead, California. Box P.

MODEL POULTRY FARM—White Leghorn specialists. Our thirteenth year. Baby Chix and Hatching Eggs for sale. W. C. Smith, Prop., Corning, Cal.

INCUBATORS—For Essex Model Incubators at factory prices, write Geo. H. Croley Co., Inc., Poultry Supplies, 631-637 Brannan St., San Francisco.

CHICKENS, DUCKS, GEESSE, GUINEAS, Pea Fowl, Pigeons, Wm. A. French, 545 W. Park St., Stockton, Cal.

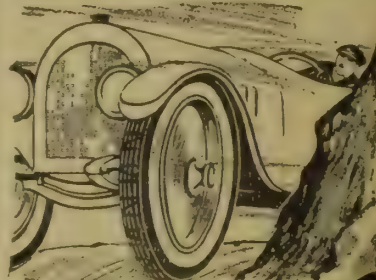
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BRONZE TURKEY EGGS—By the setting or hundred. Also fine young Toms. Albert M. Hart, Clements, Cal.

MAMMOTH BRONZE TURKEY EGGS—\$3.50 per setting. Toulouse Geese eggs, 25c each. Mrs. M. Coghlan, Walnut Creek, Cal.

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SAN FRANCISCO

Automatic Septic Disposal of Farm Sewage

[Written for Pacific Rural Press.]

Two hundred and forty-six septic tanks for sewage disposal of the type illustrated on this page have been installed on the farms of Napa county within a year, according to Napa County Farm Adviser H. J. Baade, to whose campaign, through the Farm Bureau, these results are largely due. The cost, excluding labor, has averaged \$16.50 per tank. Contractors put them in at \$30 per tank.

Mr. Baade gives credit especially to Miss Lillian D. Clark of the University of California for general design of the tanks he has advocated.

"Every farm home should have an indoor toilet, sinks, bath, and stationary washtubs," says Mr. Baade.

All sewage from the house runs into one of these tanks and, without artificial addition of chemicals or bacteria, the sewage is decomposed and emerges as a clear liquid. We know of one in Santa Clara county, built ten years ago from redwood, which has worked perfectly ever since and has never required cleaning. The typhoid-fly breeding, the odorous slimy back yards, the carrying of dish water, etc., are all eliminated by having proper plumbing in the house and a septic tank. But concrete is generally preferred on account of its permanence.

Bacteria which decompose the sewage become naturally established, and large quantities of disinfectants thrown into the sewer, might destroy them. Otherwise there is no restriction on what shall reasonably go into the septic tank.

The tank can be built entirely underground if its discharge can be built low enough in drainable soil. There is no objection to its being built above ground.

The two-compartment tank has been found most satisfactory. Not a complaint has come from the 246 in Napa county. "They work splendidly and automatically," says Mr. Baade.

Referring to the diagram, the top view shows a manhole for each compartment big enough so a small man could get in if required. If properly constructed, the most cleaning that will be required for decades to come will be to pump out a little sludge. The caps may be sealed with cement, though no odor is noticed if they are not. A floating mat of sludge forms soon after the first sewage is turned in, and so long as this mat remains unbroken odors do not escape. The side view shows how sewage comes into the first compartment without breaking the sludge mat.

A size is recommended that will hold 70 gallons per person in the fam-

ily per day. For six persons it should be 4x9x5 feet; for 12 persons, 4x10x6 feet; for 25 persons, 5x14x6 feet. This permits sewage to remain in the first compartment until the solids are all liquefied. They then pass through the two 3-inch pipes set at an angle of 45 degrees in the partition. The upper ends of these pipes are in the second compartment to exclude all air which would be fatal to the important bacteria in the first compartment. The sewage remains in the second compartment long enough to clarify, if the tank is of proper size. To exclude air from the inlet to the first compartment, the U-shaped trap is built, remaining always full of fresh sewage.

The discharge pipe opens well toward the bottom of the tank to force the latest additions to remain long enough. The distribution system, where the tank cannot discharge into a creek or arroyo, is best illustrated in the "top view showing interior construction." This is of four-inch non-glazed tile, laid with loose joints to permit the liquid to soak away into the ground, and with no short turns which might fill with dirt from outside. In fine sandy soil the joints should be covered over the upper side either with mud or other material.

The concrete is made of one part

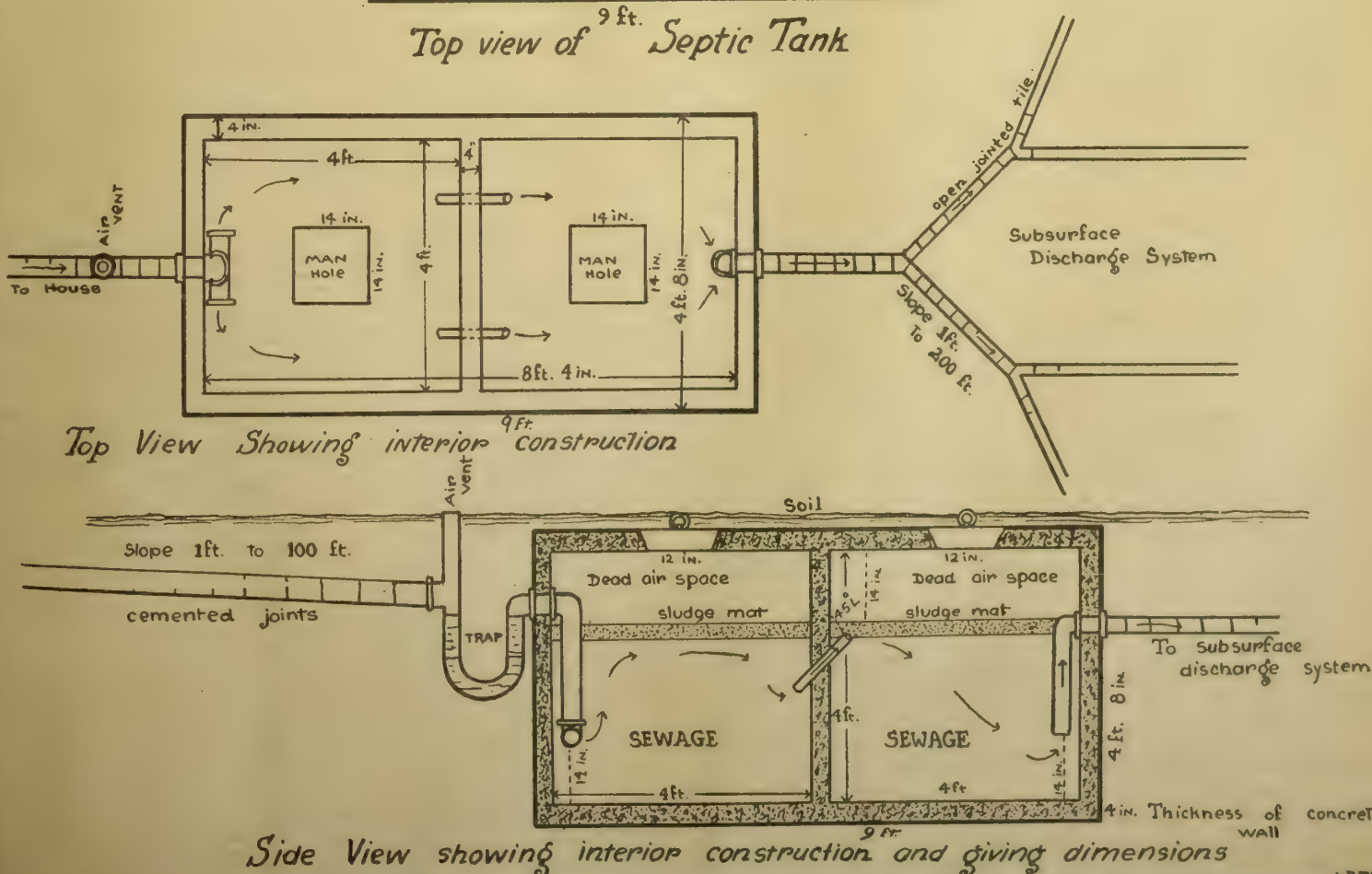
cement to five parts gravel; or cement, sand and crushed rock in the proportion of 1-2-3. Wet to a mushy consistency and spade it thoroughly as it is filled into the forms, working the spade up and down between cement and form. Old iron rods, heavy wires, woven wire, etc., can be used for reinforcement, using some extra in the top. Where rods are used, they may be spaced a foot apart in the walls. Four inches thickness is recommended, and the inside should be plastered with one part cement to three parts sand to make it surely waterproof. The pipe from house to tank should slope not less than one foot per 100 and its joints need to be carefully cemented.

The following bill of materials is enough for the twelve-person sized tank, allowing some waste: Four yards clean gravel; 18 sacks cement; one trap; two elbow joints; one cross tee; sewer pipe from house to tank and for distributing system, and the four sections of pipe needed within the tank; rings for the manhole covers; reinforcement and old lumber for forms. Four-foot dry goods boxes set in holes dug in solid ground eight inches greater dimensions may work, but for easy removal forms built and braced in place are better than the boxes.

Concrete Septic Tank

By
H. J. Baade

Top view of 9 ft. Septic Tank



Specifications for Concrete Septic Tank to permanently and automatically dispose of sewage, adding convenience, healthfulness, and attractiveness to farm homes.

Mrs. Best's Letter.

MILLINERY HINTS.

My Dear Friends—As the season advances, white seems to be the popular color for the summer hat. In straws there are Milans, Leghorns and peanut straw; and in the made hats there are crepe, braid, silk and ribbon used.

The Milan straws are wonderfully soft and come with rather wide brims and simple ribbon trimming. The Leghorns are pretty and are less tailored than the Milans, many of them being in droopy shapes or with a coquettish upward tilt at the back. These are trimmed with broad ribbon or a scarf, and are very pretty for wear with light summery dresses. The peanut straws are almost all in droopy garden shapes, as they are not strictly dressy hats, and their trimming varies according to the taste of the wearer. Many of them have a single ornament, flat on the crown, while some have a dainty pattern in crochet yarn. Still others have a narrow ribbon of color tied around the crown, bow in front and a band of braid of the same color as the ribbon around the edge of the brim. There are endless combinations, depending upon the use to be made of the hat.

In the made hats, crepe has been wonderfully popular, either the whole hat made of it with a little crochet trimming, or combined with braid. If you want to make one of these hats at home, a little braid helps cover up inexperienced stitches at the edge.

Silk hats are made in all shapes, the plain colors being in the more severe hats, while the gay silks are in sailor or droopy shapes. The greatest thing to look out for in home millinery this year is not to over trim. Everything is simple, and in almost all hats the trimming is flat. No waving plumes nor nodding flowers this year, if you want to be in style.

The ribbon hats continue to be popular, and deservedly so, for they are so soft and becoming to many people. White rather leads in popularity, although there are colors shown, of course.

The separate skirt has come into its own again this year, and is responsible for a certain fancifulness you never see in suit skirts. White, gray, navy, brown and blue combined in soft stripes and plaids are much used. These skirts are made either pleated all round or in panels, and if the material is stripes the pleats are laid so that one color comes on the top of the pleat, and the other color shows in walking. They make very striking looking skirts and are finished at the waist with a rather wide belt. Belts, forming a cross band over the pockets, pocket openings covered with color-lined ruffles, inserted pockets, demurely bound and patch pockets with large flaps and buttons, are among the new ideas for the separate skirt. ROSABELLA BEST.

HOW TO SELECT FOODS.

The following suggestions on getting the most food for one's money are from United States Department of Agriculture, Farmers' Bulletin 808, "How to Select Foods."

THE HOME CIRCLE

Use cereals (flour, meal, cereal breakfast foods, etc.) freely, taking pains to vary the kind used from day to day if necessary to keep people from tiring of them. Remember that a quart of whole milk a day for each child, to be used as a beverage and in cookery, is not too much.

Do not be ashamed to plan closely. Thrift in food means providing enough food, neither too little nor too much. Notice carefully how much of such staples as flour and sugar is used each week for a month and see if there are any ways of cutting down the quantity needed.

Buy non-perishable materials in quantities if better prices can be secured and there is a good storage place in the home. Estimate carefully how much of any material will be needed before laying in a supply, then see that none is wasted by careless handling.

"Finicky" tastes in food often prevent the use of many valuable materials which might be the means of saving money.

Good food habits are an important part of personal hygiene and thrift. Children get such habits by having suitable amounts of suitable foods served to them and then being expected to eat what is set before them.

HONEY RECIPES.

Editor Home Circle: I am sending a few honey recipes for L. L. S., Modesto. I have found that honey can be used in any recipe by remembering that honey can be used for molasses cup for cup using $\frac{1}{4}$ to $\frac{1}{2}$ teaspoon soda if no sour milk is used. Honey can be used cup for cup in place of sugar by leaving out $\frac{1}{4}$ cup of whatever liquid is used in the recipe for every cup of the honey used.

If baking powder is used it should be in addition to enough soda (usually $\frac{1}{4}$ to $\frac{1}{2}$ teaspoon for every cup) to neutralize the acid in the honey. Also watch honey closely when cooking as it burns very easily. I have made these recipes and have found them good.—E. DeV., Lodi.

HONEY CAKE.

One and $\frac{1}{2}$ cup honey, 2 tablespoons butter, $\frac{1}{2}$ cup boiling water, 1 egg, lightly beaten, 2 cups flour, 1 teaspoon soda, 1 teaspoon cinnamon. Beat the honey, butter, egg and dry soda and spice together, add the flour and water and bake in a dripping pan.

HONEY COOKIES.

Three-quarter cup honey, $\frac{1}{2}$ cup sugar, 2 cups or a little more of flour, $\frac{1}{4}$ teaspoon ginger, 1 teaspoon cinnamon, $\frac{1}{2}$ teaspoon cloves, pinch of white pepper, pinch of salt, $\frac{1}{2}$ teaspoon soda, 1 tablespoon of water, 1 cup of chopped nuts. Roll out $\frac{1}{4}$ inch thick and cut with a small cutter. Make very stiff or they will spread too much in the oven.

HONEY DROPS.

One tablespoon honey, $\frac{1}{2}$ cup boiling water, 1 cup sugar, white of egg, $\frac{1}{2}$ teaspoon almond extract, 1 heaping teaspoon butter, nuts if wanted. Boil the honey, water and sugar

until it threads. Pour on the beaten white of egg and beat until cool. Drop from a spoon on oiled paper and put $\frac{1}{2}$ nut on top of each. They should be soft and creamy if the syrup is not cooked too much. Use level measurements and a cup that holds $\frac{1}{2}$ pint.

INFANT MORTALITY.

The Children's Bureau of the United States Department of Labor have just issued a bulletin on the conservation of the life of babies. The statement is made that one in ten of all the babies born in the United States dies in its first year. It was once thought that a high infant rate indicated a greater degree of vigor in the survivors, but now it is agreed that such unfavorable conditions as cause the death of so many infants must also cripple and maim many others and react unfavorably on the health of the whole community.

RAISIN BREAD.

Dissolve half a compressed yeast cake in one-half cup warm water; scald two and a half cups milk; when cool add three tablespoonfuls sugar, one-half teaspoonful salt, shortening the size of an egg, then add the dissolved yeast and flour for a batter. Then add one pound seeded raisins, well floured, and sufficient flour to knead. Knead stiff, let rise, put into pans, let rise again and bake in a steady oven.

POTATO CAKE.

Editor Home Circle—Will some one furnish me a recipe for potato cake?—Mrs. E. M. C., Modoc county.

Beat the yolks of four eggs thick, then add one cup of sugar; continue beating. Beat the whites of four eggs to a stiff froth, then beat with the first mixture. Mix one teaspoonful baking powder with one-half cup of potato flour and sift it into the mixture. Bake it about thirty minutes in a moderate oven.

CACTUS CANDY.

Editor Home Circle. Will you tell me how to make cactus candy?—Mrs. V. W., Riverside.

Most of the cactus candy on sale is really candied cactus, instead of cactus candy. To make cactus candy, take a slab of spineless cactus and make a jelly of it. After set, cut in pieces and roll in powdered sugar or coat with chocolate.

NORFOLK OYSTERS.

Cover bottom of buttered baking dish with $\frac{1}{4}$ cup hot boiled rice, cover rice with $\frac{1}{2}$ pint oysters, pour over $\frac{1}{2}$ cup white sauce, dot with butter and sprinkle with salt and pepper; repeat, using same amount of ingredients. Cover with one cup buttered cracker crumbs and bake in a hot oven 30 minutes.

To make buttonholes in lace, place a tiny square of lawn under the lace where you want the buttonhole and work through it. After completing the buttonhole, cut away the lawn.

Floral Department.

SEASONAL SUGGESTIONS.

CHRYSANTHEMUMS.

Keep on putting in chrysanthemum cuttings till the first of July. Cuttings that were put in in early April will have made root in from three to four weeks. Do not let them remain long in the sand after rooting, or they will grow weak and spindling, and this gives them a check right at the start, and consequently you will have an inferior flower. Plant right from sand into their blooming beds and firm the soil around them; also give a good watering, and also shade for the first two or three days. After they have started growth, give abundance of water, both at the root and on the foliage. You cannot very well over-water them. If you could make an enclosure out of cheese cloth, it would be an ideal place for growing, and the flowers are almost as fine as those grown under glass.

ASTERS.

Asters are in good growth. I am using stable manure where they used shavings from the planing mill for bedding, and it rots quickly and makes an ideal mulch for them. I also use the clear shavings for a mulch for a large variety of plants, and it is the finest mulch I ever used, put on about three-quarters of an inch deep. It can be raked off in the fall and burned, as I do not think it would be of much benefit to the soil to spade it under, as the redwood would take a long time to decay. It might, however, be good for very heavy soils. I have this mulch on sweet peas, and the soil on top under the mulch is as moist after one week as though it had just been watered. It also keeps down weed growth.

PELARGONIUMS.

Pelargoniums are now in their prime. If grown in pots in the greenhouse, they should be lightly shaded and have abundance of air; also watered when the soil on top of the pot looks dry. Do not let them get wilting dry, or you will have inferior blooms. About the first of July move them outside to a shady location and gradually dry them off so the wood will ripen. A lath house is an ideal place for this. It takes a month to six weeks to do this. Never let them get so dry that they drop their foliage. Never under any consideration wet the foliage or flowers, or they will drop their petals, and if the foliage is wet while in strong growth it will in some cases kill the plant by causing it to die back.

FERNS.

Ferns in the greenhouse should now be given more air to harden the new growth, but should be sprayed at least once a day, and the walks on all absorbent surfaces wet, to give out a moist atmosphere. Outside ferneries should be watered and sprayed at least once every day, as they are now in strong growth.

FORTY VARIETIES OF FERNS

in 4-in. pots now ready, 25 cts. each, \$2.50 per dozen. Am booking orders now for choice varieties of CHRYSANTHEMUMS, commercial, show, single and pompons. Forty varieties of PELARGONIUMS in 4-inch pots will soon be in bloom, 25 cts. each, \$2.50 per doz. Also a large variety of other stock. Send for catalog.

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LOS ANGELES, CAL.

Good Health.

[By H. E. Pastor, M. D.]

Action of Seeds on the Digestive Organs.

There are very few fruits and vegetables on the market that, when taken in moderate amounts and thoroughly masticated, will not be well received by the organs of digestion if they are in a normally healthy condition. Of course the fruit or vegetable should be properly matured, and neither under-ripe nor over-ripe. However, if the mucous membrane lining the stomach and the intestinal tract is in an irritable condition from any cause—as a result usually of chronic overeating—this irritated condition may be aggravated and chronic inflammation be set up. Ulceration and even cancer may supervene if the inflammation is allowed to continue indefinitely. Long before these latter lesions are established, however, uncontrollable diarrhoea is likely to set in when hard, rough or pointed seeds of certain fruits or vegetables are ingested, or the fibrous coverings of seeds pass along over these sensitive, inflamed parts. This untoward condition is more likely to occur during the hot summer months, when foodstuffs are liable to be contaminated and when the heat renders the system less tolerant of the results of overeating.

Medical Inspection of Schools.

It is not so many years ago that the public first woke up to the expediency of securing sanitary conditions in public school buildings and grounds, and of examining pupils with a view to ascertaining the presence of physical and mental defects and to applying some form of remedy. This salutary movement has now expanded into efforts to detect in their incipency outbreaks of such contagious diseases as measles, scarlatina, diphtheria, la grippe, and others more or less peculiar to children. It behooves school boards, especially in country districts, having this in mind, to secure teachers who are qualified to recognize the symptoms of children's diseases. By taking proper precautions can they thus prevent the spread of disastrous epidemics.

PREPARE For the ANNUAL INVASION



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25¢ AT ALL
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Normal Hunger.

Hunger proper comes from Nature's demand for sufficient appropriate food to make good the losses resulting from an expenditure of the bodily forces. Where there is loss of appetite it is due to the fact that the system requires no nourishment or is not in a condition to receive and assimilate it. In such cases do not try to stimulate an artificial appetite by the use of bitter drugs or poisonous stimulants, such as strychnine or arsenic. Omit a meal or two where there is no desire for food, and give the jaded digestive organs a rest. Hot water,

sipped in small quantities, has a very cleansing, soothing and tonic effect upon the stomach.

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SAN FRANCISCO.

San Francisco, May 16, 1917.

WHEAT.

Wheat prices have shown a steady upward movement during the past week, although the advance during the latter part was not so rapid as during the first three days. This can partly be attributed to the somewhat easier spot situation in the East as the result of continued peace talk. However, local holdings are very light indeed and traders here say that prices cannot drop far. The Russian red variety was offered here this week in quotable quantities, with holders asking \$5.25 per cental.

Sonora wheat, re-cleaned.....None offered
Northern Club.....None offered
California Club, per ctl.....None offered
Northern Bluestem.....\$5.40
Northern Red.....\$5.35
Russian Red.....\$5.25

BARLEY.

Both spot and futures barley declined here during the past week, with trading in the futures end slow and spot sales quiet. While the asked figure on good feed barley dropped 15c a cental here, the big country call which was so noticeable last week was no longer a factor in this market. The necessity for feeding barley to save the lives of the herds in some sections seems to have passed.

Shipping, ctl.....Nominal
Brewing.....Nominal
Choice feed, ctl.....\$2.90

OATS.

But one variety of oats is to be had in this market in quotable amounts at the present time, and there is no very great demand for it. The asked figure is so high that only necessary purchases are made now.

White feed, per ctl.....\$2.85@2.90

BEANS.

With the exception of garbanzos, all varieties of beans were higher in the San Francisco market last week. There was no noticeable increase in the size of the call, but stocks here are getting well cleaned up, forcing prices upward. While there has been very little shipping going on, at present, anyone who has a carload on hand will find little trouble in disposing of it at good prices.

at 10%
Lays, per ctl.....\$11.50@11.75
Blackeyes.....10.25@10.50
Cranberry beans.....11.90@12.00
Horse beans.....6.50@7.00
Small Whites (south).....15.75@16.25
Large Whites.....16.00@16.50
Pinks.....11.85@12.15
Limas (south, re-cleaned).....16.25@16.50
Red Kidney.....13.00@13.50
Mexican Reds.....11.25@12.00
Tepary beans.....None offered
Garbanzos.....\$6.00@7.00

CORN.

There has been a better demand for Egyptian corn during the past week, and the quoted range on this variety narrowed to \$2.25@2.50 per cental. Most of the buyers reported that they were after the grain for seed purposes. California sacked stock remained unchanged, and there is still not enough Eastern yellow on hand to warrant quoting.

(First-hand prices on strictly first-class grain, San Francisco.)
Eastern Yellow, ctl, bulk.....Unsettled
California, sacked.....\$3.45@3.50
Milo Maize.....None offered
Egyptian.....\$4.25@4.50

HAY.

Arrivals of hay last week were confined almost entirely to California stock, with first cutting stock and alfalfa hay forming the bulk of this. Receipts were 1,135 tons, as compared with 1,204 tons for the week previous and 1,220 tons for the week before that. The presence of heavier shipments of California stock in this market has naturally slowed up buyers, and a somewhat easier market on old hay is reported. However, this has yet to take the form of lower prices to the consumer.

Wheat, No. 1.....\$33.00@35.00
No. 2.....28.00@30.00
Tame oats.....28.50@33.00
Wild oats.....24.00@29.00
Barley.....27.00@30.00
Alfalfa, new, first cut.....10.00@15.00
Stock hay, new.....10.00@13.00
Straw, per bale.....1.00@1.25

FEEDSTUFFS.

Higher prices on feed stuffs were noted during the past week, although not all offerings of this class were affected. Of the advances noted, all were for \$1 per ton, with bran, coconut cake and meal, rolled barley and rolled oats the articles affected by the change. The jump on coconut cake and meal was put into effect just today, and most of the traders here seem to expect a still further advance.

(Per ton, San Francisco.)
Beet Pulp, per ton.....None offered
Alfalfa meal, per ton.....\$34.00@35.00
Bran, per ton.....48.00@49.00
Oil Cake.....None offered
Coconut cake or meal.....\$38.00@39.00
Cracked corn.....42.00@43.00
Middlings.....58.00@60.00
Rolled barley.....62.00@63.00
Tankage.....None offered
Rolled oats.....\$62.00@63.00
Rice middlings.....None offered
Rice bran.....35.00@36.00
Shorts.....\$52.00@53.00

POTATOES, ONIONS, ETC.

With the very notable exception of asparagus, the general trend of prices in the vegetable market for the past week has been downward as the result of increased receipts in most lines. "Grass" has been in somewhat lighter arrival, and has also met with a better call from the canners. New potatoes are selling very well at present, with fancy garnets commanding as high as 6c per pound.

Asparagus, per box.....\$1.50@2.25
Peas, per sack.....1.50@2.60
String beans, per lb......6@10c
Wax beans, per lb......7@9c

THE MARKET REPORTS

Figures Given are Independent and Reliable.
Prices Quoted as Paid to Producers.

Hubbard squash, per lb.....2½@3½c
Summer squash, per crate.....90c@1.10
Lettuce, crate.....50@75c
Celery, Delta, crate.....\$1.00@1.50
Tomatoes, crate.....Not enough to quote
Rhubarb, bay, per box.....75c@1.10
do, San Jose.....\$1.15@1.35
Potatoes, ctl, Delta.....3.25@3.75
Salinas.....Cleaned up
Oregon.....\$3.70@4.00
New, per lb.....4@6c
Sweets, per lb.....None offered
Onions, green, per box.....\$1@1.25
Bermuda (seed), per ctl.....\$2.25@2.75
Garlic, lb.....1@3c

POULTRY.

The poultrymen of Sonoma county have succeeded in giving the local produce merchants something to think about. Last week very heavy receipts of small white leghorn hens from that section were noted, with the high price of feed advanced as the cause for selling these fowl. This week the price of feed again advanced, but the Sonoma poultrymen suddenly stopped sending in these hens, and prices on this offering gained a cent per pound. This was about the only change in the poultry list, with other grades barely steady under good sized offerings.

Turkeys, live, lb.....20@22c
do, dressed, large, lb.....Nominal
Broilers, 1½ to 2 lbs.....33@35c
do, under 1 lb.....23@25c
do, 1½ lbs.....26@27c
Fryers.....33@35c
Hens, extra, per lb, colored.....19@24c
Small leghorn.....15@18c
Smooth Young Roosters, per lb, (3 lbs. and over).....33@35c
Old Roosters, per lb.....12@14c
Geese, per lb.....18@20c
Squabs, per lb.....35@40c
Ducks.....18@20c
Old.....17@18c
Belgian Hares (live).....14@15c

BUTTER.

Butter quotations closed the week just two cents above the opening figures, in face of increased receipts. A sudden revival of shipping was responsible for the stiffer market, and those dealers who had been nearly ready to start storing for winter trade have again postponed. The East bought quite freely here, two houses are filling large government orders and there was again a big call from Los Angeles.

Thu. Fri. Sat. Mon. Tu. Wed.
Extras.....35½ 35 34 35 36½ 37
Prime 1sts.....34½ 34½ 33½ 34½ 35½ 36½

EGGS.

There is to be apparently no halt in the upward march of egg prices, as the various grades showed net gains of from a half to two cents per dozen the past week. Storage activities have formed a good share of current business with buying for shipment to Alaska also contributing to total trading. Storage holdings at present are 87,000 cases, or more than 14,000 cases more than were held at same time last year. As Los Angeles is reported to have some 13,000 cases more than last year, it can be estimated that California icehouses have at least 45,000 cases of eggs more than were held at the same date last year.

Thu. Fri. Sat. Mon. Tu. Wed.
Extras.....33 34 34 34 35 35½
Extra 1sts.....31½ 32 32 32½ 32½ 33

Extra pullets.....30½ 31 31 31 31½ 32
Ex. 1sts pul.....29½ 29½ 29½ 30 30 30

CHEESE.

Shipping of cheese from this market continues, with Jack cheese most desired. Fancy prices paid for this grade led a number of producers sending in inferior stock, which sold at 20@22 cents per pound. However, good stock commands as high as 27 cents.

Y. A.'s.....25c
Fancy Calif. Flats, per lb.....22c
Monterey Cheese.....24@27c

DECIDUOUS FRUITS.

Deciduous fruit offerings were increased during the past week by the receipt of Purple Guigne cherries in quotable amounts, and this variety is selling very well at 8@11 cents per pound. Packed cherries are easier under increased receipts and very few sales over \$1.25 per drawer reported. Apples unchanged.

Apples:
Redflower, box.....Not enough to quote
Newtown, fancy.....\$1.50@1.75
do, ordinary.....1.25@1.40
Cherries, per drawer.....75@1.25
Purple Guigne, per lb.....8@11c

CITRUS FRUITS.

There were no price changes in the citrus fruit list, with trade holding about steady.

Oranges:
Navels, fancy, per box.....\$2.65@2.90
do, Choice.....2.25@2.50
Tangerines.....1.75@2.00
Lemons:
Fancy, per box.....3.25@3.50
Choice.....2.75@3.00
Standard.....1.75@2.00
Lemonettes.....1.50@2.25
Grapefruit, fancy.....2.75@3.00

DRIED FRUITS.

No quotable changes on spot dried fruits were reported this week, while business in futures was too light to bring any big changes. The situation as affecting prunes is decidedly firmer, most local buyers expect advances shortly. Apricots were a shade higher with growers' contracts bringing 16½@16¾ cents.

(Net to growers, bulk basis, f. o. b. shipping point.)
Apples, new crop.....5½@6 c
Apricots, per lb.....15 @16½c
Figs, black, 1916.....Not enough to quote
do, 1917.....5½@6½c
do, white, 1917.....6 @6½c
Callamyrna, 1917.....9 @10 c
Prunes, 4-8 size basis, 1917.....5½@7 c
Prunes, 1916.....8½@9 c
Pears.....6 @7½c
Peaches, 1917.....7½@8½c

BERRIES.

Blackberries and gooseberries were added to the quotation list, and the receipts of the first loganberries and raspberries from Los Angeles foreshadow further additions to the berry list for next week. Both of the last named offering sold at \$1.50@2.00 per 15-basket crate. The California Packing Corporation has increased its price on strawberries to 4½ cents per pound, and an independent syrup making concern was paying 6 cents several days last week. A minimum price of \$4.50 per chest has been named to the trade.

Strawberries (per chest):
Southern.....\$4.00@4.25
Fresno.....4.50@5.00

Special Citrus Market Report

Los Angeles, May 15, 1917.

Shipments of citrus fruits from Southern California from November 1 to May 7: Oranges, 22,839 cars, and lemons, 3,875 cars. Same time last year: Oranges, 19,283 cars, and lemons, 3,111 cars.

Shipments from Central California from November 1 to May 7: Oranges, 4,064 cars, and lemons, 164 cars. Same time last season: Oranges, 4,807 cars, and lemons, 146 cars.

Shipments from Northern California from November 1 to May 7: Oranges, 845 cars, and lemons, none. Same time last season: Oranges 610 cars, and lemons, 1 car.

There was more life to the eastern markets the past week and all good fruit sold a little better. Locally the market was very dull. Too many cheap berries and other fruits on the market for the good of the orange trade. But while sales were slow and light, prices were held steady. Local packers paying 14¢ per pound, in the grove picked, for oranges.

Grape fruit draggy at 1½@2c per pound in the grove, picked. Lemons in good supply and sales very slow. Local packers paying ¾@1c per pound in the grove, picked, for the best.

AUCTION SALES.

New York, May 14.—Sales fifty-three cars navels; two cars seedlings, two cars mixed navels and bloods and four cars lemons. Demand for oranges very active and prices higher, particularly small sizes. Lemons active. Prices 10@15c higher. Navels averaged \$1.85@3.13. Seedlings averaged \$1.95@2.15. Bloods—halves averaged \$1.05 @1.38. Lemons averaged \$2.30@2.92.

Boston, May 8.—Thirty-one cars oranges sold. Market doing better on both oranges and lemons. Navels averaged \$1.45@3.35. Lemons averaged \$1.25@3.65.

Philadelphia, May 8.—Twelve cars oranges and one car of lemons sold. Market unchanged on oranges and lemons. Navels averaged \$1.50@2.80. Lemons averaged \$2.80@3.05.

KEEP COOL—POULTRY KEEPING STILL PROFITABLE!

In our issue of May 12 a statement appeared regarding the present serious situation of California poultrymen. This item brought forth protests from parties who have been identified for many years with the poultry industry of the State. It is pointed out by these protestants that the fiscal year of poultry-keeping runs from September 1 to August 31, and that poultry farmers who have properly fed and cared for their flocks and who will continue to do so until next September will find this season to be as profitable as the average year, or even a little better.

In regard to the price of feed: It is natural that we shall have high prices, but the present prices are unreasonable, and will be reduced undoubtedly. At the same time, the prices of eggs and poultry will be about as much above those of former years as will the increased cost of feed. When the prices of grains fall and a sane market value is established, reserved stocks will be offered. On the Pacific Coast we have no more feedstuffs than we need, but with care and proper distribution there is ample to carry poultry and other livestock until next harvest.

Longworths.....6.00@7.00
Blackberries, crate.....1.50
Gooseberries, lb.....7@9c

HOPS.

Sacramento.....5½@8c
Sonoma.....7@9c
Mendocino.....7@9c

HONEY.

Prices in San Francisco:
Comb, water white.....13@15c
Amber.....8@10c
Light amber.....11@12c
Fancy white, extracted.....10c
Light amber, do.....8c

LOS ANGELES.

Los Angeles, May 15, 1917.

BUTTER.

Receipts of week ending May 15.....316,790
Receipts of same week last year.....330,330
A steady and fair consumptive demand was had the past week. Receipts were somewhat better than the week before and much the same as last year. Market, however, held steady at 34c for extras. There was no speculative buying on change, however, and an increase in the cold storage stocks for the week of 26,633 pounds show that the trade failed to take all of the receipts. There are now in cold storage here 59,850 pounds more butter than this time last year. The government's report of stocks in cold storage May 1 shows that 281 firms held 2,586,593 pounds of butter, about double last year's supply. Under this influence and a better production in the Central West and East, extra creamery butter went off 1c in Chicago up to Monday, closing at 37c, and New York lost 2c, closing at 38c for extras. Tuesday the market here was bid up 1c on call, but there was no trading. This was as far as buyers cared to go, while holders in the face of the sharp advance north refused to sell.

We quote:
Extra creamery.....35c
Prime first.....34c
First.....33c

Daily quotations:
1917— Wed. Th. Fri. Sat. Mon. Tu.
Extra.....34 34 35 34 34 34
1916—
Extra.....26 26 26 25 25

EGGS.

Receipts (railroads) for week ending May 15, 1917, 3,415 cases.
Receipts (railroads) for week ending May 15, 1916, 3,702 cases.

There was more life and a stronger tone to this market the past week. Receipts continue to run lighter than a year ago. This, with the government's report of May 1 showing that the holdings in cold storage of 350 firms were nearly 600,000 cases lighter than the same date last year, and the continued selling off of many hens by local poultry people gave more confidence in the future market and caused some buying to go into cold storage even at the high prices, which were 10c above last year's figures at this time. The consumptive demand, however, was not heavy, prices being too high for a free consumption of eggs.

Daily quotations:
1917— Wed. Thu. Fri. Sat. Mon. Tu.
Extra.....32 32 32 33 33 33
Case count.....31 31 31 31 31 31
Pullets.....28 28½ 28½ 29 29 29
1916—
Case count.....21 21 21 21 20 21

POULTRY.

A slow and weak market was had the past week. Broilers are coming in quite freely and the market for them is weak at last week's decline. Fryers are less active and have declined 1c. Light hens are also draggy and weak, a good many coming in. Heavy hens hold their own, and sell very well. More ducks coming in and are dull and lower. Turkeys steady but slow sale. Roasters in fair demand.

We quote from growers:
Broilers, 1½ to 2 lbs.....29@21c
Fryers, 2½ to 3 lbs.....21
Hens over 4 lbs.....18@19c
Hens under 4 lbs.....14@15c
Ducks.....15@16c
Geese.....15c
Roosters, 3 lbs. up (soft bones).....26c
Turkeys, heavy, 12 lbs. and up.....29@30c
Turkeys, light.....24@25c
Squabs, live, per doz.....\$1.50@3.00
Dressed.....3.75@4.85

BERRIES.

Market was well supplied the past week and prices worked lower both on blackberries and raspberries that are coming in more freely. Strawberries also weak, but best of them sold much the same as last week. Offerings were not only liberal but quality generally good. Demand fairly active at the prices.

We quote from growers:
Strawberries, poor to choice, 30-basket crate.....90@95c
do Fancy, 30-basket crate.....\$1.10@1.15
Blackberries, per 30-basket crate.....\$2.50@2.75
Raspberries, per 30-basket crate.....2.50@2.75

NEW VEGETABLES.

Summer vegetables are coming in more freely and with increased offerings prices are working lower. And with the decline the demand has improved. If cabbage and asparagus be excepted, everything is lower. Cabbage coming in less freely and under a very good shipping demand held its own. Asparagus, too, showed a falling off in receipts and was advanced a little.

Cabbage, per cwt.....\$2.00@2.25
Asparagus, per lb, local and northern.....4@5c
New potatoes, per lb.....3½@4c
Peas, per lb.....3½@4½c
New onions, silver skins and Bermuda, per crate.....\$1.40@1.50
String beans, wax, per lb.....7@8c
do, Kentucky Wonder, per lb.....8@9c
Summer squash, per 4-basket crates.....60@75c

HAY.

Market continues quiet. Crop in southern California is turning out better than expected. The receipts, while not heavy, are more than equal to the demand. A fair

Special Livestock Market Report

San Francisco, May 16, 1917.
CATTLE.—The cattle now coming on the market are mainly grass cattle, and are in very good condition. Shipments are arriving from all parts of the State. The demand is active, though there is no material change in quotations.

Grass Cattle—
Steers, No. 18% @ 9 c
No. 28% @ 8 1/2 c
Cows and Heifers7 @ 7 1/2 c
No. 26 1/2 @ 6 3/4 c
Bulls and Stags6 @ 6 1/2 c
Calves, light8 1/2 @ 8 3/4 c
Medium8 @ 8 1/2 c
Heavy6 1/2 @ 7 1/2 c
HOGS.—Hogs are arriving about as usual, excepting lightweights, which are not offered as freely.

(Rough docked 10 and 20 pounds; piggy sows, 20 to 40 pounds.)
100 to 150 lbs.12 c
150 to 300 lbs.14 1/2 @ 15 c
300 to 375 lbs.14 1/2 @ 14 3/4 c

SHEEP.—The sheep market is easy, and lambs are reaching the market in slightly better condition.

Prime Wethers11 c
Ewes10 c
Milk Lambs12 @ 12 1/2 c
Yearling Lambs12 @ 12 1/2 c

WOOL.—It has been rumored that as high as 61c has been paid for wools in the Mendocino and Humboldt country. No actual sales based on this figure have been recorded—55c being the prevailing figure. The season's clips in this district have been practically all sold out, and the little still in growers' hands is held at prices which find few or no buyers. The market, however, is strong.

Sacramento Valley, spring clip40 @ 45c
Mendocino55 @ 56c
Cloverdale40 @ 42c
San Joaquin, 8 mos.25c
San Joaquin, year's35 @ 40c
Southern, spring clip25 @ 30c
Southern, 7 mos.22 @ 23c
Imperial Valley, 7 mos.30 @ 35c
Nevada, year's35 @ 40c

Los Angeles, May 15, 1917.
CATTLE.—The market remains much the same as a week ago. The country is offering cattle quite freely and holders rather anxious to sell. But as eastern markets continue high, prices while weak, were notably unchanged. California and Arizona furnished most of the supply and there were quite a number of grass steers in and they were in very good condition, better than last year. Fed steers continue to show the influence of the high price of feed.

A good many calves were offered during the week and they were dull and weak.
Per cwt. f. o. b. Los Angeles:
Beef steers, 1000 to 1100 lbs.\$9.50 @ 10.00
Prime cows and heifers7.50 @ 8.00

shipping inquiry is being had from the country for new hay, but the city is buying sparingly. Dairy people are buying but little hay, using mostly green alfalfa. Market both slow and weak.

We quote f. o. b. Los Angeles:
Barley hay, ton\$21.00 @ 23.00
Oat hay, ton22.00 @ 24.00
Alfalfa, northern, per ton18.00 @ 19.00
Alfalfa, local, ton20.00 @ 21.00
Straw, ton11.00 @ 12.00

BEANS.
Market was very quiet the past week. There was some little buying for seed, but trade took very few beans. High prices causing the consuming trade to hold out of the market, and where holders tried to force sales they had to yield concessions. But as we are in the midst of seeding, most holders were independent.

We quote from growers:
Limas18c
Large white17c
Small white17c
Pinks13c
Blackeyes12 @ 12 1/2 c

HONEY.
Warmer weather of late and more sunshine have favored the bees and they are making more honey. Reports from the country say that some orange honey is being extracted, but no sales reported as yet. It is thought that enough honey will be made by the end of the month for the market to open, and a 10c market to the producer for orange honey is looked for, which is 2 1/2c higher than last year.

Publisher's Department.

In the advertisement of The Williams Patent Crusher and Pulverizer Co., Inc., in last week's issue, the address was given 67 First street. The correct address is 67 Second street, San Francisco.

"Regarding the special Swine Edition of the Rural Press, I enjoyed it very much and received a great deal of good from it. The paper was nicely gotten up and showed a great deal of work. It should do much good to the breeders of California."—N. Hauck, Alton.

The number of new paid subscribers added to our list during the last two weeks was 492. We confidently expect our field men to increase this number of new patrons from now on.

"Your special Swine Number was splendid and I wish to express my appreciation of same. I experienced much pleasure and profit from its perusal. It is certainly educational."—Chas. R. Hanna, Riverside.

"Productive Dairying," by R. M. Washburn, professor of animal husbandry, University of Minnesota, is a new book just published by the Lippincott Co. of Philadelphia. It contains 432 pages, 131 illustrations, is cloth bound and sells for \$1.75 net. The work covers the dairy breeds, winter feeding, clean milk production, farm

Good cows and heifers7.00 @ 7.50
Calves8.00 @ 9.00
HOGS.—While a fair demand was had the past week there was no snap to the market. A good many light half fat hogs arrived from California and Arizona and such were taken by killers at old prices. But few really fat grain fed hogs in and what arriving found ready sale and brought a good premium over light half fat hogs, that made up most of the receipts.

Per cwt. f. o. b. Los Angeles:
Heavy, averaging 250 @ 300 lbs.\$11.50 @ 12.00
Mixed, 200 @ 250 lbs.12.00 @ 13.00
Light, 175 @ 200 lbs.12.00 @ 13.00
Rough docked 20 pounds, piggy sows 40 pounds and stags 40 per cent.

SHEEP.—Market again slow. Killers taking fewer sheep and lambs than previous years. The high prices at which they are held, and killers forced to pay, making mutton and lamb so high that it is selling less freely. But while the demand was only fair, the high markets east had a sympathetic influence and enabled feeders to hold prices steady.

Per cwt. f. o. b. Los Angeles:
Prime wethers\$ 9.00 @ 10.00
Prime ewes8.50 @ 9.00
Yearlings10.50 @ 11.00
Lambs13.00 @ 14.00

North Portland, Ore., May 14, 1917.
CATTLE.—Today's cattle market was rather a slow affair, with about 1000 head in the pens, demand from packers was limited, due to heavy purchases made last week, when there was a very good demand from out of town butchers, and took quite a string at steady prices, although the bulk of today's sales were on regularly lower basis, ranging from \$10.00 to \$10.50. Medium grades of beef were the best sellers at steady prices, while prime steers sold 25c lower. Common beef that is dairy bred stuff suffered a loss of 50 cents. Several loads of prime heavy steers brought \$10.85, which was the top, with good light steers at \$10.25 to \$10.50; medium grade sold around \$9.75 to \$10.00, with common steers down to \$8.00. There were only a few cows here, the best getting \$9.25 to \$9.50, with common stuff selling down to \$5.00. Best light veal calves sold at \$10.00; a bunch of baby beef heifers brought \$10.00. The general trend of the cattle market was slow.

HOGS.—Hog prices ranged mostly 10 to 15 cents higher, the top was \$16.00 for three loads, with another load at \$15.85, the bulk of sales were made at \$16.65 to \$16.75, with a few light loads down to \$15.50. Pigs suffered a severe setback of about 75 cents, due to the heavy receipts of light hogs during the last few weeks, the bulk going at \$13.00.

SHEEP.—The sheep market is unchanged, there were only a couple loads of mixed valley sheep here.

and market dairying, and a valuable appendix of tables.

A New Book—"Home Labor Saving Devices," by Rea C. Scott; illustrated; published by J. B. Lippincott Co., Philadelphia; price \$1 net. This book is a handy volume of value to the woman, no matter what device is needed in the home, whether an iceless refrigerator, a porch swing or a shower bath. It gives detailed plans for making articles used in the kitchen, dining room, porch or miscellaneous. Also many labor saving devices to do with poultry and dairy houses.

Frank Honeywell, publisher of the Pacific Rural Press, passed through town Tuesday on his annual tour of the northern part of the State investigating crop conditions. He stopped over an hour to interview some of the leading farmers and to pay the Herald office a call. We are always glad to meet Mr. Honeywell. He is a genial gentleman and is the "live wire" of the agricultural press of California. He is publishing an excellent paper and he has brought it closer to the farmer and his family during his managership than has ever been done in the many years the Press has been published. The farmers have shown their appreciation in a practical manner, as the paper has a larger circulation at present than at any time in its career.—Livermore Herald.

Classified Advertisements

Rates in this directory, 3c per word each issue; or if carried weekly for one year, 2 1/2c per word.

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TOMATO PLANTS.—Transplanted, \$1.00 per 100. Panama Nursery Co., Concord, Cal.

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WANTED.

WANTED—Young men and women to attend the Western Normal Course—Normal and Academic. The Normal Course gives an adequate preparation for teaching, at a great saving in time and money. Academic course gives practical finish to education. Write for Bulletin "A," Western Normal, 524 E. Market St., Stockton, Cal.

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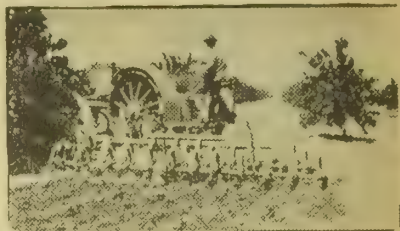
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Five Passenger Touring	\$495
Two Passenger Roadster	\$350
Four Passenger Sport Model	\$795
Big Fours	
Five Passenger Touring	\$595
Three Passenger Roadster	\$330

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Light Sixes	
Five Passenger Touring	\$1025
Three Passenger Roadster	\$1010
Willys-Knights	
Seven Passenger Four, Touring	\$1395
Seven Passenger Eight, Touring	\$1010

THE PACIFIC RURAL PRESS

SAN FRANCISCO

MAY 20, 1917.

LOS ANGELES

How I Saved My Apricot Crop This Spring

[Written for Pacific Rural Press by Ralph Thomas, Watsonville.]



THE COLD SPRING just passed has been extremely severe on deciduous fruits and especially so on the apricot. Practically speaking, there is not an apricot left in the floor of the valley in this section, excepting on one five-acre orchard. This is the orchard wherein I did my smudging.

When I first thought of using smudge-pots I consulted several growers here who had used them. Every one of these growers gave me the "oh, fudge" smile and the "forget it" shrug of the shoulder. A manufacturer of smudge-pots sent me his circular on "how to do it." I classed this manufacturer with the average one and divided his claims by two. My mental status on frost prevention at this time was very much unsettled. However, I purchased 200 two-gallon pots of the lard-pail type. These had covers and deflectors. The deflectors I never used, as it was impossible to light the pots with them in place. A friend gave me 150 smaller pots that he had used once and then thrown away with a "never again" oath. This gave me 350 pots for my 418 trees—six-year-old Tiltons. So it was that I went into the frost prevention game with a half-heart—a half-heart that cost me some of my crop.

I placed the pots in the center of the rows—each pot equidistant from each tree in a square of four. This scheme takes one pot for each tree. I did not have pots enough to carry out this scheme over the entire orchard, so in the center the pots were less numerous. An oil man advised me to use stove distillate. I put 300 gallons of it into my 350 pots at a cost of \$16.50. I then waited for King Frost.

When the first cold night came, dropping the thermometer to 27 degrees F., the trees were in the first days of blooming. I did not light the pots that night and as a consequence lost a large percentage of the early blossoms.

The next cold night came while the trees were in full bloom. I stayed up all night, thinking that I might not hear my Big Ben. At 4 a. m. the thermometer fell to 30 degrees. I got busy. Someone had told me to sprinkle a small quantity of gasoline into the pots to facilitate the lighting. This we did. Our torches, made of burlap wired onto

iron bars, were dipped in kerosene. The first night's lighting was not a complete success. A previous flood had turned over some of the pots in one section of the orchard, while rain had partly filled some of the uncovered pots. Nevertheless, with all the available pots burning, a thermometer in the center of the orchard registered 31 degrees, while one outside the orchard registered 26 degrees. I lost about half the blossoms in the section where the pots had been turned over by the flood. From this time on I began to take the work more seriously.

I observed that there was a difference of from 5 to 7 degrees between the porch where I slept and the orchard. By deducting 6 per cent from my bedside thermometer, I was saved many cold trips to the orchard. I set my alarm at 2 o'clock and could usually tell at that time whether or not it would be a dangerous morning.

The next cold morning—and it was very cold—an east wind blew the heat from the pots at right angles and the crop on the two outside rows was lost. By all means a double row of pots should be placed on the outside row.

The next cold night, less cold, however, than the previous nights I had smudged, I burned but one-quarter of the pots. The next cold night I lit one-half the pots. By this time carbon had formed inside the pots and the use of gasoline as a primer was unnecessary. We learned, too, that it was best to light a quarter of the pots at a time. This practice permitted us to cover the orchard in less time, thereby starting the temperature to rise over the entire orchard before frost damage could be done.

At the next lighting I used one-third of the pots, and failed to refill them the next day, thinking that I could "get by" with what oil I had. Right here is where I made a serious mistake, for within a few days came the fatal morning of April 16. The cots had just shed their jackets, and as yet there was little foliage to protect them. Although on this particular morning I commenced to light the pots at 2 o'clock, I was handicapped by a lack of oil and pots. Many of my old pots by

(Continued on page 647.)



How Californians use sunshine to serve the world with apricots. The illustration shows one of the ways in which an apricot crop is made valuable and imperishable after the foresight of the grower has helped the trees to produce it.

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EDITORIALS

A RATIONAL APPEAL TO FARMERS.

LOUd and clear and free from the hysterical variations which make it hard for the ear to surely catch the theme of the farmers' patriotic duty and opportunity, there rings out now and then the voice of the President of the United States carrying the motif directly to hearts attune and responsive. On May 19 President Wilson made this public declaration:

I have thought it necessary to ask Congress to put in my hands very great powers with regard to our food supplies.

Those powers are very great, indeed; but they are no greater than it has proved necessary to lodge in the other governments which are conducting this momentous war, and their object is stimulation and conservation, not arbitrary restraint or injurious interference with the normal processes of production. They are intended to benefit and assist the farmer and all those who play a legitimate part in the preparation, distribution and marketing of foodstuffs.

The objects sought to be served by the legislation asked for are: Full inquiry into the existing available stocks of foodstuffs and into costs and practices of the various food producing and distributing trades; the prevention of all unwarranted hoarding of every kind and of the control of food stuffs by persons who are not in any legitimate sense producers, dealers or traders; the requisitioning, when necessary for the public use, of food supplies and of the equipment necessary for handling them properly; the licensing of wholesome and legitimate mixtures and milling percentages, and the prohibition of the unnecessary or wasteful use of foods. Authority is asked also to establish prices—but not in order to limit the profits of the farmers, but only to guarantee to them when necessary a minimum price which will insure them a profit where they are asked to attempt new crops, and to secure the consumer against extortion by breaking up corners and attempts at speculation, when they occur, by fixing temporarily a reasonable price at which middlemen must sell.

WHAT THE PRESIDENT ASKS IS THE FARMERS' NEED.

IT IS impossible to predict how much of the list of powers, which the President asks for, Congress will come through with. There will probably be a thousand cords of talk about that, and this will itself be a good thing, while the crops are still growing and we are trying to knock together some ships to put them into. When the American people has leisure it can talk—all the way from the rural fence corner to the floors of Congress, and when the nation gets into a good talk you can never tell what it will bring out of it—therefore we do not get scared when the politicians rage and the voters imagine a vain thing. Both are generally better in the end for the exercise of their wits; besides it is not up to us to hold forth upon war needs and broad statesmanship. We do, however, find great satisfaction in contemplating the powers President Wilson asks for, because we conceive the products of such powers to be fundamental and essential to the interests of agriculture and to the attainment of fairness in the relation of the farmer to all other men. Therefore we rejoice at the thought of such

powers being exercised as a war measure: not only because of patriotic purposes involved but because a successful try at them will afford a demonstration that they are right and essential to the development of agriculture in its proper relation to other interests of mankind and productive of farming success and prosperity because such relations are recognized and enforced.

President Wilson desires power to know what foods exist, where they are, and what are the purposes of those who are holding them. This is exactly what every farmer needs to know, that he may judge what his product is worth at any time, price it himself and not be forced to take prices fixed by manipulators.

President Wilson desires power to remove control of foods from speculators who have no legitimate connection with producing or distributing it. This is exactly what real producers and fair traders need to have done.

President Wilson desires power to fix minimum prices so that labor and capital speeded into production shall not be lost. This is manifestly a war measure and of temporary application, and yet it is clearly a movement to fix prices upon the basis of the cost of production, and such a movement once under way will never stop until recognized and established.

President Wilson desires power to fix maximum prices—for the reasons which he himself clearly states. This is also a safeguard of ample and continuous prosperity to producers, because it tends toward maximum consumption at a fair profit to them.

SEERS VS. PINHEADS.

THE PEOPLE of the United States rightly hold the entry of this country into the great war to be a matter of vision and that is the reason they rise to it with such alacrity and enthusiasm. It is obviously essential that this vision shall not be clouded by a sky-full of mackerel—small political fish which should always be salted and barreled when great issues arise. Power to do this is what President Wilson asks of Congress. He has had experience enough with the pinhead propositions for national attitude and behavior and the people have had experience enough with pinhead propositions for increasing production by making the real farming interests subsidiary to back-yard and child-labor farming, which are desirable in their little ways but otherwise dreams and fallacies which have driven the country into hysteria of fear and hoarding. Farming is a business for grown-up and trained men and women—with the children, of course, growing into their places and with untrained and inexperienced adults breaking in as they can. It is the function of the pinhead to entirely reverse this natural order and the President wearies of them. He needs a man with vision and asks Congress that the powers over distribution and consumption, over exports, imports, prices, purchase and requisition of commodities, storing and the like, which may require regulation during the war, be placed in the hands of a commissioner of food administration appointed by the President and directly responsible to him.

CALIFORNIA THE HOME OF SEERS.

WE ARE, of course, not surprised that when President Wilson needs a seer he picks a Californian. California holds the record for long-distance and penetrating vision, for her people grow up that way, but they usually have to beat the world before they can rise above the barriers in their own country. It is traditionally that way with real prophets. It was that way with David Lubin, who was buffeted out of his own country by the Washington bureaucrats and compelled to take the sky from Italy in order to revise the financing of farming in his own country which is now largely accomplished because of his vision. It is the same with Herbert C. Hoover, whom the world recognizes as the savior of Belgium after the Kaiser ran the juggernaut of German ambition over the country. And it is Hoover upon whom the President calls to lift him above the political entanglements at Washington so that he can get a clear sight of what this country

ought to do for the food-strength of her own people and the food-strength to win the war for humanity in Europe. It is a grand thing for California to produce men who have worked so well for themselves that they can give service to their country and ask no compensation save the consciousness of doing their duty, and thus match what the patriots of other States are now doing. For President Wilson says of Mr. Hoover:

I have asked Herbert Hoover to undertake this all-important task of food administration. He has expressed his willingness to do so on condition that he is to receive no payment for his services, and that the whole of the force under him, exclusive of clerical assistance, shall be employed so far as possible upon the same volunteer basis. He has expressed his confidence that this difficult matter can be successfully accomplished through the voluntary co-operation and direction of legitimate distributors of foodstuffs and with the help of the women of the country.

And since the above was written another Californian, President Wilbur of Stanford University, has gone East for a term of unsalaried association with Mr. Hoover in the food administration work. Such voluntary service is only for the duration of the war and will not increase the political furniture of the country, for the President says: "There need be no fear of the possibility of a permanent bureaucracy arising out of it." He is quite right, for bureaucrats do not work for nothing and board themselves. And yet, though there will be no increase of the stated governmental machinery, there will be a permanent demonstration of great value in governmental principle in connection with food production, as has been already suggested.

LET PEDRO HELP!

WE HOPE the war will harmonize European nations upon the basis of representative self-government and in that way make all the world akin in devotion to popular rights and privileges. But whether this end, devotedly to be hoped for, is attained or not, it seems to be beyond question that it will hasten the unification of the Americas in more confident support of government by participation of the governed and in resolute resistance to the intrusion of autocratic interests upon this hemisphere. Disclosures made during the last few weeks show that we have already had very narrow escapes from German intrusion and still have a future to protect from it. If any autocracies survive the current European convulsion, they will be powerless to intrude, for the war will make our Monroe doctrine a pan-American principle. A solidified America will be, in defense of popular liberty, the bulwark of a reconstructed Europe. In the immediate effort toward this end, John Barrett, director of the Pan-American Union, shows as the result of a special investigation that the twenty countries of Central and South America exported in 1916 to the United States and Europe foods valued at \$774,000,000. The total includes beef, 104 millions; grains, 160 millions; sugar, 271 millions; coffee, 191 millions; chocolate, 35 millions, etc. And Mr. Barrett holds that the Latin American countries will be able to take care of and provide against that very shortage in the production of the United States and its allies which might be fatal in an ultimate crisis. To this end immediate action should be taken by the United States in aiding the countries of Latin America to increase their food production and to develop their vast unused fertile areas. If necessary and desired, they should be supplied with the necessary capital, agricultural experts and engineers to accomplish these ends. It surely looks like a good proposition.

THE WILDERNESS IS FOR MOSES.

THERE seems to be no reason to apprehend that the spur now being applied to food production will cause too great a jump in supplies which are able to bear the cost of long transportation. These are obviously such things as preserved fruits, dairy and packing house products and flour and feed grains, including legumes. The first two of these groups cannot be increased very quickly, the last group is cheaply moved around the world—when there are ships enough—

and such products can as easily be gone out of as into, if land and water give wide suitability, which is not the case with orchard and animal products, which admit no apprehension of over-supply, whether the future be of war or peace. Of other products we are not so sure. Of bread grains, for instance, Europe, which is the only market for surpluses from all the world, is likely, as soon as the war-cloud lifts, either to grow more than before the war or to consume less, or both—for Europe has had hard lessons in both lines and will have learned them well. In the matter of grains, therefore, it has been wise to make all the crop we can this year and next fall we ought to be able to judge whether we should do it again or trust less to distant demand for the grain crop and therefore grow less of it, unless we can see the livestock which can turn it into higher value. Grains of all kinds are likely to soon fall as rapidly but perhaps not as far as they have recently risen. For this, and because crop changes are few, we come to doubt whether the current exhortation to send out and stake men upon the

arid lands to do dry farming for patriotism is any wiser than it was a few years ago to do the same thing for speculation. For grain growing undertaken by assisted farmers in the arid region is much like the manna-gathering of the Israelites in the wilderness of Sinai. The record shows that manna might either disappear when the sun rose, or, if successfully gathered and stored by early risers, it might become hateful because valueless. Therefore, it seems to us unwise and often cruel to spread untried persons upon dry-farming enterprises, which they are apt not to understand, and to encourage them by loans to go into such dangerous situations in which they are apt to lose all they have and all they borrow. The people who can be trusted in such undertakings are those of experience in the districts where these lands are, and they are not the ones who are reached by a general propaganda. The taking up of such lands should not be made too easy. It is only for those who have cut their eye-teeth and grown cork soles on their feet. Too fast an uplift in this line may cause much disappointment and loss.

wants millets at all. For ordinary summer-grown forage and for grain, the non-saccharine sorghums are better growers and producers than any millet we know of.

Ants Accessory, Not Principals.

To the Editor: I have a nice garden, but the small red ants are killing potatoes, peas and beans. I have tried drowning them, but they work the same in moist ground as in dry.—G., Fresno.

Ants do not directly injure plants. There is an insect called a "white ant" or termite (which entomologically is not an ant at all) which is destructive to plants. Common ants infest plants because some other insect, which gives substances upon which ants feed, is present. This is usually an aphid or plant louse, and when ants are abundant on the plant it generally means that plant lice are present. See if you cannot find the reason why the ants are giving your plants so much attention.

About Root Knots.

To the Editor: I have apricot trees, one to three years old, affected with black knob or crown gall. They look well, but I am thinking of digging them all up and re-setting. Will I have the same trouble, by putting in new trees in the same holes, or is the disease in the trees themselves? The ground is comparatively new, having been cleared from oak and chaparral brush four or five years ago. Is there any precaution in the way of disinfecting ground before replanting? Would it be worth while to doctor these trees?—Z. P., Santa Clara.

When the tree is making a good growth it shows that it has a start of the knots. In such a case remove the knots with a chisel without injury to adjacent bark, cover the wound with Bordeaux paste and let the tree grow. If the growth is much reduced it shows that the knots have the start of the tree. Dig it out, throwing the soil toward the middles and plant a new tree in fresh soil. This tree will have to run the gauntlet of the same trouble and must be watched and treated in the same way. The disease may be either in the tree or in the soil or in both. No disinfection is needed in replanting small trees if a good hole is dug out and filled with new soil. In removing large trees use plenty of lime and leave the holes open to air and rains for a few weeks. This should be done in the summer or early autumn preceding planting time, and new trees planted in fresh soil from a distance. Of course, in an entire replanting strike the new rows down the middles or, if this is not desirable, change the spacing to bring the new trees between the places previously occupied.

Plowing Under Stubble.

To the Editor: Is it beneficial to plow under the stubble of a hay crop, so that a barley crop can be quickly put in with a cultivator after the early rains?—R., Newark.

If the soil is moist enough to rot the stubble, there is a distinct gain. If not, the rubbish in the soil will make the early rain less effective in starting a new crop which will hold on during the usual fall drouth. Therefore it is better to feed down and break up the stubble finely; or, if you have no stock to do this, it is better to burn it off before you do the dry-plowing. Plowing and harrowing after harvesting acts, of course, like a short summer-fallow and holds some soil moisture from evaporation and thus helps the coming crop. But to put on hay or grain on dry-plowed land is not good practice if the land is foul. In that case the best use to make of the early rain is to start a weed crop to be plowed under in the fall.

California Weather Record

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau at San Francisco for the week ending at 5 p. m., May 22, 1917:

Stations—	Rainfall Data.		Temperature	
	Past Week.	Seasonal To Date.	Normal To Date.	Data. Max'm. Min'm.
Eureka .....	.51	31.25	44.28	68 40
Red Bluff .....	.83	17.94	24.30	80 42
Sacramento .....	.04	12.88	19.77	78 42
San Francisco .....	.02	15.76	21.92	64 48
San Jose .....	.16	12.57	16.53	72 36
Fresno .....	.18	7.25	9.44	80 44
San Luis Obispo .....	.42	22.96	20.11	74 40
Los Angeles .....	.14	15.06	15.48	68 50
San Diego .....	.12	10.04	9.80	64 50

By
the Editor

QUERIES AND REPLIES

Inquirer Must
Give Full Name
and Address

Hoplias Eating Green Peaches.

To the Editor: I am sending pests I found in my peach orchard. Some of my neighbors, who have been orchardists for years, say they may be new. I would be glad to learn what this is and what I can do for it.—R. C. T., Atwater.

The insect is hoplia pubicollis, discussed last week for its injury to grape vines and garden flowers. The specimens show that it also has the habit of drifting into young peaches. We have not seen this before. The insect has cropped out now and then in the valley vineyards for the last forty years or more. Fortunately it does not occur widely nor does it stay very long, but, according to the specimens, it has the power of ruining a peach crop if abundant enough. Spraying with arsenate of lead is the way to protect the plant.

Our "Laurel" Is Not the "Sweet Bay."

To the Editor: One of our cooking instructors is stating that the California laurel is the tree which supplies "bay leaves" for commerce for the use of cooks, but my observation is that our laurel leaves do not answer the same purpose. How can you account for it?—Pupil, San Francisco.

The "sweet bay" tree, which has been used from most ancient times for wreaths for poets and warriors, and to this day gives its fragrant leaves for cookery and confectionery, is Laurus nobilis, which is native to the Mediterranean region. The so-called "California laurel" is a different tree: its botanical name is Umbellularia Californica and it is native to this State, as its name indicates. The aromatic quality of its leaves is also different from that of the "sweet bay" and less desirable. It may remove some misapprehension to add that neither of these trees is the source of "bay rum," which is made from another tree, Pimenta acris, a native of the West Indies and northern South America.

Weights of Near-Ripe and Full-Ripe Peaches.

To the Editor: Will you please tell me, through the Press, the difference in weight between Muir peaches as they are picked for the cannery and when dead ripe as picked for drying? I wish to determine whether drying would bring a better return than selling green to cannery after making the proper expense accounts of each.—Grower, Live Oak.

We have no comparative weighings from which to draw an answer to the question. It is, however, a matter of wide interest and we hope readers will submit points from their experience for publication. The full answer involves not only the added weight by full ripening, but how much of that gain is realized in the properly dried product. All careful observations along the line will be important to record for the public benefit.

Topping Grape Vines.

To the Editor: Why is it necessary to top Thompson seedless vines, and when is the proper time to top them?—A. W. N., Fresno.

* We are not ready to admit that it is necessary:

it is, however, often desirable. It may increase the size of the berries and it may help to shade them by inducing growth of leafy laterals. It may also prevent the vine from pulling open by the weight of long canes and thus preserve more desirable and convenient form. It may reduce somewhat the vegetative growth of too rank vines and for this reason should not be overdone. It may be quite undesirable on weak vines. Fruiting canes should not be topped too near the fruit: several leaves should be saved. It should be done rather early, say in June. The later it is done in the active season of growth the more it weakens the vine for the following year.

Gypsum on Young Alfalfa.

To the Editor: I have young alfalfa, sown this year, and have recently irrigated it. A hard crust has formed on it. Would you advise sowing gypsum before irrigating again?—H. S., Fresno.

It would stimulate the plant and improve the soil surface somewhat.

Wind and Vine-Sulphuring.

To the Editor: Will it do any good to sulphur on a windy day? Is it absolutely necessary to sulphur on a quiet and warm day? Which kills the mildew, the sulphur or the fumes from the sulphur?—A. W. N., Fresno.

It will surely do some good, though your neighbors may get it. You can best answer as to whether it is necessary to sulphur on a windy day when you get a good eyeful of sulphur. A quiet, warm day is prescribed because then the sulphur will settle down closest to its job and reach highest efficiency. It is the fumes which attack the mildew, but the closer the sulphur is to its work the harder the fumes hit. The old idea of sulphuring the ground to get the fumes on the vine has, if we are not mistaken, been abandoned as wasteful and inefficient.

To Speed Up Peaches.

To the Editor: Would nitrate of soda and superphosphate applied to Muir peaches as you recommend for apricots, in your issue of April 28, give the same results? The trees were irrigated ten days ago and except for this purpose I should not water again for a month. Would it be nearly as good simply to cultivate the fertilizer in?—S. S. S., Sanger.

Yes; working these soluble substances into moist ground by cultivation will set them at work and the next irrigation will extend their operation.

German Millet Not Approved.

To the Editor: Can you tell what kind of a grower German millet is, and how to plant it, and at what time?—M. T., Fresno.

We speak not from war prejudice but from facts, apparently demonstrated long ago, that German millet is a poor affair for California. It is a strange coincidence that our allies, Italian and Japanese millet, are both much better, if one

A California Colonist's Successful Struggle

[Written for Pacific Rural Press.]

OBLIVION is strewn with the wrecks of strong-hearted farming enthusiasts, of greater faith in real estate men's interpretation of land values than of good farm sense. And Oblivion is still accumulating such wrecks. That C. W. Carter and his family of the Los Molinos colony are not among them is due principally to the hard work of himself, his wife, and boy. They paid down their entire small capital on the five-acre farm and for fruit trees to plant on it. They had come from the Central West broken in health and practically broken in pocketbook. They had been renting for years; had knocked about from pillar to post, and were tired of it. They came here to make a home.

There was a house on the place, and Mr. Carter went to work for the Los Molinos Land Co. to earn the necessary daily bread while his wife and children farmed the place. He was carpentering in town the day we called at the farm recently, and the following story was told by his little wife, who has gained buoyant health, bright eyes and the weather tan which betokens where she got her health. Their son Merrill is a strapping lad about sixteen, fortunate in being still busied with growing things instead of coffin nails and billiard cues.

"We paid \$375 on the place when we came here five years ago," says Mrs. Carter. "We have paid \$200 per year since then, and have only \$400 yet to pay. You see the place is mostly set to fruit and nut trees, with just enough alfalfa to keep our horse and cow. We wouldn't take \$500 an acre for it now. We are going to get a Rural Credits loan to put down a well and improve the house. We'll have running water in the house, bath and all other conveniences that running water will give. We will also buy an auto truck, for the horse is too slow to deliver our vegetables. There is so much work to do here that we cannot afford to have one of us wasting six hours to deliver a load of vegetables when our boy with an auto truck will do it in half that time. We have done all our own work and have used only one horse except for spring plowing, when we had to hire a horse."

RECORDS OF INCOME AND EXPENSE.

Not the smallest factor in the Carters' success is their system of keeping accounts. Each day's receipts are set down in detail in their account book, showing quantity and kind of fruit or vegetable, to whom sold, and the price. On the opposite page are set down the "disbursements" in similar detail.

"In case of dispute with the Association through which we ship fruit and vegetables, we refer to our books. There have been some difficulties between the Association and other folks, but we have had no trouble."

MARKETING AND RECEIPTS.

Vegetables have been the chief source of income. Enough have been traded at the store to keep the balance in favor of the Carters. They have had a regular produce wagon route to Los Molinos and Tehama, often carrying vegetables to Gerber,

Proberta and Red Bluff. They are members of the Los Molinos Canning and Shipping Association, which includes about forty farmers, and has been operating two years.

"The Association has been fairly successful," says Mrs. Carter. "It has helped solve our biggest problem—that of marketing. Most of the people who don't like it are those who wanted to ship stuff that was not fit to ship or was not packed right. Of the 246 crates of cantaloupes we shipped last year, we were not docked on one. We picked, packed and sold nineteen crates in one day while the wagon was out delivering.

fourteen crates last year, which were shipped at \$1 per crate f. o. b. Los Molinos. Cantaloupes sold for \$280 last year, besides about \$35 worth of seed from \$50 worth of melons that would have wasted during the freight tie-up of three days. Watermelons from one-quarter acre sold for \$35, mostly to the local hop ranch workers. Tomatoes sold for \$25, and sweet corn for \$25 from a tiny patch about one-tenth acre. Kentucky Wonder string beans sold for \$5. Concord grapes from about twenty-five vines on the fence sold readily with demand for three times as many. They are already engaged for the coming year.

plants, which will separate the Kleckley Sweet and Chilian watermelons and sweet corn on the same piece. The watermelon varieties are to be kept separate, for the overripe melons are to be saved for seed, which the local stores handle in preference to Eastern or other seed. Crops from Eastern seed mature too fast in the estimation of the local ranchers, though some varieties have proved all right.

In the back yard are Himalaya berries along the irrigation ditch which separates the almonds from the rest of the place. These run riot and are not much loved because of difficulty in disciplining the vines. Loganberries and Mammoths in several rows are trellised on woven wire two feet wide laid flat on cross pieces fastened to low stakes. This spreads the vines out to maximum air and sun and permits training new growth on the ground underneath until the old wood is cut out after the crop is off. Raspberries border the back garden, which includes also several rows of California grapes, beets, lettuce, peas, turnips and seedling onions. Six bushes of gooseberries were tried against advice of neighbors. These are three years old now. They have a beautiful crop of berries. The last year's crop was used at home and given to neighbors, but this year's crop will be sold. The dewberries are among fruit trees in the front yard, a very pretty sight through blooming, ripening and autumn colored foliage. They had been lost in the deep grass when the Carters moved in. They were planted by someone who was not able to stick it out, perhaps on account of malaria, which has been a general drawback in the colony. This is being removed now by the mosquito abatement district formed under the State law. Hereafter anyone who leaves a pool of stagnant water on his place untreated will be subject to fine.

The front yard contains also plums, pears, apples, peaches, cherries and apricots, under part of which are planted potatoes, onions, peas, etc.

POULTRY AND LIVESTOCK.

Back of this patch are the alfalfa and the barn and chicken yard. Hogs, chickens and cows have been fed over-ripe fruit and unsold vegetables. This avoids waste and keeps the ground free from disease. Three cows proved too hungry for alfalfa, which does not pay so well as vegetables, so only one cow is kept now. As many as 300 chickens have been kept, but these are usually sold off to 30 or 40 and a new lot of baby chicks hatched or bought each year.

Not all has been smooth sailing. Mr. Carter works outside, except during harvest, and carries mail in the winter. Besides misfortunes mentioned above, it was found by costly experience that cut worms must be relieved of their hunger. In the first year several thousand tomato plants were set four feet apart each way. Cut worms took practically all of them. They were replanted and cut worms thrived on the new plants. They were replanted once more and still the cut worms were so hungry that the Carters got only \$15 for their tomato crop. The ground had been in weeds for two years.



The above illustrates picturesquely the combination which has enabled the industrious Carter family to found a home of plenty, health, and happiness in one of California's growing colonies.

That was the day we lost a hay rack load because shipping got ballied up. A good canning association for vegetables and fruits is needed to complete marketing facilities."

Some of the totals from the account book are interesting. In 1915 they sold \$87 worth of dewberries from about 100 hills on one-sixteenth of an acre. Frost got them last year, but, judging by the thick blanket of berries already set in mid-May, Mrs. Carter expects to sell \$150 worth in 1917. Two young plum trees yielded

People said they would not grow here, but they grew thriftily and bore a heavy crop.

THIS YEAR'S CROPS.

About two and a half acres of almonds were planted last winter, and these will be intercropped about three seasons, for there is an abundance of water all through the season from the excellent canal system supplied with mountain water. They had too many cantaloupes last year to handle well, so these will be partly replaced in the almonds with 1,000 tomato

Important Horticultural Laws Signed.

[Written for Pacific Rural Press.]

The five or six state laws affecting horticulture which have just been signed by the Governor are long steps toward protecting and enlarging the fruit interests of California. State Horticultural Commissioner G. H. Hecke, his chief deputy, George P. Weldon, and others who have worked hard for the formulation and passage of these laws, have done great service to the fruit industry. Mr. Hecke has prepared summaries of these laws from which we take the following notes:

SENATE BILL NO. 458.

State Board of Horticultural Examiners empowered to appoint County Horticultural Commissioners upon refusal of County Boards of Supervisors to appoint them.

Squirrels and gophers added to list of pests County Horticultural Commissioners are to eradicate or control. Lien on property to cover cost of eradication or control of pests and diseases by County Horticultural Commissioners shall take precedence over all other liens except lien of taxes.

Shipments of trees, plants, etc., must be held at destination until inspected by County Horticultural Commissioner.

Uniform methods of treatment and disposal of infected nursery stock shipments.

SENATE BILL NO. 460.

Two Field Deputies of the State

Horticultural Commissioner to bring about the greatest possible uniformity in enforcement of horticultural laws.

California nurserymen required to register with State Horticultural Commissioner and receive license whose number must be attached to every shipment. Nurserymen outside the State must secure permits before doing business here.

Salaries of several officials in the State Horticultural and Quarantine Department materially raised in order to retain efficient service.

SENATE BILL NO. 682.

Appropriation for search in foreign countries for parasites of the mealy bug, which is the most serious citrus insect pest. No successful artificial means of control yet discovered.

SENATE BILL NO. 761.

Protects the State against amateur entomologists who might bring dangerous insects. The orange dog caterpillar was recently found in Los Angeles county by an inspector before it got away from its amateur owner.

ASSEMBLY BILLS 145 AND 212.

Standardization of apple and other fruit packing and packages. No. 212 had not been signed, but there was every reason to expect it to become law, making needed changes from similar laws passed two years ago, which are repealed.

EASIER BLACKBERRY MARKET-ING.

[Written for Pacific Rural Press.]

D. W. Moore of Los Angeles County had over two and one-half tons last year on a patch of about 650 hills of blackberries, and about 240 hills of dewberries among apricot trees; but he did not pick them. Shortly before they ripened, he advertised in local papers and on a home billboard that the berries would be for sale at 2½ cents a pound to anyone who would furnish their own receptacles and come pick them. This price was lowered later in the season so it averaged 2 cents. Nobody could kick about faced packages, crushed or molded berries, short measure, etc., because they themselves picked the berries and saw them weighed by the Moores, who did nothing else except attend to irrigation and distribution of pickers.

As people sent or telephoned their orders, the Moores would ticket rows to the amount of the order. If they did not come when they said they would, somebody else got the berries. When too many ripened at once, the Associated Charities sent some of their charges to get berries for nothing. One party from many miles away brought a washtub in an automobile and filled it despite warnings that the berries would mash. One day, after the Fourth of July, there were 25 people picking at once. They hauled the berries away in wagons, buggies, automobiles, carts and wheelbarrows. They had to pick clean, but did not have to pick under-ripe berries unless they wanted them for jelly. No damage was done to the patch and everybody was happy.

The California Associated Raisin Company has appropriated \$150,000 for the 1917-18 advertising campaign. It is proposed to make Sun Maid raisins a household word.

a citrus spray that makes good

After work of several years in groves and laboratories our staff—Entomologist, Chemist, Practical Growers—have evolved for us on citrus trees a spray that will successfully and satisfactorily control insect pests at a cost much smaller than is possible with any other method of control.

TRIUMPH, a concentrated oil spray perfected by our staff, combined with Bordeaux, makes this citrus tree spray. If applied in accordance with our formulas, this combination spray of Triumph and Bordeaux is a beneficial fungicide as well as an effective insecticide.

Triumph with Bordeaux improves the general health of a tree and is safer in regard to spotting of fruit and tree injury than is a straight insecticide.

TRIUMPH with Bordeaux can be applied NOW, this summer, before insects do their damage.

There is no uncertainty about the supply or price. Stocks are on hand in Los Angeles and San Francisco. Shipments will be made at prices we shall be glad to quote upon application.

TRIUMPH with Bordeaux has been proved out by scientific laboratory tests and actual work in groves. It is not a "shot-gun" prescription.

Our new book, "Spraying of Citrus Trees," is full of money-making, new, accurate information. It also contains formulas and tables for the application of TRIUMPH.

Give us your name and size of your grove and we shall be glad to mail you a copy free. Address Box P, Insecticide Department,

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Angeles
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Entomologist



All the story
in our Free
New Book
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ORCHARD SPRAY



Perforated Tree Protector

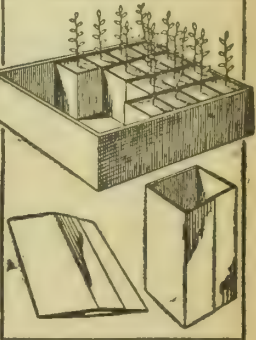
that will keep Squirrels, Rabbits and Gophers from barking your trees and give perfect protection from hot sun, sandstorms, barking in cultivation, etc. Tell us your pest and we will tell you what kind of a wrap to use. We make a number of kinds and can save every tree for you from pests.

Collapsible Planting Pots

These pots are bottomless. This allows you to plant pot and plant, never disturbing your plant nor stopping its growth in transplanting a single hour.

For starting early vegetables, such as Tomatoes, Cabbage, Eggplant, Cauliflower, Cucumbers, Cantaloupes and Squash; also for propagating Rose Cuttings, Geraniums, Eucalyptus and Conifers. It's the only practical pot on the market today for propagating work. Write us for samples of either Pots or Protectors. Tell us which you are interested in.

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"THE BOSS" TREE PROTECTOR



Made of Yucca Palm.

Is cheap, durable and quickly put on the tree. It prevents rabbits from destroying your trees. A sure protection against frosts, sunburn, grasshoppers, or dry winds. Can be easily removed, will last for years. Send for samples.

Prices

	Per 1000
10 in. long, 7 in. wide	\$10.00
12 in. long, 7 in. wide	11.00
14 in. long, 7 in. wide	12.00
16 in. long, 7 in. wide	13.50
18 in. long, 7 in. wide	15.00
24 in. long, 7 in. wide	18.00
30 in. long, 7 in. wide	21.00

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1380 Willow St., Los Angeles, Cal.

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Only Two Men to Run
Easy on Men and Team

THE AUTO-FEDAN—Means One Less Man

Three Stroke—Great Capacity—Self Feed—No Danger—Smoothest Bales—Easily Moved—Set—Extra Power—Simple—Durable—Guaranteed—Sold on Easy Payments CATALOG FURNISHED FREE

—THE ANN ARBOR 35—Great Capacity—Especially Strong for Alfalfa—Feeds Hopper only 35 inches from ground—Largest feed opening—SEND FOR CATALOG

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Tree Protectors



That Really Protect

Quickly and easily put on. Will stay.

Fitted with galvanized wire ties.

If you want better protectors for less money write us for sample and prices.

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Bay and Mason Sts.,
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FLORIDA SOUR ORANGE SEED-BED TREES

ONE YEAR OLD.

Remember, this is strictly fresh young stock and you don't need to be told how much better young stock is than old kept-over stuff.

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American Beauty Dust Sprayers



BETTER FRUIT

help solve the food problem. They are fast and thorough—uniformly dependable. Powerful bellows, perfect cloud—no waste. Best for vineyard, orchard, garden and field.

"A PUFF IN TIME SAVES THE VINE."

Ask your dealer, or send us \$11.00 for vineyard and garden size, \$13.50 for orchard size. Trial offer, all charges paid.

WE FULLY GUARANTEE EVERY MACHINE.

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Plant Your POTATO Land When Crop is off to

RHUBARB

If planted then you can expect BIG PROFITS by fall or early winter. OTHERS MAKING \$1,000 PER ACRE ANNUALLY—SO CAN YOU. Don't put it off any longer. April-May-June positively best months to plant. WHITE

J. B. WAGNER

"Rhubarb Specialist"

PASADENA, CALIF.

Growers' Remedies for Cut Worms

[Written for Pacific Rural Press.]

Cut worms have killed thousands of newly planted trees and vines this spring. They climb the trees at night, eat into or through the young shoots and stems of leaves or eat the leafy parts, leaving the mid-ribs. Many trees have been persistently robbed of all buds as fast as they pushed out. Sometimes a tree is cleaned in a night of all its leaves. The worms sleep and grow fat through the daytime around the bases of the plants they feed on, being covered with an inch or two of soil. One grower in Tehama county found 104 around a dock weed pulled in his orchard last week. A Sutter county grower found 117 around a tree.

Cotton Bands.

Will Beresford of Tehama county and his ranch foreman, Mr. Whitaker, tied small strips of cotton batting around the young tree trunks. These were about two inches wide, and it was said that the worms would not crawl over them. About two pounds were enough for the 1100 trees.

Tanglefoot on Papers.

On the Jones & Sproule orchard in Butte county we found G. W. Overton applying tanglefoot on strips of paper around the trees. The strips were about 2x4 inches and were wrapped around the trunk until the end could be pasted down with a daub of tanglefoot placed under it with a small paddle. Then the rest of the paper was daubed by holding the paddle against it and turning the handle around the tree two or three times. It is easy to fix a tree in half a minute. Paper was used for fear tanglefoot would injure the bark. A neighbor reported tanglefoot put on a year ago to be in about as good shape now as then.

Tanglefoot Alone.

On a large orchard near Chico a bunch of men applied tanglefoot directly to the bark of year-old trees in bands about two inches wide and very thick. It was said to require 110 degrees temperature to make it melt. The men had seen worms work themselves out of it, always falling to the ground. Sutter County Horticultural Commissioner H. P. Stabler observed that cut worms walked right through tanglefoot freshly spread on a paper flat on his desk. But a day or two later the tanglefoot had become much

more sticky. Anyhow, they might crawl on a flat surface but not up a vertical surface through tanglefoot.

Chickens Scratch Them.

Mr. Overton noted that for 300 yards from a chicken house where chickens had free range they would scratch around the trees and clean up the worms, protecting the trees from the excessive injury observed in other parts of the orchard. The same point was made at a neighboring orchard across the road from a flock of hens.

Arsenate of Lead.

J. T. Onstott of Sutter county had tree protectors up to the limbs of his newly planted trees. These being set a couple of inches into the ground, had no cut worms inside them and could have been banded with tanglefoot like the tree trunks noted above. But his workmen had become too stuck up trying to handle it in the form of fly tanglefoot paper. So the tops were sprayed from a compressed-air sprayer carried on his back, with a pound of powdered arsenate of lead per 50 to 100 gallons of water. We dug a score or more of dead worms from the soil under several of the sprayed trees. Powdered arsenate was dusted on young grape vines, but a rain that night washed off most of it.

Poisoned Bran Bait.

Many Fresno and Santa Clara county fruit growers have recommended poisoned bran, as published in our columns frequently. This is to be scattered on the arms and around the trunks of vines and trees.

WIRES INSTEAD OF PROPS.

Props under fruit trees are always in the way of cultivation. When wind lifts the branches, props fall. It is more work to install props and far greater expense than to use wires as Will Beresford does on his heavily loaded prune orchard in Tehama county. When weight of fruit begins to bend the branches down, many sticks are cut about an inch and a half in diameter and a foot long. Number 12 wire is fastened around the center of a stick and placed in a crotch needing support. The wire is stretched across the tree to a similar stick back of another crotch. It is pulled tight and fastened. No. 11 wire is too stiff, while No. 13 is not strong enough.

Now Is the Time to Fight Grasshoppers

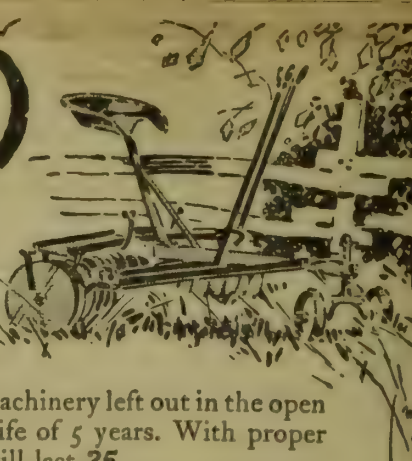
[Written for Pacific Rural Press.]

Grasshoppers were hatching in myriads on the warm hillsides in the middle of May, according to Butte County Horticultural Commissioner Earle Mills. They feed there until green feed is gone. Then they migrate to farmers' crops. The time to control them is before they migrate. In the June issue of the Monthly Bulletin of the State Horticultural Commission is an article in which T. D. Urbahn of the U. S. Dept. of Agriculture recommends the following poison: Mix a pound of Paris green thoroughly with four gallons of water and two quarts of cheap blackstrap molasses. Add half a dozen lemons ground fine in a meat grinder. Slowly pour this mixture over 25 pounds of bran and stir thoroughly to a uniform mixture. White arsenic is about as good as Paris green. Oranges or a little salt may replace the lemons. Alfalfa meal or rice meal may replace the bran. Broadcast this on hill land by hand or with an end-gate grain-seeder. Spread finely, for all lumps are wasted and a menace to stock. The above amount is enough for five acres.

Grasshoppers feed ravenously late in the afternoon. The poison is most effective if spread early in the afternoon. In alfalfa, mow alternate checks to concentrate the grasshoppers, then poison them.

Always be careful not to poison livestock and poultry. Two or three days after the poison is spread, the grasshoppers will collect in shady places and die. Ants, beetles, etc., will eat many of them.

5 years
or
25?



Farm tools and machinery left out in the open have an average life of 5 years. With proper protection they will last 25.

If *your* implements are rusting out of doors, start an implement shed at once. Use California Redwood for posts, mudsills, frame, siding and shingle (or shake) roof.

California Redwood

Resists rot and fire

Redwood contains a *natural* preservative which gives it wonderful living power in contact with the ground, or when exposed to the elements. Redwood does not have to depend on *artificial* preservatives for its durability.

And Redwood is *fire resistant*. It gives you real protection. Redwood is light in weight, easily worked, and the seasoned lumber does not warp, swell or shrink.

Its use for *any* farm purpose is a real economy.

FREE BOOKLET: Write today for "California Redwood on the Farm." And consult your local lumber dealers. When writing, please give us their names and addresses.

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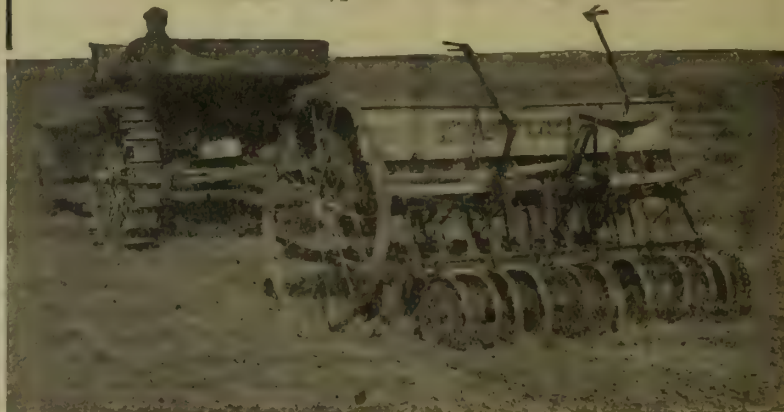
Ask for the child's story of the "big trees" of California—there's a copy for every child in the nation.



A Little Wonder Ford Tractor

Is the Best Investment You Could Possibly Make

Both as a Time Saver and a Profit Maker. This Attachment is All Steel — Light — Strong. Easy to Attach and Take Off. Also Easy on the Car. It is Geared 11½ to 1 with 40-inch Wheels.



\$150.00 F. O. B. LOS ANGELES

Wire, Write or Call and Arrange for a Demonstration. Orders filled in the order of their receipt.

Wm. Gregory & Sons

602 North Main St., Los Angeles, Cal.

Dealers—Territory is being rapidly taken up for this fast seller. How about your neighborhood?

Humus Helps Citrus Fertilizers

[Written for Pacific Rural Press.]

"The great proposition here is to get humus," says C. D. Baker, speaking of his orange orchards in eastern Los Angeles county. "Commercial fertilizer is wasted unless you have humus to encourage bacteria. With plenty of humus in the ground, it takes water like a lamp wick. Otherwise you are likely to think you have given enough, but the outside leaves will get pinched and the crop will suffer."

In the fall of 1915, Mr. Baker put a little over a ton per acre of loose spoiled alfalfa on the three orchards comprising 23½ acres and disked it several times after pulling it apart. It cost \$8 per ton at the orchard and was preferred except for the great labor of working it in. Last fall and whenever he could get it, up to February this spring, manure and lima bean straw were applied. A bale of bean straw in every square between four trees or 10 to 12 cubic feet of manure per tree, added nitrogen and

humus with less labor. The bean straw cost about \$10 at the orchard, but of course all such materials cost more now. Cheaper humus and nitrogen would have been obtained last winter on ten acres if the melilotus cover crop had been planted earlier and irrigated sooner after planting.

Having supplied humus, Mr. Baker puts commercial fertilizer freely to the trees. Blood and superphosphate, six pounds of each per tree, were applied late in February, 1916, just after the heavy rains, but in time to benefit from light late rains. Eight or ten pounds of blood per tree should be applied each year, thinks he.

These trees were hard hit by the freeze of 1913, and even last spring not all of the dead brush had been pruned out of them; but they had been improving greatly in fruit wood, color of leaves, etc., in the past two years, especially since the heavy pruning in 1915.

The growers of oranges at Riverside and Redlands have been compelled to bring in help from outside

districts to pick their fruit. Some Mexicans have found work in California orange groves.



There's no system equal to the KOPPEL. It is the quickest and most economical way known to handle dried fruit. Our

NEW BOOKLET

goes into detail and explains why it will be to your advantage to use this money-saving system. No charge. Write NOW. Address

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412 E. 3rd St., Los Angeles. 241 Rialto Bldg., San Francisco

THINNING PLUMS NOW.

[Written for Pacific Rural Press.]

It is necessary for H. A. Bassford to thin all his shipping plums this year except the Grand Dukes, which were frosted. "The quicker they are thinned now, the better," said he, in commenting on the thirty-five men he had at that job. The smaller varieties, such as Beauty, Diamond, etc., should be left about an inch apart, while Gaviota, Formosa, Grand Duke, Santa Rosa, Wickson and Vacaville may be left two to two and a half inches apart. Imperfect plums should be picked first, and in all cases care must be exercised to avoid loosening the stems of those remaining. Such loosening is not noticed until a day or two later, when the plums shrivel and turn yellow. In Vaca Valley frost danger is usually past by April 20, after which thinning may proceed. "We must thin our shipping fruit to get fancy sizes."

HOW I SAVED MY APRICOT CROP.

(Continued from first page.)

this time had leaky bottoms. I could not raise the temperature to the customary 31 degrees, and as a consequence lost 25 per cent of the crop.

With all my blunders I will have at least eighteen tons of green fruit, which I consider about 65 per cent of a crop. The seven smudgings cost less than \$100. It seems to me that I have been well paid for my work. And, too, there is a lot of fun in the fighting—the doing something that the other fellow won't do; and that is worth something. It's a game of war: You have pots for men, oil for ammunition—and the enemy, King Frost, has only a flimsy airship.

It is expected that the California orange crop this year will exceed 54,000 carloads. The Florida estimate is 20,000 carloads.

Fire pots in apricot orchards have proven to be ineffectual this year because of severe and continued cold nights.

Don't worry when you stumble. Remember a worm is the only thing that cannot fall down.

Heap big mileage!

Mileage Makers

Every Savage mileage maker gets full credit for good work because all work is "keyed" to the serial numbers on the tires. We know in every case just who is responsible for "Heap big mileage."

This plan creates a strong sense of personal responsibility and pride among our workmen, and there is keenest rivalry to see who can produce most mileage per tire.

You can help us to produce even greater mileage for you if you will send us full details of all Savages that run over 7000 miles

Please be sure to give Serial Number size of tire, date of purchase, name of dealer and actual number of miles run

To help show our appreciation for this co-operation, we will send an inner tube patch free of charge to all who report, "Heap Big Mileage."

Watch for the red Savage sign

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SAVAGE GRAFITE TUBES

The only tubes that have graphite vulcanized into the surface. Prevents deterioration, sticking, friction and heating. Makes soap stone unnecessary. Lengthens the life of the tubes.

Building an Empire on a Sea-Bottom Desert

[Written for Pacific Rural Press.]

SELDOM have 15 years of one man's life been so intimately interwoven with everything concerned in the rise of an agricultural empire as have those of W. E. Wilsie; and more seldom still is the debt of gratitude so universally and unstintedly accorded as by the people of Imperial Valley to this man, who has ever put public interest ahead of his own, and yet made good also in a personal way. He himself, however, is more thankfully proud of, "My real success has been along lines other than money."

He has seen the Valley increase from perhaps a thousand settlers to a population of 50,000 or 60,000. He has seen the irrigation of 300,000 acres that had been a veritable death valley; and he will probably live to see 300,000 acres more brought under ditch water. He has seen lonely men struggle with the elements, dot the landscape with trees and homes, and bring happy families to be neighborly. He has seen the effect of alfalfa on climate; for where growing things absorb heat, it is not unbearably reflected from parched ground.

We found Mr. Wilsie sitting in an easy chair on the veranda, awaiting the noon meal with a family educated in the schools he fostered. "My wife liked it here from the first," said he, "and she has not slept off the ranch fifteen nights in the fifteen years." She was made of stern material, we ken, to like that forsaken waste after the six-day ride 27½ miles from "Old Beach" (now Niland) to Imperial. A 12-horse high-wheeled lumber wagon brought her and the children with their household furniture, through ruts too deep for a buggy, through the incomparable Imperial Valley mud made by a rain of one and three-quarters inches the night after they arrived at "Old Beach." That was in the spring of 1902, after the water had come through the ditches for the first time in June.

Yes, there were "trees" which died annually and grew so big each year that a man would get lost in them. Mr. Wilsie has measured one 14 inches in diameter and 14 feet high—common pig weeds. Where weeds grew so luxuriantly, it was reasonable to believe that feed would grow. He settled near what is now Imperial, and raised a crop of barley and sorghum corn that first summer; then moved to the ranch near El Centro, April 3, 1903.

With the first combined harvester shipped into the Valley, Mr. Wilsie cut the first grain shipped out—three cars of barley and one of wheat in June, 1903. The first train had come to Imperial in May, 1903. He has been raising barley ever since, and now has 280 acres of it on one of his ranches; though of late years Durango cotton has been his principal crop.

The banks in 1902 put up money and shipped in steers which were sold to farmers on time. These farmers fenced their corn and pastured the steers on it, finishing them on barley. When the stock was sold to the butcher, the banks

were paid, with interest at 10 per cent—a good transaction for the banks, for the farmers, and for the country.

In the spring of 1903 a San Diego man started a creamery in Imperial. Feed on the Coast was short that season; and dairymen drove their cows to the Wilsie fields and those surrounding him. Mr. Wilsie bought about 80 of these cows. He hauled his milk around El Centro one day, about 1905, and sold 17 cents' worth, finding only two ladies in town. That milk trade worked up to \$450 and \$500 a month; and he milked as many as 200 cows at a time, the surplus going to the creamery. His two boys having grown up and left home for school, he sold his dairy out.

line of farming in the valley—horticulture. Under this head are included weeds, cantaloupes, cotton, and vegetables, besides fruits. It was for Mr. Wilsie to do all the broad fundamental work of developing these things (except weeds) and to write every horticultural ordinance that the county has today. It was for him to encourage the experiments in growing all kinds of fruit and produce in order to test out this soil and climate, the likes of which do not exist elsewhere in America or the world. Many fruits have failed, but wherever cantaloupes are eaten in America, there Imperial Valley is named. Imperial Valley cotton is the wonder of the cotton-growing world for cleanness, productiveness, and staple. Where-

with 30 or 40 other varieties, in experiments that lasted several years. Durango seed had been saved from the St. Louis World's Fair exhibit of cotton from Durango State (Mexico); and 10 acres had been grown in Texas under U. S. Dept. of Agriculture supervision. Some of this seed (two rows 200 or 300 feet long) was planted in 1910 in a separate plot, and two rows 40 rods long were planted in the short-staple field. Next year with seed from the patch grown separately, Mr. Wilsie grew three acres of Durango. It produced four and one-half bales which sold in New Orleans for 19 cents—way beyond ordinary cotton prices then. The seed was saved carefully and a meeting of growers was called at which the seed was distributed. Owing to interpollination due to farmers planting Durango close to other varieties, this soon became mixed. Mr. Wilsie claims to have consistently protected the pure Durango seed, and his is still the place government men come for pure seed. He has cotton now on the ranch traceable by records in Washington, D. C., back to the original Durango. He grows nothing but Durango and he persistently "rogues" out all off-type plants from the seed field. Until a year ago, he was president of the Cotton Growers' Exchange, organized in 1912 and reorganized in 1914 into the Imperial Valley Long Staple Cotton Growers' Association. He has seen the Durango crop grow from three acres in 1911 to 35,000 acres in 1916. "You get me going when you say 'cotton,'" were Mr. Wilsie's parting words.

CONSERVING MOISTURE WITH ROLLERS.

Heavy winds and lack of rainfall is making it necessary for many summer crop farmers on unirrigated land in the San Joaquin Valley to take extraordinary steps to conserve what little moisture there is in the soil. There are various ways of doing this, but the writer has found a spiked-toothed iron roller very effective on a sediment soil. Plowing was delayed longer than it should have been, with the result that a rank growth of burr clover and other weeds about sapped all of the top moisture. Because of the lateness, we secured a tractor outfit with good heavy plows to plow about ten inches deep and we followed this immediately with two cross harrowings, the first one being done by the tractor to save moisture, as they could pull 75 feet of harrow.

This was followed with a Cunningham land pulverizer, which not only broke the clods in fine shape but left a nice mulch as well. Now, after one week, the moisture is gradually raising and a good portion of the field will not have to be irrigated as a result. A neighbor who could not sprout "gyp" corn seed because of lack of moisture has borrowed the roller to go over his field before replanting on the theory that it will firm the top soil down to the moist soil underneath and thus start capillary action and raise the moisture.—J. C. L.



A Durango Cotton Plant. This is the long stapled, high-priced upland variety which has increased by the thousands of acres every year in Imperial Valley. Its introduction and the continued purity of its seed are largely due to Mr. Wilsie's efforts.

FIRST CO-OPERATIVE CREAMERY.

While Mr. Wilsie was yet in the dairy business, he had a great surplus of milk. He was instrumental in forming the first co-operative creamery in the Valley and was its first president. He dug the settling pool for the first ice plant in Imperial and hauled the rocks for the engine foundation. He was president of the El Centro Cantaloupe Growers' Association, which did business as long as cantaloupes were shipped from that station. It was the first cantaloupe growers' association in the Valley.

FIRST HORTICULTURAL COMMISSIONER.

You might not expect a dairyman to make a successful horticultural commissioner; but when the county was organized in 1907, its supervisors asked Mr. Wilsie to undertake the promotion and protection of what has become the best-known

ever Eastern folks eat early California vegetables and fruits, there Imperial Valley is known.

Assisted by natural barriers and salutary local ordinances, most horticultural pests have been kept out of the Valley. Two or three years ago Mr. Wilsie's deputy, F. W. Waite, took up the work.

HIS WORK FOR COTTON.

Mr. Wilsie was not the first to grow cotton in Imperial Valley—he never saw cotton grow until he saw it tried there in numerous test plantings by the U. S. Dept. of Agriculture. But he grew 70 acres of the first commercial crop (of 450 acres) grown in the Valley. It was in his capacity as farmer-horticultural commissioner that he imported and sold to farmers at cost a carload of pure short-staple seed. About that time it was decided to try out what seemed a better variety (the long-stapled upland Durango) along

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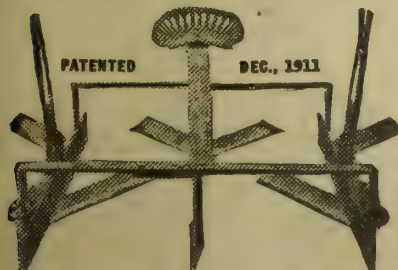
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WHAT IS THE MATTER WITH THE FARMER?

To the Editor: I asked my grocery man the other day the price of dried peaches. He said that he hadn't handled a dried peach in a year, that they were not even quoted any more.

Napa county, until a couple of years ago, had lots of peaches, but prices got so low that they were either worked over to prunes or else dug out. Now the very men that were responsible for the low prices are offering big prices in order to get the grower to plant peaches again.

The story of the peach is the self-same story of the orange, lemon, fig, grape, prune, etc. Cannot the grower be made to wake up? The childish greed of the middleman works against himself, the grower, and the public. He doesn't have sense enough to let the grower live at all; he just crushes the life out of him.

Cannot the farmer be got to join one big organization, whose aim is to uplift all farmers and not a certain group? I have belonged to several farmers' movements, but when I got acquainted I had no difficulty in seeing the middleman earmarks all through them.

Why do we need a separate organization for the citrus man, or the raisin grower, or the prune and 'cot grower? Many ranchers are interested in half a dozen crops, and the same with stock. If we had all the different organizations under one head, we could afford to get a big man to head it and pay him a big salary.

We have in Napa county a Farm Bureau, two granges, a Farmers' Fire Insurance Co., and, until a couple of years ago, a Farmers' Union. When the Rutherford Grange started they started a fire insurance company, so we have two. When the Farm Bureau first started we did quite a little co-operative buying. Our Farm Adviser got lime for us for half the price we formerly paid. Today we have gone back to the old game, buying locally and separately at \$12 per ton, and in consequence no more lime is used. Farmers bought hay and grain and many other things co-operatively, but no more.

We have a most wonderful Board of Supervisors in Napa county. Grand Jury reports go to show that in the past six years \$600,000 have been squandered on our county roads. Our Chamber of Commerce has taken up the question with a competent road engineer and found out we could have cement roads for less money than we are now paying. We tried to get a new charter. The local Grange voted in favor of it, the Rutherford Grange voted against it.

When the Rural Credits question was before the people, the Rutherford voters went against it. Suscol has a farm center; she put in 32 votes against and 1 in favor of Rural Credits. Coombsville, an adjoining center, voted in favor of it. I particularize to show that the farmer is not thinking at all.

Napa. CHAS. BLOM.

It is a rule that holds in economy as well as in hydraulics that you must have a source higher than you tap.—Emerson.

Have You Enlisted

in the fight to overcome the great world food shortage?

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Vegetable and Field Crops.

[Written for Pacific Rural Press.]

Corn and Tomatoes.

Corn and tomatoes are planted half way up on the sides of furrows in Manuel Vetter's garden in Tehama county. When water runs through the furrows it soaks the roots without touching the plants. Part of the ridge can be raked into the furrow so soon as the water has sunk away. This will kill weeds and prevent evaporation and baking, but keep the roots moist.

Soil Auger Before Buying.

Before buying a piece of river bottom land a Sacramento Valley settler took a sample to a good authority and asked if it was good for alfalfa. The reply was that the only question in this case was depth of soil and a supply of moisture. The settler tested several places with an eight-foot soil auger, finding loamy soil as deep as the auger would go. He bought the land and enough water to supply the alfalfa for two years, after which he figured its roots would be deep enough to get moisture the year around.

Squash on Ditch Banks.

In order to utilize every foot of his land this year, J. W. Scott of Stanislaus county has kept his ditch banks cultivated all spring that he could grow squash on them for hog feed next fall. In ordinary years a big lot of land is wasted in ditch banks, but by keeping them cultivated there is room for two rows of squash on Mr. Scott's ditches, and as the land in them sub-irrigates all during the summer they will require very little care after planting. He uses a "crooked neck" variety of squash because of less damage from worms.

Guarding Against Weevily Bean Seed.

Bean growers who have not already planted will do well to thoroughly fumigate their seed with carbon bisulphide gas before planting, as weevily seed not only does not germinate well, but plants from such seed do not grow satisfactorily after coming up. To eliminate weevils from seed before planting, place the seed in a tight receptacle (wine barrels will do nicely) and pour carbon bisulphide into an open dish on top of the seed. An ounce for each 75 to 100 pounds is recommended. As the fumes from the liquid settle among the beans, all of the weevils are killed. The gas should be allowed to act from 24 to 36 hours, and as it is highly explosive it should not be exposed to artificial light or fire. A simple way of determining whether seed is infested with weevil is explained by a bean broker, who sets a tray of each sample lot of beans on the radiator in his office. The heat drives the weevils out, he says, if there are any to be found.

Bean Soil Packs.

According to Ray Ingram of the Gabert & Ingram ranch, near Gavilota, they have trouble in preventing the soil from packing. They plow their bean land immediately after harvesting in the fall with a Samson tractor. In the spring they use a Killefer bean chisel, pulled by a

Samson, with a harrow hitched on behind. They then hook on a bean planter of multiple style and behind that pull a drag. This does the plowing, the cultivating and planting, and drags the land to keep the moisture in, all in one operation, and so does not begin to pack the soil as much as if two or three separate operations were made. Gabert & Ingram always have about twenty sacks to the acre of small whites.

It is said that hundreds of acres in the Redlands district will be planted to beans and potatoes this spring and summer and two gardens will grow where none grew before.

A report from Hamilton City states that the sugar beet factory at that place will be ready to operate by July 1.

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CRITICS' AND CUDDLERS' CORNER

Subscribers are welcome to praise or to condemn (in letters of not over 200 words) anything which appears in the reading columns of this journal. Contributors to this department may drive and counter-attack each other as they see fit without endorsement or response on our part.—Editors.

Likes the Kaiser, but Loves Humanity!

To the Editor: I consider it an unfriendly act to print, under the sarcastic heading, "Cream for the Kaiser," a part of my letter which was written when we were still at peace with Germany. You refrain from printing my name, but I suppose some secret agents will be up here and shadow such a dangerous enemy spy! If they do, they will find a duffer that is not only harmless but broad-minded and liberal enough to give the devil his due, even the "demon Kaiser." They will also find, if they care to investigate, that this same duffer in 1915 personally solicited a subscription to the Belgium fund in this town, heading the list with \$20, and collected \$480 and odd in denominations of mostly fifty cents and a dollar; and that he holds a letter of thanks from the Belgian Consul at San Francisco. And if they care to investigate further they will find that he has since then subscribed more to the Belgian fund and to the Polish fund and sent Christmas boxes to the German soldiers in the trenches, and that he has just collected a subscription of \$52.75 for the "Overseas Tobacco Fund" for the British soldiers in the trenches.

Have you, Mr. Editor, done as much personally to furnish real cream to the enemies of the much-despised and greatly admired Kaiser? I hope so. READER.

Angels Camp.

Farmers Embarrassed by Attention.

To the Editor: I see in your journal of May 12 an article by Gifford Pinchot saying the safety of the country is in the hands of the farmers, etc. I have noticed considerable of this writing in the papers of late urging farmers to speed up to save the nation and mankind from starvation. Most of the writers are not farmers. The real farmers are saying very little. They are overwhelmed by the solicitous attentions now gratuitously bestowed upon them. We real farmers who come into direct contact every day with mother earth, and are not schooled in the fine art of politeness, scarcely know how to respond to such marked attentions.

No one complained when we sold our dried peach crop in 1914 at 2½ cents a pound—below cost of production. The equilibrium of society was not disturbed in 1915 when the peaches rotted on the ground because no one would pay enough for them to meet the cost of drying. Such memories do not induce us to burst with enthusiasm now. Many writers preach "back to the farm," but not themselves! The cities are overcrowded now because the farm has been discriminated against and made hazardous by speculators in farm products. Environment controls our lives—not argument.

Doubtless this scarcity of food will serve at least one good purpose—it will prove that farming is the greatest factor in modern business life, and that to discourage the farmer by handing him the short end of everything is a dangerous practice.

Greenfield. J. D. DUNOVANT.

1917 FAIR NOTES.

Not all fair dates are set. Those omitted have not responded to our request for their dates.

Placer County Fair, Auburn, in September.

California State Fair, Sacramento, Sept. 8 to 16.

Stanislaus County Fair, Modesto, during week of Sept. 17 to 22.

Kings County Fair, Hanford, Sept. 17 to 22; B. Gravatt, secretary.

Napa County Fair, Napa, Sept. 22 to 26, under auspices Napa Agricultural Society; N. F. Coombs, secretary.

Fresno District Fair, Fresno, Sept. 24 to 29, will offer special premiums for most efficient and prolific growing of food products. Livestock premiums increased and new facilities will be added to fair grounds.

Yolo County Fair, Oct. 4 to 6.

Riverside County Fair, Riverside, Oct. 9 to 13.

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Best in the Long Run

Illustration of a Goodrich tire and a test car.

Proposed Solution of Farm Labor Problem

[Written for Pacific Rural Press by David N. Morgan, Associate Professor of Agriculture, University of California.]

Agriculture as practised in California has not been economically sound. No other business could operate on such an irregular margin of profit. A farmer has certain fixed charges which vary but little from year to year. The yield per acre varies considerably, due to quantity and distribution of rainfall and seasonal variations. A short crop in a section of the State does not necessarily mean a high price to the farmer; nor does a heavy crop always mean a low price. National and international crop yields must be considered.

WHAT CHEAP LABOR HAS CAUSED.

There is introduced into farming operations a hazard which has caused farmers to work with a minimum outlay for labor, equipment and housing conditions in order that a possible poor yield might not bankrupt them.

The housing facilities for farm laborers on many California ranches have been so poor that the only class of laborers who will endure such treatment is the submerged races from southern Asia and the Orient, who have a lower standard of living than the Americans. They have, up to the present, been contented with a lower wage than an American demands.

The existence of this large class of uneducated, under-fed, under-housed and under-paid labor has made possible the operation of our California farms on an unstable basis. It has been possible for farmers to sell their crops for less than the actual cost of production. In lean years they have gone without pay for their own labor, and by underpaying their help they have escaped the clutches of their mortgagees.

In years of high yields and high prices the farmers, by practising the same methods of economy, have made apparently large profits. These profits when spread over the lean years indicate a narrow margin of profit or loss annually.

These conditions affect the small farmer as well as the larger companies, since their markets are the same. The small American farmer is in a worse predicament, however, for his labor is in competition with the underpaid labor on the larger farms.

PREDICAMENT OF THE SMALL FARMER.

A farmer is dependent for his income on the interest on his capital invested plus his own labor. The smaller his capital the larger per cent of his income must be obtained from his labor. The labor of the inadequately financed farmer, when brought in competition with the races that have a degraded standard of living, does not always yield him a satisfactory living.

Large corporations, such as sugar beet companies, when sugar prices are high go into districts and offer a rental for land 50 per cent higher than the American small farmer can afford to pay. The companies can do this because they expect to operate this land not alone with adequate machinery and capital, but more important, with underpaid, poorly housed contract Oriental la-

bor. The actual rental paid for this land under such conditions places an inflated price on the land, thus increasing the difficulties of the small American farmers who are striving for a foothold.

A HIGHER CLASS OF LABOR DESIRABLE.

The condition on the part of the California farmers to so operate is not of their own choosing. They would much prefer to have in their employ a class of laborers comparable with those employed in the building trades and large industrial concerns or public service corporations, for nothing is more exasperating nor discouraging to a good farmer than inefficient, irresponsible laborers. The uncertain margin of profit in farming has previously not permitted the farmer to compete with industrial plants for unskilled labor.

The industries of the cities are withdrawing from the country more of the dependable labor. These men are not attracted by the lure of the city nor the moving picture entertainments, but by the higher wages and better living conditions. A country-bred man gets his greatest pleasure in the country and looks forward to the day when he can go back. The army draft will interfere further with the normal supply of farm labor. The farmer in California must this year compete with industrial concerns for his supply of unskilled labor. This is an actual fact and not a theory. To do so successfully he must provide housing conditions as comfortable as are ordinarily obtained in cities by the same men and pay a wage equivalent to that paid in the cities.

RESIDENT FARM LABORERS.

When the farmers realize the necessity for this action hundreds of hard-working men of family in the cities will gladly move into a house in the country where they may have their garden and cow and chickens, and be ready to give an honest day's work to any of the farmers in the district whenever they may need them. The cost of supporting a family in the cities where the children have little opportunity to help will tend to divert many families to the country. Farmers may have the opportunity of providing themselves with a dependable and permanent labor supply.

If men were operating a shoe factory they would pay the increased wage demanded and add the price to the shoes. If a railroad, they would ask and receive an increase in rates. If engaged in any line save the production of foodstuffs, they would pay their laborers a wage comparable with what they could receive elsewhere, and attach the added cost of this labor to the selling price of the product.

But since the farmer does not know the price his product will bring when placed on the market, he hesitates to increase the cost of production through paying higher wages for labor. With an apparent labor shortage imminent, and no basis for figuring the selling price of his crop, he hesitates to plant summer crops. There are too few agencies that care to contract for the

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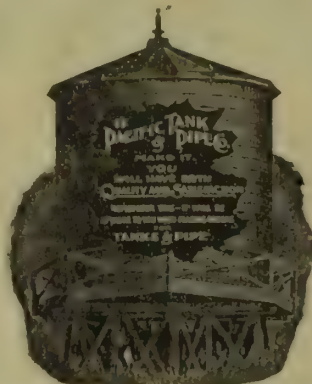
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farmers' crops in advance. The farmers must take all the risk, do all the hard work, and accept the price offered at harvest time.

THE GROWER NEEDS AN ASSURED PRICE.

An effort was recently made to have the Army, through its Quartermaster, contract for as much of this year's crop of beans as it will require. It was hoped that such a large consumer of beans would be in a position to know the profitable bean crop of this year and the Army's contract price would serve as an index of the price to be expected.

Canneries and other purchasers of perishables long ago learned the necessity for contracting for tomatoes, etc., before they were planted. If they failed to make such contracts, there would be danger of inability to operate the canneries on a paying basis. Long before the tomato crop is in blossom the canneries have sold their pack to the jobbers and the jobbers in turn to the retailers. The contract price for tomatoes is fixed through the knowledge of the grower and the canner of the cost of producing the preceding crop under existing labor conditions.

Men and firms of large capital who term themselves grain buyers and bean buyers should be willing to do the same thing. They do not do so now for the reason that the world supply and demand affect the prices, and they are unwilling to share the risk which the farmer is asked to shoulder alone.

CONTRACTS SHOULD BE INSURED BY A BOND.

In the past, where contracts have been made, the farmer has had lit-

tle protection, for a bond insuring the fulfillment of the contract has not been forthcoming. The concern that contracts for farm products should give a bond just as a contractor does who agrees to put up a building for a certain fixed sum. If farmers had a contract price for their crops before they were grown, there would be less difference in price at different seasons.

This government recently loaned money to the allies with the stipulation that it be spent in this country. The ink was hardly dry on Secretary McAdoo's check before the allies commenced buying wheat. Our millers did not wish to find themselves short of wheat, so bid against the allies' buyers. Just as in a live-stock auction ring, the price jumped, yet the intrinsic value of the wheat did not increase. It would go no further in feeding people than before. The money voted the allies did not purchase as much food as it was intended, and the profits which accrued went to a few. How much better would it be for the country as a whole if the farmers were assured a price sufficient to enable them to properly house, feed and pay their labor. And for the consumer, if such gambling with the "staff of life" were made impossible by being unprofitable.

BOTH MAXIMUM AND MINIMUM PRICES.

If contract prices for foodstuffs are not made before crops are harvested, farmers will hesitate to compete with other industries for their labor. If they do not pay wages which will compete, they will suffer from a shortage of labor.

Those men who have bought staples directly from the farmers in the past must come to his rescue at this critical time and contract for his crop on a basis which he can afford to compete with other industries for his labor.

An opportunity presents itself to place agriculture on a stable, economic and financial basis through the fixing of prices before the crops are grown. Gradually our farm labor problem will be automatically solved. Our rural population will take on a new and healthy appearance. Land values will become stabilized. Farm lands, the best part of California, will be preserved for Americans, and the wild cry for more unassimilative peon labor by well-intentioned but thoughtless people will be silenced.

The young and tender seed pods of some varieties of radishes are sometimes used for pickling like capers; in fact, the Madras or rattail radish is grown exclusively for its pods, which are eaten cooked and also used in pickle making.—United States Department of Agriculture.

The green tops of young onions and leeks cooked as greens are excellent.



Life is too short to pull or burn stumps

With \$5 worth of either of the Giant Farm Powders one man can remove more stumps in five hours than he could pull or burn out in as many days. And a boy with a team can clean up the pieces in another five hours. There's no way in which land can be cleared so easily, quickly and cheaply as by using one of the

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If you have not read the illustrated Giant books, "Better Stump Removing," "Better Orchard Tillage," "Better Boulder Breaking," "Better Farm Tillage," and "Better Ditch Making," send for them now. You will find them worth many dollars to you. Mark in the coupon the books that you prefer and mail it today.

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The Cunningham Land Roller and Pulverizer

Makes a Perfect Seed Bed—Stops Evaporation—Preserves Moisture—The Best Clod Crusher ever made for Farmer, Orchardist, Vineyardist, Nurseryman and Seedsman—

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160 ACRE FARMS IN WESTERN CANADA FREE

Canada's Liberal Offer of Wheat Land to Settlers

is open to you—to every farmer or farmer's son who is anxious to establish for himself a happy home and prosperity. Canada's hearty invitation this year is more attractive than ever. Wheat is much higher but her fertile farm land just as cheap, and in the provinces of Manitoba, Saskatchewan and Alberta 160 Acre Homesteads Are Actually Free to Settlers and Other Land Sold at from \$15 to \$20 Per Acre.

The great demand for Canadian Wheat will keep up the price. Where a farmer can get over \$2 for wheat and raise 20 to 45 bushels to the acre he is bound to make money—that's what you can expect in Western Canada. Wonderful yields also of Oats, Barley and Flax. Mixed Farming in Western Canada is fully as profitable an industry as grain raising. The excellent grasses, full of nutrition, are the only food required either for beef or dairy purposes. Good schools, churches, markets convenient, climate excellent. There is now an unusual demand for farm laborers to replace the many young men who have volunteered for service in the war. Write for literature and particulars as to reduced railway rates to Supt. of Immigration, Ottawa, Can., or to GILBERT ROCHE, Canadian Government Exhibit, San Diego, Cal. Canadian Gov't Agt.

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Built Especially for California Conditions

THE FARQUHAR VIBRATOR SEPARATOR

Guaranteed by "The House of ARNOTT" Ask The Grower Who Owns One Write for Folder, Specifications, Prices Etc.

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BEAN THRESHING HEADQUARTERS
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THE TWO STANDARDS

Past the Experimental Stage Eleven different models, with or without Engine, mounted complete

Ranging in Price from \$210 to \$1,000
—All Repair Parts Carried

ARNOTT & CO.
"THE AMERICAN"

General Agricultural Review

Field Crops.

Alfalfa loose is selling for \$15 a ton in the vicinity of Pomona.

Nearly 700 acres of tomatoes will be planted this year by farmers of Tulare county.

George W. Lane of Morganhill says he has no Sudan grass seed whatever for sale.

Blackeye and tepary beans are coming along good in the Pomona district.

Estimates indicate that the joint crops of cantaloupes in the Imperial Valley and Turlock sections will total 152,235,000 melons, or 9,950 cars.

The average condition of winter wheat on May 1 was 73.2, compared with 63.4 on April 1, 32.4 on May 1, 1916, and 86.6, the average for the past ten years on May 1.

The Stockton Chamber of Commerce voted 94 to 69 in favor of importing Oriental coolie labor to the United States, in an effort to solve the farm labor problem.

Best grain prospects in years are reported by C. A. Duncan of the Tudor district, Sutter county. One wheat crop looks like 10 sacks per acre; another like 12 to 15 sacks.

Cold nights and hard winds last week damaged growing crops in the lower San Joaquin, such as beans, sugar beets and cantaloupes. Some reports place the damage at fully 25 per cent.

I. S. Hurst, a potash man of Los Angeles, says the desert cacti contains 15 per cent of chemically pure potash—a higher percentage than is yielded by kelp, which undergoes a more expensive harvesting and drying process.

An application has been filed with the State Railroad Commission on behalf of all the railroads in the State for a general increase of 15 per cent in all intra-state freight rates without exception, including both class and commodity.

State Horticultural Commissioner George H. Hecke has issued a call to each of the 47 county horticultural commissioners of California to attend a conference at Modesto, June 6 and 7, to discuss California's \$150,000,000 fruit crop.

Deciduous Fruits and Nuts.

Twenty-five crates of little apricots were shipped East May 18 by the California Fruit Distributors.

In Hemet peaches are being contracted at \$50 a ton and apricots at \$45 to \$50.

Peaches and apricots in the Pomona district will average 90 per cent of a crop.

Tragedy plums are a heavy crop in the East Biggs section of Butte county.

The apricot crop around Calexico is good. Shipments have commenced and it is said 12,000 crates will be shipped during the season.

During the past two years the prune production and trade of Bosnia has suffered seriously on account of the war.

Reliable reports from several important districts of eastern Sicily are to the effect that present indications point to an almond crop only one-third as large as that of 1916.

The San Leandro cherry crop this season will not exceed 25 per cent of a full crop. Lack of pollenization is suspected to be the cause, but it has not been so demonstrated.

Seven cents a pound is offered at Graton, Sonoma county, for Royal Anne cherries. Those grown in that section have a good name for size and quality.

It is reported that a 90 per cent prune crop is expected in Santa Clara county. A 60 per cent apricot crop and a 45 per cent cherry crop is also expected. The pear crop will be very large this year.

W. A. Bumwardner of Pomona has signed up with the Pomona valley cannery for "cots" at \$50 a ton and Tustin cling peaches at \$45. Free-stones are selling for considerably lower.

The prune growers of Sonoma county are opposed to allowing the price of prunes to go above a 7-cent basis. It is said they desire to build up a strong demand which will keep the price as nearly stationary as possible at a reasonable profit.

Merced's olive, peach, pear and plum orchards this year give promise of a 100 per cent crop, while apricots give evidence of measuring but 60 per cent of the normal yield, and almonds 75 per cent.

An increase in wages of 2½ cents an hour has been announced by the California Associated Raisin Company in all of its plants and by the California Peach Growers, Inc., in its Fresno plant. Men receiving 22½ cents an hour will get 25 cents, while those getting 25 cents have been raised to 27½ cents.

J. J. Fox, for several years Horticultural Commissioner of Napa county, resigned his position this week to accept work with the Government Land Bank at Berkeley. Mr. Fox was one of the set of hard-working commissioners and made good, and Napa county farmers were sorry to see him leave.

R. W. Skinner of Yuba City on May 18 took to Horticultural Commissioner H. P. Stabler's office half a dozen cherry, plum and prune branches which had no fruit because they had been encased in mosquito netting, though the rest of the orchard is loaded. The story will appear soon in Pacific Rural Press.

Citrus and Semi-Tropical.

Picking of the Valencia orange crop in the Lindsay district will start about June 10.

The first figs of the season of 1917 season was received in Los Angeles last week from the Coachella valley. They were sold at \$1.00 per pound.

A car of Valencia oranges were sold at Azusa last week for \$2.50 for shipment to Alaska. This is the first sale of Valencias by the A. C. G. Exchange packing houses this season.

M. W. Tilden of Arlington, Cal., has just set out 245 Placentia walnut trees, 175 late Valencia, 120 Marsh seedling grapefruit, and 30 miscellaneous deciduous fruit trees.

The Banning Almond Growers' Association is preparing for a big crop of almonds this year. Last year's crop was 325 tons and this year's crop, it is thought, will be larger.

The first full car of olives packed by the Lindsay Olive Company to be shipped from Lindsay left May 15. The car contained 1,200 cases of 24 cans to the case.

J. W. McClymonds, vice-president and general manager of the Pacific Fruit Express, estimates that the California orange crop will be 10 per cent greater than last year. About 50,000 cars of citrus fruit will be handled this year, of which 2,700 cars already have been shipped.

The packing houses included in the A. C. G. Exchange at Azusa estimate that they will handle 1,500 cars of Valencias this season with a net return to the growers of about \$900,000. Shipments for the navel season just closed reached 2,000 cars and netted the growers \$1,000,000.

Shipments of oranges through the California Fruit Growers' Exchange from the Covina valley for the season so far have been 367,107 boxes. In cars the shipments have been 850 cars against 576 cars last year. It is said that the Exchange has 4,000 boxes of miscellaneous fruit still to ship which will bring the total up to 371,107 boxes for the winter season.

It is announced from Redlands that the fruit growers of Southern Califor-



KILLEFER
QUALITY

Model Bean Cultivator



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EFFICIENCY



This Cultivator, like most of our implements, has been developed at the request of Dealers and Ranchers for a strong, simply controlled cultivator, capable of doing their work deeper and better than possible with the light Eastern-made tools. The frame is one piece of high carbon steel without joints to work loose or sag and holds the wheels always true and in line with the rest of the machine. The double frame bar gives ample clearance between the standards and eliminates the tendency to clog in trashy ground. This frame bar has a double lifting device which holds it rigidly on both sides. A man's weight on the extreme end will not spring it out of line. The seat is set far enough back to give an unobstructed view of the rows and the foot control is very easy on the driver.

An important item for the Bean Growers' consideration is that all parts and repairs are easily and quickly obtained without the delay of sending East for them.

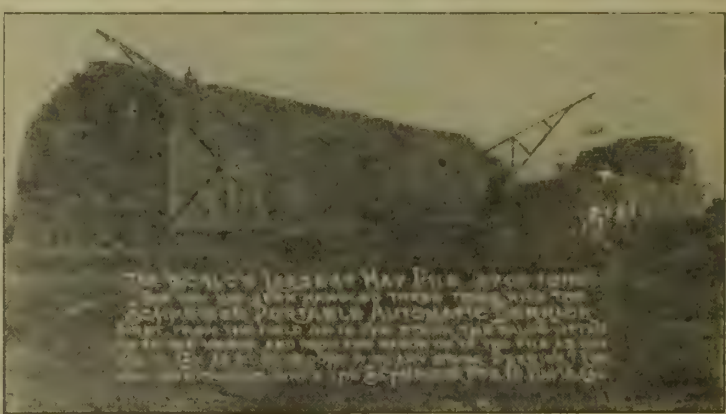
Place Your Order Early

There will be a shortage in the supply of
BEAN Tools this year.

The Killefer Manufacturing Co.

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If you are paying more than 35c per ton for stacking your hay, you are losing money. You can stack it for less than that if you use the

SCHMEISER IMPROVED PORTABLE AUTOMATIC DERRICK,

"The World's Greatest Hay Stacker,"

Stacks hay baled or loose, Saves Labor, Saves Time, Saves Money. More Schmeiser Portable Automatic Derricks are sold on the Pacific Coast than all other hay stackers combined. The reason is:

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Sure Pop Almond Huller and Separator, 5 sizes; McGarvin Fruit and Olive Graders, any size; Schandoney & Harrington Equalizing Hitches, any size; Diamond Special Harrows, Baker Clips, Clevises; Schmeiser Alfalfa Land Leveler and Checker, and

SCHMEISER IMPROVED PORTABLE AUTOMATIC DERRICK.

nia are feeling the effects of the agitation for a maximum food production and conservation of the food supply for war use, for orange prices have gone down steadily the past few weeks in the face of much smaller amount of fruit being marketed. Oranges are selling lower now than this time last year and it is said the only reason is the effect of the world famine talk on the people back East.

Sutter county fruit crop conditions are reported by Horticultural Commissioner Stabler as follows: Grapes about three-fourths of a crop on account of frost. Peaches hurt by frost but the same tonnage in prospect as last year, due to young orchards coming into bearing. The Tuscans and Johnson clings in best shape. Prunes probably as heavy as last year, 95 per cent of normal. Almonds very spotted, but perhaps 75 per cent of total crop. Pears better than last year. Apples good, but only few grown. Cherries, a very good crop.

Grapes.

A big steam raisin drying plant is projected for Sutter county.

It is reported that the California grape yield promises to be much heavier this year than last.

Look for the story of advantages and construction of concrete sulphur houses in an early issue of Pacific Rural Press.

The California Associated Raisin Company was recently granted judgment for the collection of \$400 damages against a Fresno grower, who failed to make good on a raisin delivery contract for the 1916 crop.

The Fresno Chamber of Commerce says that the Eastern men are contracting for dried grapes at 3½ cents per pound to be used for sugar making. This is equivalent to \$14 to \$15 per ton for green grapes.

A number of fruit growers around Santa Paula have signed up their apricots at \$60 per ton for green fruit. Ordinary years the price ran about \$20 per ton. On this basis the price of dried fruit would be 18 cents per pound.

Taxes on California wines in the war revenue bill places a tax of 6 cents per gallon on dry wines, 20 cents per gallon on sweet wines and 20 cents on brandy used in fortifying wines. This is an increase of 100 per cent on sweet wines and brandy, and 50 per cent on dry wines.

Miscellaneous.

Imperial Valley farmers are mobilizing men, material and cars to ship 5,900 carloads of cantaloupes, the largest crop on record, out of the valley during this season.

The level of prices paid producers of the United States for the principal crops increased about 24.6 per cent during April. On May 1 the index figure of prices was about 95.8 per cent higher than a year ago, 87.1 per cent higher than two years ago, and 104.5 per cent higher than the average of the past nine years on May 1.

About 150 delegates, representing organizations of agriculturists and horticulturists of about two-thirds of the State, met at the headquarters of the California Fruit Growers' Exchange in Los Angeles last week and made a survey of the labor situation of the State. Reports indicated that there is a shortage of 10,000 laborers in the State.

Young Boys to Help Harvest Fruit.

The idea originating with Frank Swett, of having the young boys of the town schools organized to help in the fruit harvest, as printed in our columns recently, is to be put into practice in Contra Costa county. A camp is to be established near Walnut Creek, with facilities for handling about 70 boys, aged from 12 to 15 years, under the superintendence of a Boy Scout master. The camp is to be ready the latter part of June, and the expense of establishing it will be borne by George Rolph, superintendent of the California-Hawaiian Sugar Refinery at Crockett. Farmers near Walnut Creek may hire the boys for work during the day, but the lads are to return to the camp each evening.

THESE FARMERS WERE NOT MUFFLED MUCH.

[Written for Pacific Rural Press.]

The most representative meeting of farmers, the fullest and freest discussion of urgent farm problems by farmers only, was held in San Francisco May 21 and 22. It was called by the Agricultural Committee of the California Development Board under the guarantee of \$15,000 by the California Wholesale Grocers' Association to pay expenses of delegates, convention hall, etc. The committee named a leading farmer from each county in California as delegate to the convention, and 52 of these counties were represented. Discussion by delegates was spirited and general after the reading of each paper. Subjects discussed were: Practical Plans for Increasing the Agricultural Output of the State; Emergency Money at Low Rates for the Farmer During War Times; The Farm Labor Problem, Wages, Housing, the Effect of Liquor; and Manipulation of and Speculation in Food Products.

Resolutions adopted as summarized below, represented the sense of the farmers present quite fairly, though the labor resolution called out much discussion and the part relating to liquor was not put nearly so strongly as a large majority of those present felt, in view of the waste of over 100,000,000 bushels of foodstuffs used in liquor while the President is calling on the farmers to strain their prudence in producing more, and in view of the effect of liquor on the efficiency of the little farm labor we now have.

RESOLUTIONS APPROVED.

Present emergency warrants Government extending emergency credit to farmers at low rates and with extension of payment in case of crop failure, etc.

Government should guarantee minimum prices to farmers during war, to justify unusual production.

Legislation to eliminate hoarding food products, speculation in their prices, and manipulation of same.

Pure seed law modeled after pure food law.

This not the time to try new and uncertain crops and processes.

Farmers should increase quality and number of livestock and poultry.

Special effort to prevent injury to crops and animals by disease and pests.

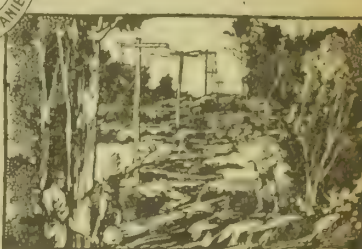
One or more practical farmers should be included in National Council of Defense.

Try to make available labor supply the demand, and then get enough Oriental labor to meet requirements. (No provision for deportation at end of war.)

Information bureau needed at State Market Director's office where producers and consumers could register wants, prices, etc.

"We strongly recommend the National Government to forbid the use of grains in the production of whiskey and other distilled spirits (not including beer); and we look upon the saloon as a distinct menace to the production of food."

Chairman of Convention D. O. Lively authorized to appoint committee of 11, including himself, a member from the Development Board, a member from the Wholesale Grocers' Association, and eight operating farmers to carry out the purposes of the Convention. (Present delegates discontinued.)



Meeting the Universal Need

In the high passes of the mountains, accessible only to the daring pioneer and the sure-footed burro, there are telephone linemen stringing wires.

Vast telephone extensions are progressing simultaneously in the waste places as well as in the thickly populated communities.

Across bays or rivers a flat-bottomed boat is used to unreel the message-bearing cables and lay them beneath the water.

These betterments are ceaseless and they are voluntary, requiring the expenditure of almost superhuman imagination, energy and large capital.

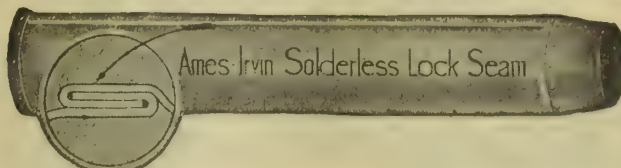
Over the sand-blown, treeless desert a truck train plows its way with telephone material and supplies.

In the Bell organization, besides the army of manual toilers, there is an army of experts, including almost the entire gamut of human labors. These men, scientific and practical, are constantly inventing means for supplying the numberless new demands of the telephone using public.

Through dense forests linemen are felling trees and cutting a swath for lines of wire-laden poles.

AMERICAN TELEPHONE AND TELEGRAPH COMPANY
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One Policy One System Universal Service

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Owing to conditions existing in the iron market and also to weather conditions, we suggest you order early.

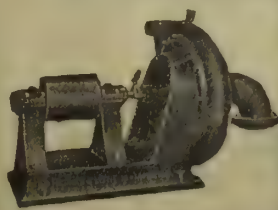
AMES IRVIN IRRIGATED PIPE.

We have a complete stock, and can make immediate delivery. AMES IRVIN PIPE is solid and strong, with no holes in steel. Each sheet is edged-locked together, and then set down under 3500 pounds pressure. Such seams will not break or leak. Send for booklet giving complete information about Irrigation Pipe and its construction. Get it today.

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Mechanical Power on the Farm

Users of tractors, engines, pumping plants, motor trucks, automobiles, electric motors, and other mechanical farm power are invited to make this department an exchange of their experiences and troubles.

PUMPING OUTFIT PAID FOR ITSELF IN A YEAR.

[Written for Pacific Rural Press.]

Last year's increased prune crop on two acres paid for the motor, pump, well and electric power that increased the crop, and the labor of leveling and irrigation was done at odd hours. This is the experience of Samuel Fox of Tehama county, who was several years opposed to the "unnecessary" cost of an outfit and labor of irrigation. He was converted all through when last year's crop came on, and this year he is enthusiastic over the heavy crop set on the irrigated trees, "a great deal heavier than last year."

This two acres is part of four acres of prunes which had been yielding less than \$400 per year on account of drouth. Two acres are being leveled as time permits. These did not get water last year in any satisfactory fashion, and this year's crop is very noticeably lighter than on the other two acres. On the un-irrigated part half of the prunes dropped last year after the hot spell which affected most of the orchards in this district likewise. Practically none dropped on the irrigated part.

"I am positive," says Mr. Fox, "that I couldn't have sold over \$400 worth of prunes from the four acres last year if I hadn't had water. I did sell \$715.64 worth due to the increase on the two acres."

The pump and motor cost about \$150. The well cost about \$120, being about 80 feet deep. The power bill was around \$50. The concrete box and about 50 feet of concrete flume took eight sacks of cement. Gravel was taken from the creek a few feet away. The outfit cost only a little over \$320. The increased

crop was at least \$335. The four-inch pump is now installed free of cost and it will irrigate everything within reach, at a still lower cost for power because rates have decreased.

The pump was installed because the trees were dying for lack of summer moisture a year ago last fall. Fall well digging gave assurance that the water supply found would last all summer. Test with a bigger pump than the one used showed that the supply was inexhaustible. Mr. Fox's son leveled, leveled and irrigated about three-fourths of an acre in a day. Someone in the family last summer would turn on the power late in the afternoon. Mr. Fox would see if it was all right about 6:30 and would shut it off later. The time spent in irrigation was negligible. The two acres were irrigated again after the crop was off. That is why, thinks Mr. Fox, that the trees have such a heavy crop set now.

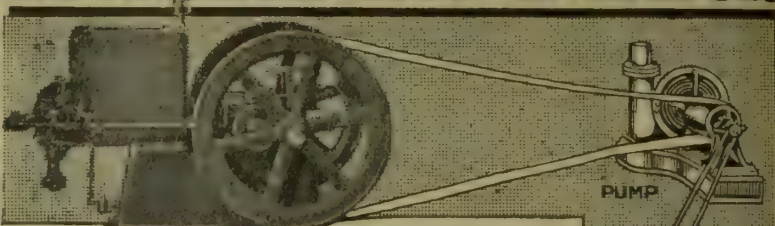
POWER NOTES.

The difference between the cost of keeping horses and automobiles, auto trucks, etc., has been constantly decreasing due to high feed prices and scarcity of horses.

Imperial County Farm Adviser P. I. Dougherty announces that he has on file for use of members of the Farm Bureau complete blueprints for power attachment to be used on Ford cars.

If time and horse flesh are of value on the farms this season, no one who can get an auto truck will drive a farm team slowly to town with a comparatively small load. Farmers are buying more trucks, or truck equipment for automobiles, than ever before.

LET THIS ENGINE REDUCE YOUR HIGH COST OF LABOR



The only way for a farmer to keep up with the always increasing cost of doing business, is to take advantage of the many MECHANICAL AIDS now provided for his benefit. In fact, no farmer who wants to do the most work in the most economical way can afford to be without a

FULLER & JOHNSON TYPE "N" GASOLINE ENGINE

To supply CHEAP POWER for operating an Alfalfa Cutter, Cream Separator, Churn, Corn Sheller, Electric Dynamo, Feed Grinder, Grind Stone, Ice Cream Freezer, PUMP, Spray Pump, Washing Machine, Wood Saw, or ANY FARM MACHINE equipped for power-drive this engine is a NECESSITY.

THE FULLER & JOHNSON TYPE "N" ENGINE is different from most engines. 1st—it is the product of 13 years of business and manufacturing experience, backed up with a world-wide reputation for QUALITY; 2nd—it is made in modern shops equipped with the finest machinery, by unusually high-class mechanics; 3rd—IT COMBINES THE GOOD POINTS OF HIGH PRICE ENGINES IN DESIGN, MATERIALS AND WORKMANSHIP—all the latest improvements—yet sells for a surprisingly low price; 4th—It is very, very simple, has few parts, is easy to start and run—by anyone; 5th—It has only one-fourth the weight of engines made from antiquated patterns—an. is more easily portable; 6th—It has "make-and-break" ignition, a "hit-and-miss" governor that keeps its speed constant and permits it to use very little fuel; 7th—It operates on the superior 4 cycle principle and cools itself perfectly; 8th—It runs equally well on gasoline or engine distillate.

The work the different sizes of this wonderful engine will do for you and the amount of money it will save will surprise you. You CAN'T AFFORD to be without it.

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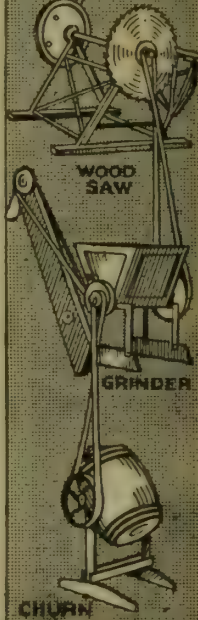
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Send me full information about your Fuller & Johnson Type "N" Engine at once.

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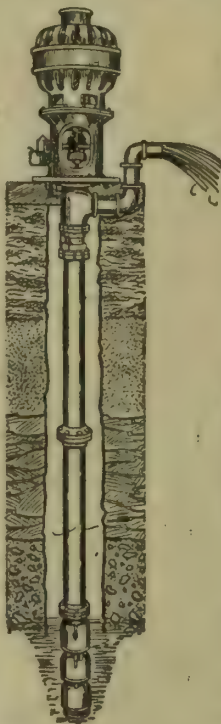
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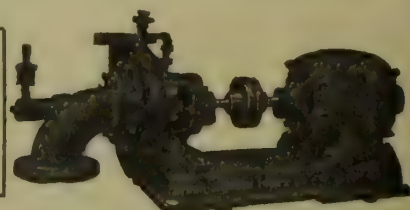
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No valves to pack or plunger to get out of order. For use in any well ten inches in diameter or over.

A complete line of irrigating pumps of all descriptions, horizontal, and vertical for belt drive or direct connection to electric motor.



Prices as low as are consistent with good quality and workmanship.



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LOS ANGELES, STOCKTON, VISALIA

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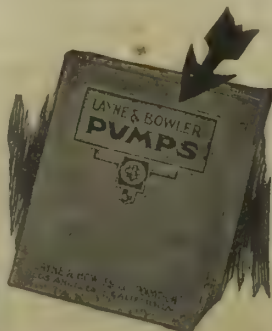


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The KROGH Vertical Pumps



New Type Vertical

Are automatically water balanced and require no adjustment of any kind. All weights of shafting and rotating parts are carried on the water film absolutely without the use of thrust bearings or adjustment of any kind.

No BALANCE RINGS or PLATES in KROGH PUMPS. They are unnecessary, and mean only continual trouble. KROGH PUMPS with the least number of parts means less friction and greater efficiency. Get our Bulletin No. 78 before deciding on a pump.



Krogh Manufacturing Co.
SAN FRANCISCO. LOS ANGELES.

FARMERS' MACHINERY SCARCE.

Members of the special committee appointed by the National Implement and Vehicle Association to co-operate with the Federal Government in the movement to increase this country's food production met in Chicago May 18 and issued a statement calling attention to the fact that the success of the campaign will be seriously jeopardized because of a shortage of farm implements and to the inability of implement manufacturers to obtain but 75 per cent of the sheet metal needed to supply the normal demand of the farmers.

Attention is called to the fact that the farm implement manufacturers have practically no stock on hand, and that thousands of farmers in recent years have allowed their equipment to deteriorate to such an extent that many implements cannot be used this year without repairs.

The implement manufacturers declare they were compelled to appeal to the Federal Government recently in order to obtain 75 per cent of their normal annual supply.

Reports show that a great shortage in farm implements prevails. All factories making tractor ploughs are unable to meet the requirements of their trade. The corn acreage has been decreased by the shortage of listers, the tool necessary to plant corn in fall wheat fields. A shortage of regular corn planters is also imminent. This is occasioned by inability to secure raw material, particularly iron and steel products.

"The production of implements has been less than normal since 1913. Tools in the hands of farmers are more nearly worn out than ever before. Dealers' and manufacturers stocks are reduced. The increased food requirements mean increased acreage and more than the normal supply of implements is necessary if the situation is met. This condition is accentuated by a shortage of labor on the farms and necessity for increasing the proportion done with machinery. Implement manufacturers are making every endeavor to increase their production, but are actually faced with a decreased production because of their inability to get material.

"There are manufactured and sold to farmers in this country yearly approximately 100,000 harvesters and binders. A harvester and binder averages to cut fifty acres of wheat would result in decreasing the farmers' harvesting ability 1,250,000 acres. Allowing for the acreage production indicated by the Government in 1915 crop analysis of 16.9 bushels per acre, we would have a loss of 21,125,000 bushels."

KEEP THE PUMPS WORKING.

Owners of irrigation pumping plants throughout California are in a position to add greatly to the production of food supplies for the allies by selling water to their neighbors at a reasonable cost during such times as their pumps are not needed for their own irrigation, says the College of Agriculture of the University of California, after a thorough survey of the irrigation resources of the State.

An emergency law just passed by

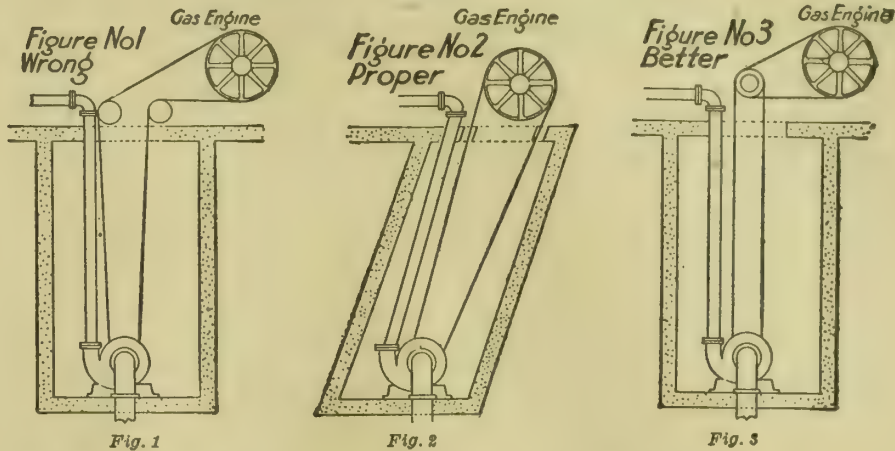
the Legislature permits individuals to dispose of water without becoming public utilities and without incurring an obligation to continue to supply water in the future.

The committee on resources and food supply of the State Council of

Defense urges owners of land near pumping plants to make the charges to their neighbors as low as possible, in order to stimulate the continuous use of pumping plants throughout the irrigation season during the war period.

"It is better to spend 50 cents for oil than \$50 for a new part," says an agricultural experiment station writer. He might have added, "50 hours of lost time (more or less), 50 per cent loss of self-respect, and sometimes 100% loss of tranquility."

The Right Belt Way or The Wrong Belt Way



THESE sketches are used to illustrate an actual case. The user of the belt illustrated in Fig. 1 wrote us about his belt troubles. We suggested the arrangement as in Fig. 2. He was unable to carry out our suggestion, but did arrange it as in Fig. 3, with good results.

Test Special Belts

Do you have belt troubles? Do you get 100% efficiency out of your belt? Does it do all you expected of it? Does it separate in the plies and go to pieces?

We are belt engineers. We have been in the belt manufacturing business for nearly three-quarters of a century! We know by experience how to adjust belt difficulties, how to advise and help belt users.

All you have to do to obtain our help is to write us as fully as possible, giving a rough drawing, if convenient, telling what seems to stand in the way of satisfactory results.

We will cheerfully aid you in solving your problems to the best of our ability, without charge.

Write us about belts.

TEST SPECIAL belts are guaranteed to give satisfaction, or we'll make good on any proportionate basis that may be to your entire satisfaction.

That's the only way to buy a belt—that's the only kind of a guarantee that is worth having—you are the judge—it must be to your entire satisfaction.



WHEN you go to buy a belt, ask the dealer to cut off a strip an inch wide. Separate the plies with a knife as in Fig. 4.

WHEN endeavor to pull the plies apart, as in Fig. 5. If the plies can be pulled apart easily, it is a poor belt and not worth the price.

Fill Out This Coupon—Mail It TODAY

New York Belting and Packing Co.
519 Mission St., San Francisco —Dept. A-1
Send me samples of Belting that you will guarantee to give satisfactory service on my work and quote prices delivered at

.....Station.

Horse Power	Diameter in Inches
{ Elec. Motor.....	{ Driving Pulley.....
{ Steam Engine.....	{ Driven Pulley.....
{ Gas Engine.....	

Kind of Drive

Cross.....

Straight.....

Perpendicular.....

Width of Belt..... Ply.....

Distance between centers of Pulleys.....

Rev. per minute of Driving Pulley.....

Kind of Machinery Driven.....

My dealer's name.....

My name.....

Address.....

A pocket memo, booklet giving speed and power tables will be sent FREE to all who mail this coupon.

New York Belting and Packing Company
519 Mission Street :: San Francisco

Home Office: New York City. Branches in all principal cities

How Cows Pay for Ranch

[Written for Pacific Rural Press.]

The mistake new settlers often make is to pay all their capital on the land or improvements, not reserving enough to live on until a crop or two assure their living. Manuel Veter paid part of his ready money on 55 acres of river bottom in Tehama county about five years ago. But he needed an immediate income; so with most of his remaining money, he bought 18 or 20 cows. It has kept him and his wife busy without other help; but in the five years since then the herd has increased to about 50 cows and 25 or 30 calves and yearlings. A big hay and milking barn has been built, 27 acres put into alfalfa, and all but \$2,800 paid on the place which he now values at \$200 per acre. He has cleared eight or 10 acres from the wooded pasture for alfalfa, and is able to sell about 75 tiers of stovewood (8 by 4 feet, 16 inches long). Three bulls from the Vina ranch have been used and another is to be bought at their sale June 5, 6, and 7. Five bull calves were recently sold for veal. Seven cows have been sold when Mr. Veter needed ready money. No alfalfa has been taken off the place except a surplus of 30 tons last year. High grade hogs have been kept to use the skim milk, etc.; and a lot of them have been turned into money. Aside from this, Mr. Veter's income has been the regular cream check, which is about \$300 per month at this writing. Chickens have supplied the family poultry and eggs, while several hogs a year have supplied meat, lard, etc.

"If I had built a nice house with my first capital, I couldn't have bought stock," says he. "And if I had built a house since then I would have had to sell stock to pay for it. But now I am getting too old to care for so many cows," and may be it is time to build the home he and his wife have worked for so hard.

Experience With Concrete Stave Silos

[Written for Pacific Rural Press.]

A concrete stave silo erected last fall by M. L. Appleton of Stanislaus county kept his corn silage in perfect condition all winter and provided him with a supplement for alfalfa hay in his dairy cow ration.

Mr. Appleton used concrete silos in the East before coming to California and did not believe the wooden types would give permanent service, and as the solid types of concrete silos were rather expensive he selected a patented concrete stave that cost \$12 a foot erected, for the 12-foot diameter size.

The staves are two feet long, 10 inches wide and two inches thick, having a tongue on one side and a groove on the other similar to tongue and groove lumber. These staves are set on end, the joints of each course

being made tight by flat steel bands or hoops which encircle the silo and which is tightened at the ends by threads and nuts.

The entire structure rests on an 18-inch concrete foundation, but no floor was laid, the silage resting on sandy soil in the bottom. After completion the entire inside surface was gone over with a cement plaster which filled up all cracks and crevices, making it air-tight, as is indicated by an entire lack of leakage during the winter.

Last year Mr. Appleton filled his silo September 15 with Indian corn, but this spring he expected to silo a crop of barley while it was still green and follow with his corn crop, believing that in this manner he could better ripen his corn before danger of fall frosts.

Using Silage for a Dual Purpose

[Written for Pacific Rural Press.]

"If I didn't have silage I would go out of the dairy business." Such is the contention of J. W. Scott of Stanislaus county, who has one of the best herds of grade Jerseys in that part of the State and who is a careful observer of feeds and feeding.

Mr. Scott doesn't believe that the only advantage of silage is in its ability to balance an alfalfa hay ration, although he says that in physical condition alone the cows fed silage are enough better to warrant its use. But purely as a good farming measure silage is of great value to Mr. Scott because it allows him to harvest an immense amount of succulent feed from land which he wishes to rotate for alfalfa.

As an indication of how this works out in practice, he told us of his experience with three acres of old alfalfa last year that he cut three times before plowing up in mid-summer.

After irrigating and thorough and deep plowing and cultivation so that the seed bed was in "garden soil" condition he planted Orange County Prolific corn about July 10. At siloing time, late in the fall this piece of land produced an average of 17 tons of green forage to the acre which was sufficient to fill his silo.

In growing silage corn Mr. Scott finds that acclimated seed not only puts forth a better growth but that it is not bothered nearly so much by the corn ear worm as seed just recently imported from the East.



"It's Always at Home Sunday Evenings—

that's one of the good features of the EMPIRE Milking Machine," writes Mr. W. F. McCord, Iowa Falls, Iowa.

Were you ever inconvenienced by the absence of the hired man?—or of several hired men? Then how much worse if, on account of the existing shortage of hired help, you found yourself permanently short-handed. To prevent such a possibility, if for no other reason, you need



But there are other reasons: EMPIRE Milking Machines will save their entire cost in a short time by saving wages; almost invariably they increase the milk flow; they will enable your help to spend more hours per day in the field—and to have more leisure; they mean satisfied help.

EMPIRE Milking Machines are simple and efficient—gentle and natural in their action, and above all, they milk the SAME WAY EVERY DAY, more uniformly than even the calf. They safeguard the condition of valuable cows.

Let us tell you ALL the benefits they offer you. Write for Catalog 45—and ask also about EMPIRE Cream Separators, Gasoline Engines and Electric Plants.

EMPIRE CREAM SEPARATOR COMPANY

Bloomfield, New Jersey

Chicago—Denver—Portland, Ore., Montreal—Toronto—Winnipeg, Canada

Real HOLSTEIN Quality At Your Own Price

Our offering at the sale at Sacramento, Cal., May 31, 1917, consists of 10 highly bred females and 2 bulls.

One heifer whose first four dams average 34½ lbs. butter in 7 days, sire Spring Farm Pontiac Cornucopia, whose dam was the first 44 lb. cow, her dam a 31.70 lb. cow in our herd, who was sired by a brother to the twice 44 lb. cow Ormsby Jane Segis Aaggie.

A daughter of King Korndyke Sadie Vale, whose daughters are making such high records; her dam an own grand-daughter of Pontiac Korndyke, also De Kol 2nd Butter Boy 3d, both great transmitting sires.

A daughter of King Segis Pontiac, he being the best bred son of the great King Segis; her dam traces direct to Hengerveld*De Kol and Pontiac Korndyke.

Seven other heifers equally well bred. Most of these heifers are bred to our herd sire, King Segis Alcartra Abbekerk, whose first eight dams average 30 lbs. butter in 7 days.

The two bulls offered are both fine individuals and highly bred. One whose first six dams average 28½ lbs. butter in 7 days, sire Prince Gelsche Walker.

One a show bull whose dam has a 28 lb. 3-year-old record, with a good prospect for a much larger record; son of a 36 lb. bull.

ALL CAREFULLY SELECTED FROM OUR HERD
OF 125 HEAD.

Bridgford Company

Knightsen, Contra Costa Co.,

California

RAISE YOUR CALVES ON—

Rydes Cream
RICHES SUBSTITUTED



THE MILK IT SAVES SELLS FOR 3 TIMES ITS COST

GREAT WESTERN MILLS
WESTERN DISTRIBUTORS
Dept. B, Desk 2
LOS ANGELES, CAL.

DAIRY COWS

REGISTERED BEEF BULLS
PUREBRED HOGS
Large or small lots. Any order executed.
GEO. P. ROBINSON CO.
426 J Street.
Travelers Hotel Building, Sacramento.
LIVESTOCK BROKERS

Why it pays to

SALT YOUR HAY DOWN

When You Stack
It or Bale It—
BECAUSE—

It prevents musting

—checks the growth of molds when the moisture content is high.

Improves the feed

—cattle thrive on salted hay and they like its taste. Stock will eat it up clean, where unsalted hay will be mused over and wasted.

Increases the Milk

—makes the cows thirsty and they drink more water and produce more milk. Leading dairymen use salted alfalfa hay the year round for feeding their dairy cows.

Really Costs Nothing

—the salt more than pays for itself in the weight of the hay—holds the moisture, makes 5 tons equal 6.

20 Pounds of
Salt to Each
Ton of Hay

—that's the proportion. And the method is very simple. Stack three feet of hay, sprinkle the salt over by hand; then another layer of hay, more salt and so on.

Try It
This Year!

FEEDING FETERITA SILAGE.

[Written for Pacific Rural Press.]

After harvesting a heavy crop of oat hay on the sub-irrigated sandy soil on the M. M. Holdridge ranch in Stanislaus county last year, the land was seeded to feterita and cultivated three times after planting. It was also irrigated once when it was about a foot high and with this culture it made stalks as high as 14 feet.

A great deal of it was fed to the registered Holsteins in the green form as it was cut in the field, and they liked it fine, but all of it could not be consumed in this manner so a silo was erected with a capacity of 90 tons and the balance of it siloed.

During the past winter it has been fed twice a day to the milk cows in connection with two feeds of alfalfa hay and the same number of feeds of oat hay per day. While it was not quite so satisfactory as Indian corn silage, the cattle relished it and milked well on it, and in view of the immense tonnage that was secured it was considered highly profitable.

BREEDING AND CALVING RECORDS.

[Written for Pacific Rural Press.]

A simple but convenient way of keeping records of breeding and calving dates with grade dairy cows is in operation on the ranch of J. E. Bennetts of Stanislaus county.

Each cow is taught to go to her own stanchion at milking time and directly above her on the stanchions is a card bearing her name in good-sized letters. Underneath her name, in smaller letters, is her last freshening date, the date she was bred and the date she should calve. By this means the milker has each cow's record before him at each milking, and by simply glancing at the card he knows whether a cow should be bred, and whether she is freshening before her time is up.

CANNED MILK MIDDLEMEN.

[Written for Pacific Rural Press.]

A Modoc county merchant tried with cash to get canned milk from the manufacturer, to save the middlemen's profits. He was referred to the distributor who referred him to the jobber, who was the only one from whom he could buy the milk. Thus the consumer paid four profits including that of the merchant. This was told by P. S. Dorris at the farmers' meeting called by the California Development Board in San Francisco May 21 and 22. J. E. Shinn of Alameda county told how their dairymen's association raised the price of milk to producers without raising it to consumers appreciably, by organizing and compelling dealers to sign suitable contracts.

DAIRYMEN FIX CALF PRICES.

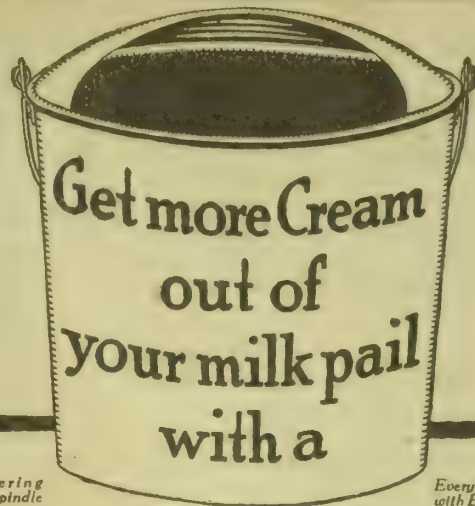
[Written for Pacific Rural Press.]

Buyers of newborn male dairy calves in Humboldt county have taken the stock at their own prices until this year; and the dairymen were far from satisfied. This year the Dairymen's Association said calves should bring \$2 each, and next day buyers appeared with the \$2 per. Similar experience with discard cows resulted as satisfactorily.

According to Herbert A. Emerson, who has been to the Pacific Coast investigating food conditions for the

Commissioner of the State of New York, the Pacific Coast this year will be able to ship East a surplus of 150

cars of butter, 24,000 pounds to the car. Four years ago the Coast imported 200 cars.



Has self-centering bowl; detached spindle

Every De Laval equipped with Bell Speed-Indicator

NEW DE LAVAL CREAM SEPARATOR

THESE are the days when you are getting *more milk in the pail*, and with butter-fat at its present high price you want to be dead sure that you are getting *all the cream out of the pail*.

You certainly can't afford to feed butter-fat to the calves and pigs at from 30 to 40 cents a pound.

All sorts of "claims" are made for various cream separators, but what you are looking for is "proof."

Here is the most convincing kind of proof that the De Laval is the cleanest skimming machine:

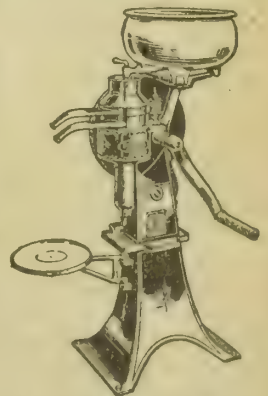
Fifteen years ago there were a dozen different makes of creamery or factory separators in use.

Today the creamerymen and large milk plants the world over use the De Laval almost exclusively. In fact, it's hard to find a large cream producer or creameryman who will allow any separator other than a De Laval in his plant, no matter what the price.

Why? Because they have found that it makes a difference of several thousand dollars a year to them whether a De Laval or some other make of machine is used. They simply can't afford to use any other machine.

This is proof of De Laval closer skimming that you can't afford to ignore. Even if you don't separate as much cream as the creameryman, you can't afford to waste it any more than he can.

Your local De Laval agent will be glad to let you try out a New De Laval on your own place. If you don't know the local agent, write to our nearest office for catalog or other information.



DE LAVAL DAIRY SUPPLY CO.

LARGEST DAIRY SUPPLY HOUSE ON THE PACIFIC COAST. We specialize in Alpha Gasoline and Distillate Engines, Ideal Green Feed Silos, Irrigation Equipment, Centrifugal and Deep Well Pumps and Alpha Spraying Outfits. Send for special catalog.

61 BEALE STREET, SAN FRANCISCO



Purebred Registered
**HOLSTEIN
CATTLE**

All records for butterfat production in 365 days, not only Holstein-Friesian but those of all other breeds, were broken in 1915 by the registered purebred Holstein cow, Duchess Skylark Ormsby 124,514, when she produced 27,761 pounds of milk containing 1,205.09 pounds of butterfat. The test was made under the supervision of the Minnesota Agricultural College, thirteen different supervisors being employed. This wonderful cow freshened at the age of 3 years and 3 days.

Send for FREE Illustrated Descriptive Booklets.
THE HOLSTEIN-FRIESIAN ASSOCIATION OF AMERICA
F. L. Houghson, Sec'y, Box 230 Brattleboro, Vt.

SHARPLES
Famous Suction-Feed
"Skims clean at any Speed"
SEPARATOR
THE SHARPLES SEPARATOR CO. West Chester, Pa.

Do You Want Long Distance Backing?

We have a son of the California State Champion three-year-old for sale. Born October, 1915; Sired by PRINCE ALCARTRA KORNDYKE, whose dam is TILLY ALCARTRA.

The Dam of this young bull is not a fifty-lb. cow, but she has to her credit 21,208 lbs. milk and 860 lbs. butter in one year, which is the largest record ever made in California by a Junior three-year-old.

If you are in the market for a bull, it will pay you to visit our ranch and see what we have to offer—at prices that will surprise you.

Look over our consignment at Sacramento May 31

J. S. GIBSON CO., Box 97, Williams, Cal.

"THE NAME GIBSON INSURES QUALITY."

Stanford Herd of Holsteins at Vina to be Dispersed

[Written for Pacific Rural Press.]

ON THE well-known Stanford Ranch at Vina—a principality in extent, containing nearly 60,000 acres—there have been raised for many years great crops of grain, hay, fruit and grapes, besides which were maintained magnificent flocks of sheep, herds of beef cattle, and the big purebred dairy herd of Holsteins. The trustees in charge of the Stanford University property have recently decided upon a change in the policy of conducting the ranch, this change involving the dispersal of their famous herd of fine-blooded Holsteins.

From the time this herd was founded by the late Governor Leland Stanford in the early 80's, it has been steadily improved by importations and the infusion of the best blood procurable. Governor Stanford bought his foundation herd from Peter Coutts, who had imported extensively for his ranch in Santa Clara county, where the Stanford University was afterwards established. Having entered into the breeding of registered Holsteins, Governor Stanford in 1888 sent Thomas B. Whales to Holland with instructions to secure a number of individuals that would work a decided improvement in the fine stock he had already purchased from Coutts. Whales returned with a big consignment. Under the direction of competent herdsman, the Stanford Holsteins were developed to a point where the herd was noted for the wonderful capacity of the cows and the great transmitting characteristics of the bulls.

In 1907 Lathrop sent Sam Houseman East for another lot of Holstein purebreds and the result was an addition of two more carloads of the best individuals that could be found in this country.

To the dairyman it will be of particular interest to know that the first A. R. O. work on the Pacific Coast was done in the Stanford herd. That was in 1901 when Estepilla made 17.13 pounds of butter in seven days. Since that time there has been more or less A. R. O. work done in the herd; the occasional tests showing a number of cows that have made better than 30 pounds of butter in seven days.

Nothing of a more convincing nature regarding the merits of the Stanford herd is to be had than the following opinion, voiced by George W. Wendt, the chief herdsman at Vina: "After spending practically all my life among Holstein cattle, during this time among some of the greatest herds in the East as well as the West, and after three years in charge of the Stanford herd, I am prepared to say that it is doubtful if ever before in the history of the breed in this country has a herd of its high standard been placed at public auction. I base my judgment upon my thorough knowledge of their production as well as their quality and individuality. It is what must be expected as a result of thirty-two years of constructive breeding."

We are told that in making his selections for a

UNDER MAGNIFICENT OAK TREES, ON SOME OF THE RICHEST LANDS OF THE SACRAMENTO VALLEY, FURNISHING IDEAL DAIRY CONDITIONS, THERE HAS BEEN MAINTAINED FOR SEVERAL DECADES THE GREATEST PUREBRED HOLSTEIN HERD IN THE WHOLE WEST.

foundation herd the two things that Governor Stanford demanded in every animal was conformation and production. The former he left to his own judgment, the latter to actual production, and failure to maintain a profitable production through a period of ten to eleven months would result in the consignment of the offender to the beef lot.

All of this is history, but in the present herd we have positive proof that his judgment was good, as, with the exception of the herd sires, the entire herd are descendants from the original importation, no females having been bought into the herd since that time.

The method of improving the herd has been that of improved methods of care, feeding, etc., and the greater influence of the use of the best sires that could be bought in its time. This, along with great fields of alfalfa and innumerable oaks for refuge from the summer sun, produced a condition very agreeable to the development of dairy cattle of this type.



The above illustrates the type of Holstein helpers on the Vina Ranch.

All down through the third of a century of constructive breeding there has been no lull in the interest in the herd. With the change of management at various times throughout this period, great care was exercised by the Board of Trustees in so organizing their force that there would be no deviation from the original schedule for its development.

Complete private records of production of each cow in the herd have been kept for a greater part of its history. This has aided materially in weeding out the unprofitable ones and building up and maintaining the very high standard that exists at the present time. The show-ring record of the herd is evidence of its very high standard of individuality. During the past year in the neighborhood of forty cows have made records ranging in mature animals from 20 to 32 pounds in seven days, with three-year-olds as high as 24.81 pounds and two-year-olds as high as 20 pounds. All of these were made without previous fitting in any way and in most cases were made in their regular place in the string and in charge of inexperienced men.

The herd sires now in use are:

King of the Pontiacs 14th, whose sire has about 200 A. R. O. daughters and is considered one of the greatest bulls of the breed from the standpoint of producing daughters. His dam, Alinde Burke, is one of the best daughters of DeKol Hengerveld Burke and a grand-daughter of Dekol 2d's Butter Boy 3d. Along with this breeding, he is without doubt one of the greatest show bulls in the West.

Dutchland Colantha Sir Ormsby 55055 is a son

of Colantha Johanna Lad, one of the breed's best proven sires, whose dam, Colantha 4th's Johanna, was the first and only cow to hold all world's records for butter production from one day to one year. His dam, a good daughter of Pontiac Burke, has a three-year-old record of 23.84 pounds in seven days and is rich in the blood of Duchess Ormsby and Pauline Paul. About forty of his daughters are now in the herd.

Segis Dekol Pontiac Burke 160339 is a California bred bull and used as junior herd sire at the Stanford Ranch. He is sired by the great bred show bull, Segis Pontiac Dekol Burke, who was a son of Riverside Sadie Dekol Burke. His dam, Miss Blaney, has a seven-day record of over 27 pounds and 1008 in one year.

The uniformly high standard of production of the herd as a whole and the great individuality that is in evidence throughout would cause the man with a knowledge of the disappointments confronted in the breeding business to sorrow at the thought of the dispersal of the results of the labors and accomplishments of a third of a century and regret that the principles of our mother country could not be applied, wherein, when age decrees that man retire from its active work, another generation takes the reins and labors on to a higher standard, as his forefathers have done, and thus perpetuate the work, on through the ages.

However, the dispersal of this great herd is in keeping with the policy of the Board of Trustees, who deemed it necessary to so combine the interests of their holdings as to make the administration safer and easier, not only for the present but for the future as well, when the entire system will have been rearranged.

The indications are that the sale will be the greatest livestock event ever staged in California.

Owing to the fact that there will be a large attendance on each of the three days, Sale Manager Tichenor has arranged for special trains leaving Chico each forenoon about 8 o'clock, and returning to Chico from Vina each evening after the day's selling. Arrangements are also being made

for the housing and feeding of the large crowd that will undoubtedly be present.

Even those who do not intend buying should make an effort to attend on this very unusual occasion, owing to the educative character of the sale and the opportunity of becoming acquainted not only with high-grade stock but with high-grade stockmen reasonably sure to be in attendance in large numbers. Numerous requests have been made of the sale manager for catalogs, and these will be forwarded as soon as received from the printer.

It is hoped that the purchases made at this sale will result in a wide distribution over the State of the blood of this outstanding herd, that California may attain and hold the pre-eminence in the dairy industry that its natural advantages and the efforts of its far-seeing pioneers seem to warrant.



Deutschland Colantha Sir Ormsby 55055, sire of 40 helpers in sale.



King of Pontiacs 14th, sire of 40 helpers in the herd.

Good Cows Best Any Time

When feed is high in price and hard to secure in any manner, the dairyman who has been culling out the boarders and using good bulls for a number of years is usually the fellow who does the least complaining, and such was the condition we found J. W. Scott of Stanislaus county in when we called on him in April of this year.

For eight years Mr. Scott has been building up his herd of grade Jerseys by the use of purebred, registered sires and for five years of that time he has been weeding out the poor ones for the butcher through the records furnished him by the Stanislaus County Cow Testing Association, which he has been a member of ever since its formation.

Mr. Scott's method is not so differ-

ent from that of other dairymen who practice good breeding and rigid selection methods over a term of years, and like others he finds that the producing capacity of his herd increases with each succeeding year.

Naturally he depends entirely upon his heifers increasing his herd average, expecting a heifer to produce 250 and 300 pounds of fat with her first calf, freshening at about 26 months. This allows him to secure an average for the herd of more than a pound of fat a day during the entire year which always allows him a satisfactory profit, for if a cow can produce more than her feed cost with cheap feed and cheap fat she can duplicate her work with high-priced fat even though feed is high also.

Developing a Cow's Feeding Capacity.

The reason that dairy cows sometimes go off their feed when being forced for record-making purposes is because they haven't been properly trained to eat as calves.

Such at least has been the observation of M. M. Holdridge of Modesto in handling the Creamcup herd of registered Holsteins.

The theory practiced with this

herd is that a heifer should be fed plenty of whole milk and some barley and plenty of alfalfa hay from early calfhood till such time as she is well developed, even though it take a year to do it, the idea being that by this means the animal develops a large capacity for feed and milk, and is able to care for greater amounts without upsetting her digestive organs when forced feeding may be desirable.

Efforts have been tried on the ranch in the past to secure the same results with skim milk but to no avail as the same rate of development has never been secured.

Milk is formed from the blood as it passes through the udder. A large flow of blood is indicated by large milk veins, the large veins that extend from the front of the udder forward along the belly. In a good dairy cow the veins are usually as large as a man's thumb.

Factory-made butter in the United States increased from 627,145,865 pounds in 1909 to 786,013,489 pounds in 1914; and factory-made cheese increased from 311,175,730 pounds in 1909 to 377,506,109 pounds in 1914.

Small top milk pails insure clean milk.



The Giant Of The Dairy

Grade up with a Jersey Bull! He is half the herd, and the breed determines half the profits. Breed him to your grade cows and bring the herd average near the Jersey average—489 pounds of butter fat per year. Your calves will be beauties. They'll mature quickly into gentle, hardy, vigorous and persistent milkers, long-lived and adapted to any climate. Let us tell you more about them. Send for our book, "The Story of The Jersey." It's free and it's a dandy.

Write for it now.

The American Jersey Cattle Club
8 West 23rd Street • New York City

THE NEW DISBROW CHURN

FOR HAND OR POWER

Holding Capacity 35-115 Gals.

Works 10-160 lbs.

MILK AND
CREAM
COOLERS
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MILK CANS
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CHEESE AND
BUTTER SALT
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GASOLINE
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DIABOLO
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STANCHIONS
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MAKING
SUPPLIES
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BOILERS

Pacific Dairy Machinery Co.

56 CLAY STREET

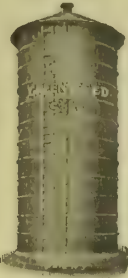
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THE DE LAVAL LINE

Superior Quality Proven by Comparison.

THE IDEAL GREEN FEED SILO

A FEW OF ITS SUPERIOR FEATURES



Doors and Door Frames are similar to refrigerator doors. Each door has three distinct bearings all around—two bevels and a rabbet—making a perfectly tight joint. Inside surface of doors is flush with silo wall, avoiding air pockets which cause silage to spoil.

All-Steel Splines joining two-piece staves interlock three staves, making a very rigid wall and air-tight joints.

Hoops and Lugs—Special Malleable Iron Lugs afford a straight pull on the extra heavy steel hoops, on which is a cold rolled upset thread, making threaded part of hoop as strong as the hoop itself.

Air and Water-Tight Foundation Joint.

Best Selected Materials—Careful Erection.

The Acme Feed Cutter and Silo Filler

with Alfalfa Meal Attachment

Rigid All-Steel Frame

Center Hung Blower

Six-Arm Blower Fan

Positive Safety Device

Low Feed Table

Large Flaring Throat

Large Capacity—No Clogging

Built in Seven Sizes



Alpha Gasoline and Distillate Engines

Hopper Cooled or Closed Jacket
Stationary, Portable—Semi-Portable.

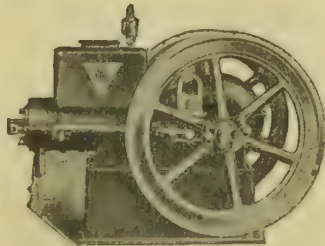
Sizes 1½ to 28 H. P.

Equipped with a high-class built-in magneto—Batteries, Coils and ignition troubles eliminated.

Alpha Engines start on the Magneto without Cranking.

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DE LAVAL DAIRY SUPPLY CO.

61 BEALE ST., SAN FRANCISCO, CAL.

A 33 Lb. Holstein Bull at Your Own Price

Our consignment to the big sale at

Sacramento, May 31, 1917

consists of eight head, including a young son of FIN-DERNE SOLDENE FAYNE, one of the very best cows in our herd, having a SEVEN-DAY RECORD OF 33-28 LBS. She is a daughter of the sensational producer, KING HENGERVELD AAGGIE FAYNE, sired by KING FAYNE SEGIS, whose daughter, SEGIS FAYNE JOHANNA, is the only 50-lb. cow.

The sire of this young bull is by KING PONTIAC SEGIS KORNDYKE and out of a daughter of STAR FARM PIETERTJE COUNTESS, with a record of 32-87.

BE SURE TO ATTEND THE SALE AND LOOK OVER OUR CONSIGNMENT.

TOYON FARM ASSOCIATION

Farm at
LOS ALTOS, CAL.

Head Office
SAN JOSE, CAL.

California Hog Book

BY W. S. GUILFORD
Price \$2.00 per Copy, Postpaid.
Pacific Rural Press 555 Market St., San Francisco

Live Stock and Dairy Notes

Livestock breeders all over the State are invited to send on postal cards, notes regarding their sales, State and County Fair intentions, new stock, etc.

The Dairy.

Tulare creameries paid out over \$138,000 for cream delivered during April.

A Zurich milking machine has just been installed in the dairy of the James Mills Orchard Company at Hamilton City.

Glen Alex Queen De Kol, a two-year-old Holstein, in a recent test conducted by representatives from the New York Experiment Station, Cornell University, Ithaca, made 42.36 pounds butter in seven days.

In the article entitled, "Experience with Milking Machines," in our issue of May 12, there was a typographical error. Fred Austin milked 20 cows by machine in the same time as eight cows by hand. In the same article Favor Bros. should have been Fancoe Bros., Gonzales.

Hollow-Hill Farm, Redlands or Colton, Cal., has just issued a neatly printed booklet written to show the value of the purebred Guernsey bull or cow on the dairy ranch. It is entitled, "Why the Guernseys Are at Hollow-Hill Farm," and it will pay every dairymen, no matter what breed of stock he favors, to secure a copy, which he may do by writing to the above address.

There will be a special five-day course of cheese-makers at the University Farm at Davis, from Monday, May 28, to Saturday, June 2, inclusive, in which the methods will be taught of making "California Jack Cheese" and "California Half-skim Jack Cheese," two types now in unexpected demand because of the war time famine in foreign made cheese. "California Half-skim Jack Cheese" is a dry, firm cheese, excellent for grating.

The San Joaquin County Cow Testing Association is gradually enlarging and assuming an air of permanency. The dairymen are realizing that only by increased production can they keep pace with the increased cost of labor and feed. The five leading herds in butterfat production for the past month were: F. J. Kell, Stockton, 16 cows, 44.1 pounds butterfat; Gotshall & Magruder, Ripon, 17 cows, 38.5 pounds butterfat; O. Fowler, Banta, 24 cows, 35.9 pounds butterfat; M. N. Yokum, Bellota, 24 cows, 35.5 pounds butterfat; H. T. Bailey, Lodi, 50 cows, 32.2 pounds butterfat.

Beef Cattle.

The Roselawn Stock Farm at Woodland reports two sales of Shorthorn bulls. C. W. Clark & Co. of Lassen county bought four bulls and the Dibblee Estate of Santa Barbara county bought three bulls.

It is reported from San Luis Obispo that the Cajo ranch has sold to a Los Angeles packer all its cows at 7½ cents per pound in Los Angeles, and its steers to be delivered in Los Angeles between June 10 and 15 at 8½ cents per pound.

Swine and Swinemen.

The Delta Farm and Livestock Co. report the sale of sixteen young Duroc Jersey sows and one boar to Mr. A. Gregory of Redlands, who is going to sell his white sows, and go into Duroc Jerseys.

"Advancer of River Bend Farm" (St. Helena) on her third birthday, May 15, farrowed a litter of 16 Duroc pigs. She is the sow that brought in to her owners the sum of \$444 in one year, the culls going to the block being included in the grand total.

A. L. Bovo of Byron is establishing a herd of registered Berkshires, having purchased two pure-bred sows and the grand champion boar at the 1916 State Fair, from H. L. and E. H. Murphy of Perkins. More females will be added to the herd as soon as accommodations can be provided for them.

As a result of the missionary work done by E. Gates for the Berkshire hog, a number of new herds have been started in Contra Costa county. Mr. Gates, who breeds Berkshires himself, has created a good home market among farmers in his neighborhood, where several have replaced their grade herds with pure-breds for pork.

R. H. Whitten of Los Angeles, secretary of the newly formed California Poland-China Breeders' Association, reports a hearty response to his appeal for membership. One breeder who recently joined wrote: "I think any man who is in the Poland-China business and refuses to dig up a dollar to support the association is a pretty small potato."

The formation of the Southern California Duroc Jersey Breeders' Association last year, was a long step towards stabilizing the breed. Persons not already members of the association, interested in the production of better Durocs in Southern California, should send their names to R. K. Walker, secretary, Devore, San Bernardino county, Cal.

Sales of Hampshire swine from the Bella Vista Hampshire herd last week are reported of 21 head, consisting of four shipments to Davis, Dixon, Tamales and Modesto. Included in the Modesto shipment was Berkeley King Grand Champion Hampshire boar of the State, 1913. Bella Vista Hampshire sows are evidently doing their share to reduce the high cost of meat, as three of them within a week produced 40 youngsters.

R. H. Whitten of Los Angeles reports the following recent sales of registered Poland-Chinas from his ranch at Terra Bella: W. L. Champalin, one boar; D. H. Forney, Fresno, one more bred gilt; P. Madaule, Terra Bella, one boar; Geo. M. Queal, Pixley, one boar; F. C. Splane, Calipatria, 13 bred sows; A. J. Williams, Pilot Hill, one bred gilt; Mrs. M. F. Wilber, Brawley, one boar; Mrs. Bessie B. Ware, Live Oak, one boar and two bred sows. Prices ranged from \$25 for the cheapest boar to \$125 for the highest-priced bred sow.

The Llano Colony in Antelope Valley, Southern California, has recently purchased from Peters, Lamson & Walker, of Devore, Cal., Col. The King, the highest-priced boar ever sold by that firm. Professor Thompson, at the last Riverside fair, commended this boar very highly. Col. The King was shown at the World's Fair together with five of his little mates and all won prizes. Several other purchases were made from Peters, Lamson & Walker, aggregating 23 sows and one herd boar in the last 18 months. Visitors are always welcome at the Devore ranch.

A note from Prof. Thompson, secretary of the California Swine Breeders' Association, states that the proposed hog sale to be held at the State Farm on Swine Day, May 30, has been called off because sufficient entries were not available. The annual meeting of California Swine Breeders will, however, be held on that date, commencing at 10 a. m. The Poland China, Duroc-Jersey and

Berkshire Associations will also meet on that day. Everybody invited to attend these meetings.

Sheep.

J. C. Fowler of Pomona has just sheared three Montana Merino sheep, getting a total of 35 pounds of long wool.

It is said that E. G. Zalud, east of Porterville, has just returned from Mexico with 6,000 lambs, which he will feed for market.

Horses.

The sale of many horses has been caused by the high prices of feed, and machines have taken their place.

Livestock Miscellaneous.

The Danish Creamery Association of Bakersfield propose to erect a cheese factory at an early date.

Wool from Iceland, cotton from China, beans from Brazil and lobsters from South Africa are among the eccentricities of commerce in these days of high prices and interruption of the usual trade currents.

Cattle methods in California must be changed, according to Professor Gordon H. True of the State University Farm at Davis. Cattle must be fattened on cultivated crops in the valleys, for ranches are stocked to the limit now and Californians must come, to more intelligent and careful raising of beef stock, he says.

The prices of meat animals (hogs, cattle, sheep and chickens) to producers of the United States increased 9.4 per cent from March 15 to April 15. On this date the index figure of prices for these meat animals was about 49.2 per cent higher than a year ago, 77.7 per cent higher than two years ago, and 67.2 per cent

higher than the average of the past seven years on April 15.

Fifteen hundred acres will be double cropped by the James Mills Orchard Company at Hamilton this year. The barley is now ripe and most of it is expected to make 30 sacks per acre. As soon as the barley is off, the land will be irrigated and planted to sorghums. No grading will be done, but irrigation will be by the contour system with ditches along the high lines. The first units of the irrigating plant are now being installed, consisting of three 8-inch American pumps, each having a capacity of 2,000 gallons per minute, one driven by G. E. motor and the others by 30 H. P. West Coast distillate engines. There will also be a portable gas engine driven outfit of 1,200 G. P. M. capacity to pump water from the creek. The sorghums will be fed to hogs, sheep, dairy and beef cattle on the ranch.

The Splendid Fair at Chico.

The Butte County Agricultural and Livestock Exposition, which opened at Chico on Monday of this week, has proven a most gratifying success to its projectors and patrons in every way. The attendance is large and the exhibits of the best. Tuesday was a red-letter day in the Exposition's program, when Mayor Rolph and the San Francisco Chamber of Commerce excursion arrived to lend eclat to the occasion. Our worthy Mayor was much impressed with the high-grade stock on exhibition and parted with \$500 for some fine pigs and heifers.

Some of the livestock entries are: McLouth & Dado, Orland, 6 Jerseys; Bridgeford Co, Knightsen, 1 Holstein

1. MANTECA WALKER SPOFFORD LYONS 2. MANTECA GELSCH SEGIS LYONS

Both ready for service and both sired by JUDGE LYONS, whose 7 nearest dams average over 32 lbs. each, with average 30-day records of over 125 lbs.

Closely combined in this bull we have KING SEGIS, KING WALKER and COLANTHA JOHANNA LAD, among the most noted bulls of the breed.

The dam of Bull No. 1 above is LOT-TIE WALKER SPOFFORD 3rd, an 18-lb. 2-year-old daughter of the five times 30-pound cow LOTTIE

2 WONDERFUL BULLS AT AUCTION

WALKER SPOFFORD, the most persistent producer of the breed, out of the KING OF THE BLACK AND WHITE, whose 7 nearest dams average over 32 pounds in 7 days.

The dam of Bull No. 2 above is GELSCH SEGIS 2nd, a 23-lb 3-year-old daughter of one of the best daughters of KING SEGIS. Her sire is KING COLANTHA CLOTHILDE, son of a 31-lb. cow out of COLANTHA JOHANNA LAD.

THESE BULLS ARE TRULY WONDERFUL.

Consigned to Sacramento Sale
May 31, 1917

Henderson Company

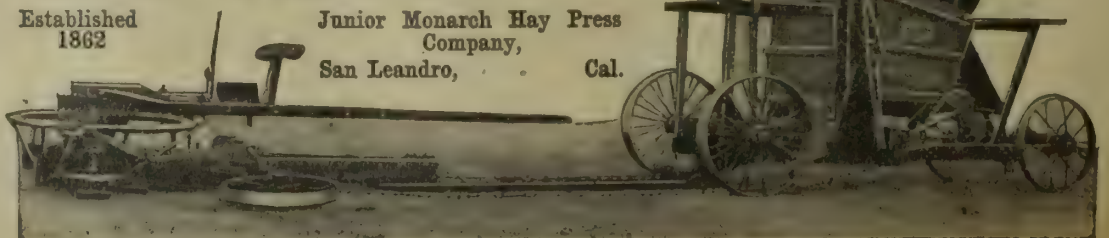
Sacramento, California

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1862

Junior Monarch Hay Press
Company,
San Leandro, Cal.



bull; Chas. Leonard, Glenn, 5 Jerseys; Alexander & Kellogg, Suisun, 9 milking Shorthorns; A. W. Morris & Sons, Woodland, 10 Holsteins, including the State Fair grand champion Segis Pontiac De Kol Burke; Henderson Co, Sacramento, 3 Holsteins; Brook Bros., Chico, Jersey bull; Vina Ranch, 11 Holsteins, including 4 bulls; H. L. & E. H. Murphy, Perkins, 1 milking Shorthorn; Sherman Reynolds, Chico, Jersey cow; G. A. Murphy, Perkins, 6 Shorthorns; H. L. & E. H. Murphy, 8 Shorthorns; Jess Bennett, Chico, 8 Shorthorns; Butte City Ranch, 6 Shorthorns, 10 Shropshires, some ponies, and 2 Berkshires; W. B. Bennett, Nord, 2 Durocs; J. H. Cook, Paradise, 5 Poland-Chinas; Orville C. Pratt, Jr., Durham cow and 3 Poland-Chinas; H. E. Richardson, Chico, 6 Hampshire hogs; W. Boyd Carpenter, Red Bluff, 5 Berkshires; Carl Kiolstad, Chico, 5 Durocs; Harry Huffman, Chico, 2 Chester Whites; H. P. Slocum & Son, Willows, 9 Durocs; C. L. Van Schoiack & Sons, Chico, 5 Poland-Chinas; Hayden Smith, Woodland, 7 Durocs; Oroville Percheron Horse Co., 1 stallion; Easton & Ward, Diablo, 8 Shires; C. M. Powell, Chico, 1 standard bred stallion; Oroville Jack Co., 4 jacks; C. J. L. Stonebraker, Chico, 5 Toggenbergs.

Great Holsteins to be Sold.

The most particular Holstein breeder ought to be able to make a selection from the great offering of young bulls at the Sacramento sale on May 31st.

Besides Pride Valdessa, consigned by the Palo Alto Stock Farm, mentioned in our last week's issue, there will be a grandson of Tilly Alcartra out of a twenty-eight pound granddaughter of King Segis, consigned by J. G. Gibson Company of Williams. The Toyon Farm Association of Los Altos will contribute a young bull whose dam has a record of 33.28 pounds in seven days and is a granddaughter of King Fayne Segis, who sired the only fifty-pound cow in the world. This bull's grand dam on his sire's side has a seven-day record of 32.87 pounds. Of two bulls consigned by the Bridgeford Company of Knightsen, one is the son of Prince Gelsche Walker, and his first six dams average 28½ pounds. The other is by a 36-pound sire and out of a cow with a 28-pound three-year-old record. The Henderson Company's offering includes two bulls sired by Judge Lyons, whose seven nearest dams averaged 32 pounds, and who are descendants of King Segis, King Walker, Colantha Johanna Lad and King of the Black and Whites, the most noted bulls of the breed.

LIVESTOCK DIRECTORY.

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SWINE.

Poland-Chinas.

MAKE BIG MONEY with our famous Whitten Ranch Big Type Poland-Chinas. Prolific breeders and profitable feeders. Grow rapidly, fatten quickly. Top the market at 225 lbs. in six months. Make greatest profit for feed consumed. Prices reasonable; satisfaction guaranteed. Send for free illustrated book, "Hogs for Profit." Finest ever issued. Packed with valuable information; tells how to become successful. Ranch in Tulare County, but address owner, R. H. Whitten, 610A Security Building, Los Angeles.

LARGE NUMBER of excellent young boars ready for immediate service. Weanlings of either sex. Sired by Joker, first prize boar at Wisconsin State Fair, 1915. Sows and gilts, sired by Iowa Wonder and bred to Joker and Sunnydale's Chief. For prices and further information write Geo. A. Smith, Corcoran, California.

BOARS of serviceable age all sold. We have a few choice gilts bred to John Henry; an exceedingly choice boar. Also have a fine lot of Fall pigs, either sex. Bar N Ranch, E. A. Noyes & Son, Props., Sutter, Calif.

REGISTERED POLAND-CHINAS—Young boars ready for service. Weanling pigs, both sexes. Prices attractive for quick sales. J. H. Cook, Paradise, Cal.

CRAWSHAW'S CALIFORNIA CHINAS are prolific and profitable. Can fill your order for weanlings, either sex, for \$15.00 each. J. A. Crawshaw, Hanford, Cal.

LAKEVIEW STOCK FARM POLAND-CHINAS are money-makers. Satisfaction or money refunded. Geo. V. Beckman & Sons, Lodi, Cal.

NOW BOOKING ORDERS for Spring pigs, either sex, from my prize-winning, large type Poland China hogs. H. I. Marsh, Modesto, Cal.

POLAND-CHINAS—Big type combined with quality. Choice bred sows, gilts, boars. W. D. Trehwitt, Box 82A, Hanford, Cal.

REGISTERED POLAND-CHINA SWINE—Prize-winners. Finest stock in the State. \$20 up. M. Bassett, Hanford, Cal.

POLAND-CHINA HOGS—Large type. 200 lbs. in 6 months. I guarantee to please you. O. L. Linn, Lodi, Modesto, Cal.

BIG-TYPE POLAND-CHINAS—Stock from the best herds of the Middle West. N. Hauck, Alton, Humboldt Co., Cal.

REGISTERED POLAND-CHINAS and Duroc Jerseys. Cholera immune for life. T. H. Beckman, Lodi, Cal.

POLAND-CHINAS—Three extra fine boars, one large and two medium type. W. Bernstein, Hanford, Cal.

POLAND-CHINAS—Large type. The Browning Stock Farm. W. H. Browning, Woodland, Cal.

POLAND CHINAS—A few gilts left at \$15 each. Edward A. Hall, R. F. D. 1, Watsonville, Cal.

REGISTERED POLAND CHINAS—J. H. Hansborough, Route A, Modesto, Cal.

REAOAKS RANCH herd of registered Poland-Chinas. W. J. Hanna, Gilroy.

Berkshires.

GRAPEWILD FARM BERKSHIRES—World's Fair Grand Champion Grand Leader 2nd heads our herd, not only himself a champion, but the sire of Champions. At the 1916 California State Fair his daughters won first in all of the senior sow classes, including the Grand Champion Sow. At the 1916 Oregon State Fair a Grand Leader sow was Junior Champion. We are offering a number of choice boars of exceptional breeding and are also booking orders for Fall pigs. A. B. Humphrey, Escalon, San Joaquin Co., Cal.

CHOLERA IMMUNE BERKSHIRES—Splendidly bred 9-months boar of show quality and scale, \$50; bred sows, \$50; bred gilts, \$35 and \$40; open gilts and boars for service, \$30 and \$35; three-months pigs, \$15. All stock registered. W. H. Waugh, Riverside, Cal.

REGISTERED BERKSHIRES—Progeny of Improver B. Young stock now ready for sale. Start your herd with breed and strain of established reputation for California conditions. Geo. G. Meckessel, Berlin, Cal.

BERKSHIRES—I have one of the best herds on the Pacific Coast, including Grand Champion Sow, Reserve Grand Champion Boar under one year, Third Aired Boar, etc. Frank A. Brush, Santa Rosa, Cal.

EFFICIENCY FIRST BERKSHIRES—Ten firsts, all championships Nevada State Fair, 1916. Laurel Champion and Grand Leader breeding; any age. Joseph Wilson, Jr., Mason, Nevada.

IMMUNIZED NORMANDY BERKSHIRES—Good type. Breeding stock, any age, for sale at all times. Cast iron guarantee. Arlington Smith, Visalia, Cal.

ROSE CREST BERKSHIRES—Rivals Champion Best blood. Open and bred gilts. Service boars. F. L. Hall, Perris, Cal.

CARRUTHERS FARMS BERKSHIRES—Cholera immune. Second annual sale August 2, 1917. Mayfield, Cal.

REGISTERED BERKSHIRES—Young stock for sale sired by a first prize son of Laurel Champion; prices right. Imperial Stock Farm, Morgan Hill, Cal.

MODEL HERD BERKSHIRES—Bred for size and quality. Weanlings and gilts. J. L. Gish, Laws, Cal.

HOPLAND STOCK FARM—Registered Berkshires. Prices on application. Hopland, Cal.

REGISTERED BERKSHIRES—Geo. M. York, Modesto, Cal.

BERKSHIRES—Fair Oaks Ranch, Willits, Cal.

Duroc-Jerseys.

FIRST PRIZE HERD—Comprising the three most noted families of the breed: Golden Model, Crimson Wonder and Colonel. Offering line bred show winners and show prospects in each family as good as can be found in United States. Also weaned pigs. Seeing is believing. It will pay you to investigate this offer. Haden Smith, Woodland.

RANCHO RUBIO DUROCS—Only a few September gilts left. One corking good Fall Boar by Orion Model, son of the last International Grand Champion. Place your orders now for weaned boar pigs. Best I ever raised. Elmer Lamb, Ceres, Cal.

DUROC-JERSEY WEANLINGS—Either sex; World's Grand Championship stock, registered, \$25 each. This is your opportunity to get started right. Rosenberg Co., Haywards, Cal.

REGISTERED DUROC-JERSEYS—Service boars from prize-winning stock are money-makers. They grow faster. New England California Corporation, Ripon, Cal.

DUROC JERSEYS—Sow and boar pigs from Registered Stock. Low prices. Delta Farm and Live Stock Co., Colton, Cal.

DUROC JERSEYS—Herd boars. E. N.'s Colonel and Tulare Boy. Sweepstakes winner at Fresno, 1915. Choice breeding stock. J. P. Walker, Visalia.

REGISTERED DUROCS of guaranteed breeding. All ages. Weaned pigs, \$10. H. E. Boudier & Son, Napa.

HEAVY BONED DUROCS—A few service boars for sale. Ormondale Co., Route 1, Redwood City, Cal.

REGISTERED DUROCS—Crimson Wonder stock. Young stock, both sexes. L. D. Collins, Denair, Cal.

REGISTERED DUROC-JERSEY SWINE—Both sexes. Big-boned type. B. F. Kendall, Hardwick.

REGISTERED DUROC-JERSEYS—S. S. Southworth, Napa.

CROLEY'S BALANCED HOG FEED—the cheapest feed to fatten hogs. Write Geo. H. Croley Co., Inc., Live Stock Supplies, 631-637 Brannan St., San Francisco.

WINTON DUROC-JERSEY FARM, Winton, Cal.—High-class purebred hogs, both sexes, any age.

BIG TYPE DUROCS—Quick maturing, Easy keeping. Frederick M. Johnson, Napa, Cal.

THE DEVILBESS HERD of large type Durocs. J. M. Devilbess, Patterson, Calif.

DOS HERMANOS REGISTERED DUROCS—Duveneck & Pickersgill, Ukiah, Cal.

DUROC-JERSEY REGISTERED HOGS—River Bend Farm, St. Helena, Cal.

REGISTERED DUROCS—Either sex at all times. W. P. Harkey, Gridley, Cal.

Yorkshires.

LARGE YORKSHIRES—The ideal hog for the progressive farmer. Young stock for sale. A. L. Tubbs Co., Calistoga, Cal.

LARGE YORKSHIRES—A few choice young boars and gilts for sale. Riverina Farms, Modesto, Cal.

Chester Whites.

THE BILLIKEN HERD of Chester Whites—Every rancher, every fruit grower, every one who can possibly do so, should keep at least one brood sow; we must increase our meat supply. I am offering some bred gilts and sows at very reasonable prices to help this along. 1 spring gilt to farrow in May; 3 spring gilts to farrow in June; 2 young tested sows to farrow in July; 6 spring gilts to farrow in September; 18 fall gilts to farrow in October; 8 spring boars about ready for service; weaned pigs, both sexes, for delivery in June. Write for special price lists and circulars. C. B. Cunningham, Mills, California.

REGISTERED IMPROVED CHESTER Whites—Grizzly Bear Ranch, East Auburn, Cal.

Essex.

LITTLE BLACK ESSEX—New crop nearly ripe. A few fine youngsters left. L. W. Mill-sap, Yolo, Cal.

Hampshires.

BELLA VISTA HAMPSHIRE—Service boars and bred or open gilts. J. W. Henderson, First National, Berkeley.

Tamworths.

BEAVER LODGE TAMWORTH—Service boars. Write for prices and pedigrees. A. G. Lane, Amsterdam, Cal.

DAIRY CATTLE.

Holsteins.

FOR SALE—From 1 to 70 extra fine, straight well-marked, light-colored, registered Holstein heifers, from 8 to 20 months old. Those old enough are being bred to a first-prize son of Prince Gelsche Walker, whose dam has a high yearly record. Some of these heifers are sired by bulls whose dams have from 35 to 37 pound records. They carry the very best blood of the breed and are good enough for any herd anywhere. Prices to fit any pocketbook. Geo. A. Smith, Corcoran, Cal.

GRANDSONS OF HENGVERD DE KOL and out of A. E. O. cows for sale. Prices reasonable. Write for pedigrees. Many years of constructive breeding has made my herd one of the prominent ones of the San Joaquin Valley. R. F. Guerin, Visalia, Cal.

REGISTERED HOLSTEINS—Grandsons of King Segis and of world's record cow Cream-elle Vale. Will build up the production and value of your herd. Write or call and see them. F. H. Stenzel, San Lorenzo, Cal.

FOR SALE—Two registered cows, one with record 24.59. Sister to other one made 23-10 as a two-year-old. Both bred to a 30-lb. sire. Geo. Kounias, Modesto.

TULARE GUERNSEY AND HOLSTEIN Farm is offering young bulls of both breeds. Excellent breeding. Prices reasonable. W. J. Higdon, Tulare, Cal.

THE MCLOUD RIVER LUMBER CO., McCloud, Cal.—High-class thoroughbred Holstein bulls for sale. Write for prices and pedigrees.

J. H. HARLAN, WOODLAND, CAL.—Breeder of Registered Holsteins. Sold out at present. Watch for announcement on King Valdessa.

PACKWOOD FARM HOLSTEINS—Fine young bulls of serviceable age out of tested A. E. O. cows. W. F. Mitchell, Visalia.

TWO SERVICEABLE SONS of Colantha S. R. Pontiac Aargie for sale. Moorland Farm, K. W. Abbott, Milpitas, Cal.

THE HENDERSON CO.—Breeders and importers. Registered Holsteins. Sacramento Bank Bldg., Sacramento.

BREEDERS OF REGISTERED HOLSTEIN cattle and Berkshire pigs. Whittier State School, Whittier, Cal.

REGISTERED HOLSTEINS—A. W. Morris & Sons, Corp., Importers and Breeders, Woodland, Cal.

FOR SALE—Registered Holstein bull, son of Prince Gelsche Walker. D. H. Bagles, Napa, Cal.

CREAMCUP HERD—Registered Holsteins; Pontiac bull calves. M. Holdridge, Modesto, Cal.

REGISTERED HOLSTEIN BULLS, \$50 to \$150. Glorieta Stock Farm, Woodland, Cal.

BREEDERS OF REGISTERED HOLSTEIN Cattle—McAlister & Sons, Chino, Cal.

GOTSHALL & MACRIDER—Breeders of Registered Holstein-Friesians. Ripon, Cal.

CHOICE HOLSTEIN bulls for sale. No females. Milbrae Dairy, Milbrae, Cal.

REGISTERED HOLSTEIN BULLS for sale. C. L. Morse, Route B, Modesto, Cal.

REGISTERED HOLSTEIN-FRIESIAN CAT-tle—J. M. Campbell, Escalon, Cal.

REGISTERED HOLSTEIN BULLS for sale. Sunnyside Ranch, Willits, Cal.

REGISTERED HOLSTEIN CATTLE—E. E. Freeman, Route B, Modesto, Cal.

BREEDER OF HOLSTEIN-FRIESIAN CAT-tle—Dr. Ben Stetson, Napa, Cal.

A. R. O. HERD OF HOLSTEINS—Alex. Whaley, Tulare, Calif.

Jerseys.

N. H. LOCKE CO., LOCKFORD, CAL., Jerseys. Bull No. 432, born Dec. 2, 1915. Sire, King's Valet; Dam, Derrien's Lassie of L. She produced 604.6 lbs. fat in 351 days at 4 years. Price, \$200. Bull No. 491, Oct. 20, 1916. King's Valet—Sunshine of L. 56.9 lbs. fat third month. Price, \$100. Records made under dairy conditions at a profit. Service bull and bull calves with profitable production backing. Prices, \$50 and up. Poland-China boar Big Wonder, over 400 lbs. A good breeder, \$50. Chester White Swine—Boars and Gilts.

BREEDER OF REGISTERED JERSEY Cattle—Duroc Swine. Young stock for sale. W. J. Hackett, Ceres, Cal.

JERSEY BULLS from Register of Merit cows. C. D. Hayworth, Modesto, Cal.

VENADERA HERD OF JERSEYS offers calves from Register of Merit Cows with official yearly records. Write for list of bulls. Guy H. Miller, Route 1, Modesto, Cal.

JERSEY BULLS—Sons of Gertie's Lad and Gertie's Son's Victor. A. A. Jenkins, Tulare, Cal.

YOUNG REGISTERED JERSEY BULL Calves at reasonable prices. O. J. Ames, Oakdale.

CHOICE REGISTERED JERSEY FEMALES—Fresh and Springers. Breeding and individuality the very best. McLouth, Orland, Cal.

REGISTERED JERSEYS—Young bulls and bull calves. T. B. Purvine, Petaluma, Cal.

Guernseys.

PACIFIC GUERNSEY HERD—Cattle selected from the best imported and Advanced Register Stock. Now offering choice bulls. C. S. Rasmussen, Lodi, Cal.

EDGEMOOR FARM GUERNSEYS—First in the show ring and in official records. Few animals of either sex for sale. Edgemoor Farm, Santee, Cal.

REGISTERED GUERNSEY BULL—No. 24342 from A. R. and imported stock. Write for prices and pedigree. A. G. Lane, Amsterdam, Cal.

TWO REGISTERED GUERNSEY BULLS—A. E. Breeding; of serviceable age. Also a few bull calves. E. R. Frey, Byron, Cal.

BELLA VISTA GUERNSEYS—Males from A. R. dams, \$125 and up. J. W. Henderson, First National, Berkeley.

Ayrshires.

PLEASANT VALLEY AYRSHIRE FARM—Registered bulls for sale. Write for prices. Sullivan Investment Co., 1942 Folsom street, San Francisco.

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FAIRVIEW AYRSHIRES AND DURHAMS—Bred for quality. Choice young stock. Geo. Fay, Sheridan, Nevada.

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FOR IMMEDIATE SALE—15 registered Shorthorn bulls, one year to three years of age. Grand individuals in good flesh, fashionably bred from high-class sires and dams. Also two registered Percheron stallions—cheap. Apply: Wm. Bond, Mowry Station, near Newark, Cal.

SCOTCH AND SCOTCH-TOPPED SHORT-horns—We have the largest herd of straight Scotch cows in California. Foundation stock of both sexes for sale; also a choice lot of range bulls. Barco Ranch, Hollister, Cal.

D. O. LIVELY STOCK FARM, INC., 210 Hobart Bldg., San Francisco, breeders of Hereford cattle. A few choice heifers for sale. We buy and sell livestock on commission. Farm at Mayfield, Cal.

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REGISTERED AND UNREGISTERED—Shorthorn bulls for sale. Paines Ranch Co., 320 Sharon Bldg., San Francisco.

INNISFAIR DAIRY SHORTHORNS—Registered young bulls for sale. Alexander & Kellogg, Suisun, Cal.

HOPLAND STOCK FARM—Registered Shorthorns. Prices on application. Hopland, Cal.

REGISTERED HEREFORDS—H. H. Gable, Diamond G Ranch, Esparto, Cal.

SIMON NEWMAN CO., Breeders of Registered Herefords, Newman, Cal.

GEORGE WATTERSON—Breeder registered Herefords. Bishop, Cal.

SHORTHORNS—Carruthers Farms, Mayfield, Cal.

SHORTHORNS—Fair Oaks Ranch, Willits, Cal.

SHEEP AND GOATS.

D. E. KELLNER, importer and breeder of Hampshire sheep, Eugene, California, offers for sale a choice lot of Hampshire Ram Lambs, sired by Walnut Hall and Butterfield; rams sired by Salt Lake, August, 1916; lambs ready for delivery after July 15, 1917. Inspection and correspondence invited.

F. A. MECHAN ESTATE, Petaluma, Cal.—Breeders and Importers of Shropshire, Rambouillet and American Merinos, both sexes. Also Red Polled cattle. Take electric car at Petaluma or Santa Rosa for Live Oak Ranch.

KAUFKE BROS., WOODLAND, CAL.—Breeders and Importers of Hampshire sheep.

DORSETS AND ROMNEYS—Dorset ram lambs for sale. John E. Marble, Los Angeles.

BISHOP BROS., SAN RAMON, CAL.—Breeders and Importers of Shropshires.

CHAS. KIMBLE—Breeder and Importer of Rambouillets. Hanford, Cal.

HORSES AND MULES.

HORSES—For sale, 3 and 4 year-old Percherons. Broke and matched, \$250 to \$300 per span. S. L. Skaggs, Madera, Cal.

REGISTERED SHIRES—Black Hawk Stock Farm, Importers and Breeders. Easton & Ward, Proprietors, Burlingame, Cal.

MISCELLANEOUS.

CROLEY'S BALANCED DAIRY FEED—the cheap milk producer; and Croley's Cal Meal—the best California calf raiser. Geo. H. Croley Co., Inc., 631-637 Brannan St., San Francisco.

BUTTE CITY RANCH—Shorthorns, Shropshires, Cholera Immune Berkshires and Ponies. Special offering of sows, pigs and bulls. Butte City Ranch, Box P, Butte City, Glenn Co., Cal.

FEED, FREE RANGE, State, Government land, any amount. Booklet free. Joseph Clark, Sacramento.

Bull Preparedness for Beef Growers

[Written for Pacific Rural Press.]

For the first time in many years the range cattle grower who wishes to use registered bulls finds it extremely difficult to fill his requirements at a moment's notice. Many instances are cited in which the prospective buyer is reported to have been compelled to buy grades when he had expected to buy purebreds because of his delay; and such reports are always more prevalent at this time of the year.

Time was when such a condition could be repaired by Eastern purchases; but at present the dilly-dallying buyer has great difficulty in picking up service bulls there also, even at values that would have staggered him a few years ago. Under such circumstances, it is natural that the question be asked, what are we going to do about bulls? It is an absorbing question to which there can only be one answer—"bull preparedness."

SELECT YOUR BULLS IN TIME.

To experienced users of registered bulls, this is not a new idea as witness the following statement by W. Mayo Newhall, of the Newhall Land and Cattle Co.: "In our cattle operations we have found it unsatisfactory to depend upon buying our registered range bulls as two-year-olds for immediate service. Experience has taught us that we can buy our bulls cheaper, get a better selection and get better percentages of calves by purchasing them as short yearlings."

"When possible I prefer selecting my bulls before they are weaned, getting in this manner the pick of the breeder's supply, and allowing them to stay on the breeder's ranch till they are about a year old. We then

take them to one of our coast ranches where they are run on the best of feed, becoming acclimated and hardy for service as two-year-olds. The great trouble with too many cattlemen is that they do not figure far enough ahead but wait till the last minute to buy their bulls. Then the supply has been culled over, the bulls are put to hard service under different conditions than they have been used to; and when unsatisfactory results are secured, the grower blames the bull rather than himself. We never figure on less than an 85 per cent calf crop and believe there is a distinct improvement in the weight and quality of our steers."

NEVADA EXPERIENCE.

Similar experience and advice to that of Mr. Newhall's is this from H. F. Dangberg of Minden, Nevada, whose successful operations in a large way need not be commented on among practical cattle raisers.

"We try to buy our range bulls as weaners," states Mr. Dangberg, "because we have found that they can be purchased cheaper at that age, the cost of shipping them to our ranch is less, and they have a longer period to become acclimated before being put into service."

"We feel that a bull should attain an age of at least two years before being put into service, so that his growth may not be stunted."

"Our facilities for handling yearling bulls are just such ordinary conditions as will enable us to keep them separate from the other classes of stock; and we give them just good ordinary care for the purpose of acclimating them and getting them in range condition, not endeavoring to produce a fat, flabby individual."

"We have sometimes experienced difficulty with bulls raised on valley lands and pampered (presumably by box-stall feeding—Ed). But if the bulls are bought as short yearlings and handled in a way to make them rough fellows, this trouble can be averted."

"I find some difficulty in buying bulls of serviceable age; as such bulls, bought in the East, are not suitable for range purposes under ordinary conditions. We do not encounter the same trouble in securing yearling bulls; as the average breeder, under ordinary circumstances, is willing and anxious to cash the bulls at the earliest possible moment."

"The difference in value between yearlings and short two-year-old bulls should be about the difference of cost of keeping, plus interest on the investment, and insurance which would be about \$30."

To corroborate Mr. Dangberg's last statement, a prominent breeder of California is authority for the assertion that while he offers the pick of his yearling bulls at \$150, he asks and receives \$200 to \$250 for bulls of a serviceable age. He considers this spread in price necessary to cover labor and feed costs during the holding period; but admits that the buyer pays for a service that he might more economically perform for himself.

That the matter of acclimatization is of more than ordinary importance, especially in poor grass seasons, is asserted by Robinson Bros. of Merced county, who state that when bulls are bought and turned on the range

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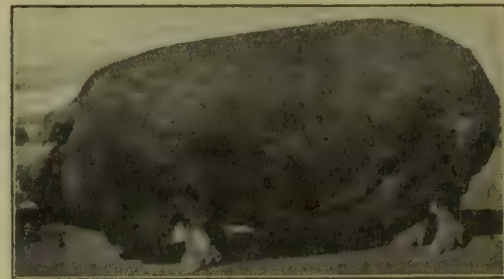
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For many years at widely separated show rings, under many different judges of varying type ideals, my Poland Chinas have been consistent prize-winners. My herd is large and I cull closely. The animals sent out as breeders are the very tops of a large number. I KNOW that my kind of Poland China is a profitable farmer's hog, for I send carloads of them to the packer every year—uniform in size, high in quality, quickly and economically matured and finished.

Young stock, \$30 Up.
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W. O. Pearson, Prop. Woodland, Cal.



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35 years in this business. I sell direct to the consumer. You act as your own agent and save 20 per cent. Tanks from 100 gallons to 10,000 gallons in stock. A stock tank 6x2 ft., \$10. Reference: Farmers and Merchants Bank of Stockton. Phone 2957.

R. F. WILSON, Stockton, Cal.

at serviceable age they do not stand up to the adverse conditions. This they think is not so pronounced with bulls that have become accustomed to feed and range before being put to service, although they also believe it is a mistake to put yearlings into service.

NO GRADE BULL IS CHEAP.

Naturally opinions differ on this, as well as on any other subject where conditions differ, and while F. G. Stevenot of Calaveras county agrees with the above, so far as breeding of his bulls is concerned, his feed conditions warrant a different viewpoint on bull buying.

As to the advisability of buying registered bulls he says this: "Much can be said about this bull question, the main thing being good blood. Always preach the good results from registered bulls. No grade bull is

cheap. One always loses enough by his use to make him expensive."

With well fenced pastures, good feed and not too much service, Mr. Stevenot does not experience any difficulty with bulls bought at a mature age but he does not believe in using bulls younger than 18 months and prefers them being two-year-olds. If used before that time their growth is retarded, particularly if they are allowed to run free with the cows.

BREEDERS TOO FAR APART.

In the carrying out of a preparedness campaign as above outlined, there has been one outstanding difficulty experienced by buyers: the distances between breeding establishments and a consequent loss of time in personal selection. Many times, it is said, orders are sent East because of this and the further difficulty in assembling carload lots in one locality.

Buy a mature bull whose heifers are better producers than their dams.

Approximately twenty per cent of each potato pared by ordinary household methods is lost in the process.

Home-Made Pork Products

To the Editor: I would like to know a practical way for a farmer to put up pork for future use at this time of the year, as I can only get 9c per lb. on foot.

I have been using a brine of 1 1/4 lbs. of salt and 1 lb. of sugar to the gallon of water—boiling same for half hour and letting it cool before putting the meat in. I have kept bacon in the brine three weeks and hams and shoulders six weeks, then smoke them and I have always had good meat. I have cooked sausage as soon as made and put down in stone jars and cover with hot lard.

I have a good tank house, ceiled and the space between the siding and the ceiling filled with sawdust. The hog I have weighs about 150 lbs. Any information you may give will be thankfully received.—C. W. H., Healdsburg.

[In parts of California where the nights are cool, home butchering and curing can be successfully done at this time of the year. Avoid hot spells of weather, do the killing and dressing in the late afternoon, cool the carcass by hanging in the open air during the night and get everything ready to cut up and get in the brine in the cool of the morning. Your methods are good. Others like them can be had by sending to the College of Agriculture at Berkeley for a copy of their Circular No. 151, which contains also suggestions for farm butchering of hogs.—Editors.]

FEEDING THE PIGS SEPARATELY.

It is generally agreed that the cheapest gains on a hog are made during his early life and this is emphasized if the sow's milk is supplemented with skim milk and a little grain after the pig is about three weeks old.

As it is not the object in most cases to feed the sow a fattening ration while she is still suckling her pigs, the most practicable way to furnish the pigs with the desired ration is to provide a separate trough for them, to which the sow cannot gain access. This is accomplished on a ranch recently visited by the use of two panels set in an A shape against the division fence of the pen. A small space was left where the two panels joined, large enough to allow entrance to the pigs but too small for the sow. A small trough set inside the enclosure allowed of feeding the pigs a separate ration and in this way the pigs weaned themselves at an early age.

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Double Pills should be used for pure bred and high grade stock.

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Write for new booklet, "The Control of Blackleg." It tells about Anti-Blackleg Serum which cures Blackleg and may be used simultaneously with vaccine to combat outbreaks and safely protect valuable stock.

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OVERALLS



NEUSTADTER BROS.
San Francisco
Portland

Raising Poultry for Profit

[Written for Pacific Rural Press by Susan Swaysgood, Pomona.]

Brittle Shells.

To the Editor: What is the cause of brittle shells in Plymouth Rock eggs in hatching? Chicks die in shells.—R. A., Walnut Creek.

The brown eggs, no matter what breed, are always hard and brittle. They do best hatched under hens in a place where the ground can be moistened. When hatched in incubator, use moisture on the floor of building—enough to keep the atmosphere a little damp. I am now experimenting with a powder that is supposed to rot the shell. If it is good I will tell of it in the Press. So far we have not any remedy for chicks dying in shell from hard shell except the moisture.

Chickens Have Black or Dark Tips on Comb.

To the Editor: Had a hen die. Opened her and found her full of eggs, liver was very large and very dark colored, full of tiny white spots like a pin point; heart small and full of dark red blood, as were main arteries and oviduct. Was not sick, but died as she was getting on nest. Have given flock a week's Epsom salts for internal fat, and hens are laying fine. Feed mash, wheat, gyp corn, soaked oats, etc.—Mrs. C. F. S., Galt.

Your trouble is with the feed. The hens have had bad cases of indigestion which you have not noticed. I don't know anything about the mash you mention, but I do know this, that very many complaints that come in are from people using this same mash. This does not mean that the mash is not good, but I think it is too highly concentrated to be fed wholesale. You should feed a certain amount, say just what you can hold in your hands, for ten hens one day and give them no more. If you cut down on the mash you may not get quite so many eggs for awhile, but they will come back after having grown used to the lesser quantity and they will not die. No, do not use the acid more than four or five days. A better remedy now would be plenty of green alfalfa mixed with the mash and ten drops of tincture of Nux Vomica in a quart of water once a day for a week, and cut out some mash and corn.

Rabbits Dying.

To the Editor: I had seventeen rabbits, from one to three months old. During the winter I fed them alfalfa hay containing a lot of foxtail. About April 1 I started to feed green alfalfa and they commenced to die. My buck and three does are healthy. What is the matter?—L. P., Ripon.

The matter is that you have fed your young rabbits alfalfa that has been touched with frost. The only reason the old ones are not dead is because they are stronger and could fight off the effect. Alfalfa has been not exactly frozen this spring, but just a little touched, and young rabbits are very sensitive to such things; also to change of feed, and when you change from dry feed to green feed, even if it is perfect, it pays to be careful, and when you give green feed give no water; when you give dry feed give plenty of water. Better spend a dollar for "Rabbit Culture," for sale by F. H. Snow, Petaluma.

Turkeys Have Blackhead.

To the Editor: Two of my young gobblers, five months old, died with what is called blackhead. About three more are drooping. Please tell me if there is a remedy? Also what is the cause of young turkeys' feet curling up so they cannot walk. Is there a remedy for this?—Mrs. L. B., Aromas.

Some times young turkeys die from a disease that is similar to blackhead, but not so hard to cure. Try giving them one of Carter's little liver pills, 25 cents a box at druggists. If the liver is out of order these will help. For true blackhead there is very little hope. Read last week's Press and see what is said on turkey diseases. Be sure you clean up your yards where the young birds hang around; plant something in it if possible, but anyway dig it up. For the curling up of feet, give 15 grains of iodide of potassium to one quart of water, and see that they get no other water to drink until that is gone. Keep this up until relieved. The trouble is rheumatism and they must be kept warm and dry. Plenty of litter to scratch in is very helpful in such cases.

Fuller Information Desired.

To the Editor: Will you kindly tell me what my chickens are dying of? They are comfortably fixed and let run, were laying fine. They go around drooping, stop eating and last but a few days before they drop off the perch dead.—Mrs. J. W. F., Modesto.

Your information is so very meager that it is hard for me to tell you. I don't know whether your chickens are fed anything or nothing, as you forgot to say. I don't know whether they are fat or thin, so you see whatever I can tell you is mere guess work. However, I think your chickens are eating something on the range that is poisoning them, maybe dead gophers, squirrels, or birds; but it appears like ptomaine poisoning. Keep them in a yard awhile. If it is poisoning, sour milk is as good a remedy as anything. Send me fuller information and I will try again.

Prices of Eggs.

It is reported that in the East eggs went down as low as 28 cents a dozen on March 12, then began to climb again and kept on climbing gradually until at middle of April they were 38 cents a dozen. But owing to the influx of Chinese eggs, we on this Coast are still way below Eastern market prices. We are supposed to have a pure food law that does not allow incubator eggs to be sold on the market. If this is a fact, I would respectfully call the attention of the "pure food" commission to a letter published in the "American Poultry Journal" from a Chinese student at the Missouri University. H. Lum Chung says in his paper, telling about Chinese incubation, that as early as the fourth day the eggs are tested and the infertiles sold as fresh eggs. And there is not much doubt but that these eggs find their way to our markets, and are sold as fresh eggs. Of course even a pure food commission has to have proof before they can work, so it is up to some of our large poultry men to investigate and find out if this is so, then pass their in-

formation along to the proper authorities.

According to the price of feed, we are all perfectly satisfied that eggs should advance higher than they are, and it may be that this is one cause why they do not.

PROFITABLE POULTRY ON A DAIRY.

[Written for Pacific Rural Press.]

Poultry form no inconsiderable portion of the income secured by A. M. Bibens of Stanislaus county, in spite of the fact that they are largely fed on by-products of his dairy farm.

Mr. Bibens aims to have 1,000 hens on his ranch at all times, always buying them as pullets because he is able to pick them up for 55 to 60 cents apiece from people who are going out of the chicken business, and at that price he does not think he can afford to raise baby chicks.

Milk and green feed naturally constitute a large part of the ration used by Mr. Bibens, but as he does not yard his birds they pick up much feed in the straw and waste hay around the cow corrals. All milk fed is well clabbered in barrels before feeding.

Early in April Mr. Bibens was securing 700 eggs a day from his flock and was feeding a large bucketful of Egyptian corn, one of oats and one of wheat in the evening and a third of a bucketful of each grain in the morning. These grains are fed on discarded alfalfa stems and straw, which is strewn around over the barnyard so that the hens have to do a lot of exercising to get them.

Alfalfa furnishes the bulk of the green feed, but a small field close to the buildings is kept for planting barley, the chickens being kept out till the grain is well sprouted in the ground. This also requires lots of scratching on the part of the hens who eagerly dig for the sprouted grain.

Large laying and sleeping houses are provided the birds, but except at night they have the run of the place. It is surprising, though, the small amount of foraging they do in distant fields preferring apparently to stay close to the laying houses.

SELLING SURPLUS HONEY.

Honey is 'one product of the farm which will practically market itself if it is properly prepared for the market. The marketing of a small surplus is a simple matter. Let your neighbors know you have the pure unadulterated article and they will be glad to relieve you of the surplus. The marketing of a large crop may not be so simple, as you may have more than is needed for supplying your immediate neighborhood or city market. For disposing of large surpluses advertising in newspapers is suggested. This will increase the demands from other cities and from a

large country district. For marketing a small surplus, glass jars holding three, six, or 12 pounds are convenient and attractive containers; but where a larger surplus is to be marketed, tin pails holding five or 10 pounds or larger quantities are more generally used.

Poultry Breeders' Directory

Rates in this directory, 30¢ per word each issue; or if carried weekly for one year, 2½¢ per word.

WHITE PLYMOUTH ROCKS—Hatching eggs from splendid layers. Mrs. J. B. Tupper, Route A, Ceres, Cal.

BARRED PLYMOUTH ROCKS—COCKERELS—Cockerels—Cockerels—Yes, we have them; also Hens and Pullets—all bred from our Champion Winners at California's leading shows. Also hatching eggs. If it's Barred Rocks you want, get in touch with me right away. Have bred them exclusively for nineteen years. Send for Catalog. Chas. H. Voden, Box 396, Los Gatos, Calif.

"FINEST HATCHERY IN THE WORLD"—Baby Chicks, White Leghorns, and Rhode Island Reds, 100's, 1000's, hatched right in our \$50,000 brick and concrete hatchery from our quality heavy layers. Reasonable prices. Stock, Hatching Eggs. Pebbleside Poultry Farm and Hatchery, Sunnyvale, California.

WHITE LEGHORN BREEDING COCKERELS—10 months old, from our famous heavy laying, prize winning stock. To make room we offer our regular \$5.00 values at \$2.50 each while they last. Rancho Del Martino, Downey, Cal.

BABY CHICKS—HATCHING EGGS—White, Buff, Brown Leghorns, E. I. Reds, Barred Rocks. Sturdy chicks from well-mated fowls. Prompt, efficient service. Write for circular. Campbell Poultry Ranch, Campbell, Cal.

S. C. RHODE ISLAND REDS—220-egg record in 12 months; breeding males; eggs at half price. Wm. Larm, 3915 39th ave., Fruitvale, Cal.

EASTMAN'S BRED-TO-LAY Barred Plymouth Rocks—chicks, eggs, cockerels. We organize and trapnest. Fairmead Poultry Farm, Fairmead, California. Box P.

MODEL POULTRY FARM—White Leghorn specialists. Our thirteenth year. Baby Chicks and Hatching Eggs for sale. W. C. Smith, Prop., Corning, Cal.

INCUBATORS—For Essex Model Incubators at factory prices, write Geo. H. Croley Co., Inc., Poultry Supplies, 631-637 Brannan St., San Francisco.

CHICKENS, DUCKS, GEESE, GUINEAS, Pea Fowl, Pigeons. Wm. A. French, 545 W. Park St., Stockton, Cal.

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BRONZE TURKEY EGGS—By the setting or hundred. Also fine young toms. Albert M. Hart, Clements, Cal.

WHITE HOLLAND TURKEYS—Eggs, \$3 per doz.; baby turkeys, 50¢ each. Few fine toms. Alice Merriam, E. D. 2, Pomona, Cal.

MAJESTIC BRONZE TURKEY EGGS—\$3.50 per setting. Toulouse Geese eggs, 25¢ each. Mrs. M. Cogblan, Walnut Creek, Cal.



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Dep't R. P.

Los Angeles, Cal.

Poultry—Purebred and Commercial

[Written for Pacific Rural Press by Harry Mortenson, Suisun.]

Chicks Dying.

To the Editor: We hatched 200 Rhode Island Red chicks and brood with hens. When chicks are a few days old they commence to die. Have some six weeks old that have extra large heads and general stunted look. So far have lost fifty and expect more will die. They are fed the best of chick feed; have specially clean quarters, fresh water and milk. Some have diarrhoea and some have wing feathers that are too long entirely, then they get droopy and die.—O. E., Stockton.

I think that the chicks are suffering from either head lice or mites. Your feed is all right, and the fact that you hatched an average of 11 chicks from 15 eggs set gives credit to the stock. Now, pick up a droopy chick, not a dead one, and scratch your thumb along the wrong way of the head feathers and see what you find. You can see much better out in a strong sunlight because head lice burrow deep in the chick's head, and one or two are sufficient to kill a chick a few days old.

If you find nothing there, then get out into the coop at break of day and look in the cracks and crevices for mites. You will find recipes in your "Poultry Practice" to fit both cases, and I am nearly sure that is where your trouble lies. Don't get discouraged; get mad and go for them with something that will make them hustle.

Growth on Hen's Beak.

To the Editor: We have a hen that has a growth that started between her eye and beak. It has now grown so that it completely closes her eye. It is not a sore, but is hard and red like her comb. Her comb is red and she appears to be perfectly well and is laying, but the growth seems to bother her in that she shakes her head. It is getting larger all the time, and I would like to know what it is and what to do to relieve her.—J. E. P., Muroc, Kern county.

The cause of the growth on your hen's beak is difficult to determine, but probably it is just an abnormal growth. If it does no harm and does not affect the hen's health leave it alone. You might remove it, however, with a sharp knife, taking care not to allow her to bleed to death. After the operation, powder the wound with iodoform, put the bird in a small clean coop and watch the wound for a few days.

Market Weight for Rabbits.

To the Editor: We have on hand about two dozen Belgian hares of three to four pounds which we wish to sell. We are not able to find a market so far, but we see rabbits regularly quoted in market reports, so we assume there is a ready and constant market. Would you put us in touch with some commission house or someone buying rabbits regularly? And could you tell us the most desirable weight and age for marketing.—E. F. N., Wendel, Cal.

You might advertise in our columns for a poultryman or write to the University Farm at Davis. A representative of a wholesale poultry concern in San Francisco informed us that the most desirable weight to market rabbits was from three to four pounds. The price last week was fourteen to fifteen cents per pound. Any poultry commission house will buy rabbits. In regard to age for marketing, that de-

pends entirely upon method of care and feed.

Toe-Picking.

To the Editor: Can you tell me what to do for toe-picking? My chicks are 12 days old and I find a great deal of it.—O. M., Madera.

Toe-picking is generally caused from the lack of ash in the ration or insufficient animal protein. The trouble is usually started by the taste of blood, one member of the flock becoming injured, or sometimes one little fellow will think his partner's toe is a worm and give it a pick. The writer has had good results with use of pine tar. Dip the injured toe in pine tar and turn the chick loose. As soon as they pick off all the tar, apply some more. One pick at the tar will usually cure them. Some use bitter aloes mixed with water; a nickel's worth will fix a lot of chicks.

No Pullets Being Sold.

Practically no pullets are being shipped to market. Old hens, however, are arriving freely, showing that the poultrymen are culling their

flock more closely this fall than ever before. This is a good thing, as no boarder hens will be kept over this winter. How about those old roosters that are eating their heads off. If they are not valuable as breeders, sell them or eat them and produce infertile eggs.

Plant Spare Yards to Greenstuff.

Hens at this season require less range than in spring. So if you have water, dig up those unused yards and plant them to kale, beets or corn, to cut down the feed bill.

Lock Up Broody Hens.

A broody hen when locked up soon after she shows signs of sitting, will lay in a few days. Every egg counts now-a-days. Don't let the setting hen spoil a lot for you. The quickest way to "cure" a broody is to place her in a coop with a slatted bottom and feed a good rich feed.

POULTRY NOTES.

Cold storage holdings of eggs as reported May 1, 1917, to the U. S. Dept. of Agriculture are as follows: The 288 storages that reported show a present stock of 1,739,692 cases as compared with 2,327,174 cases last year, a decrease of 587,482 cases or 25.2 per cent.

There was an increase of 260 per cent in poultry held in storage May 1, as compared with stocks of the same date last year.

Eggs in cold storage in Los Angeles May 10, 1917, were 64,994 cases against 51,064 cases the same date last year, an increase of 13,930 pounds.

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By J. H. Hannell

Mrs. Best's Letter.

WEDDING GIFTS.

My Dear Friends: With the nearness of June—the month of brides and roses—perhaps some of you will be interested to know what the shops are showing for wedding gifts. To the immediate family is delegated the right to give flat silver and table linen, so it will be of other things we will talk.

Supplementary silver, such as trays, baking dishes, mustard pots, candle sticks, sugar tongs, salad sets and the like, make nice gifts and add much to the appearance of the table in the bride's new home. Silver is particularly good style now—a fact that some of us regret on account of the care necessary to keep it looking well.

Embroidered towels or pillow cases, or scarfs suitable either for dining room or dresser use, are welcome gifts and have the advantage of representing loving labor from the giver. A set of tea napkins, crocheted around the edge and having the initial in the corner, make a lasting gift and one that can be made at home at not too much expense.

In the furniture line there are attractive tea wagons in various woods and also in wicker. These can be in simple lines, with glass trays or in the more elaborate styles with a recessed top in which can be kept cups and other articles ready for use for afternoon tea. These tea wagons are useful for home meals as well as being ornamental for a company tea. These range in price from \$10 up, according to the style. Muffin stands are a novelty that might prove acceptable. These are in wicker and the hard woods and are about three feet high, with a handle to lift them around.

A nest of tables is a very attractive gift and when not in use for serving tea makes a very good looking table on which to place a vase of flowers. These nests have either three or four tables that slip out easily and make it possible to serve quite a company in a living room for a tea or a Sunday night supper. They come in teakwood, mahogany and lacquered ware. The lacquered tables come in various solid colors, with a border pattern worked out in gold or an indistinct pattern of flowers under the last finish. The prices range from \$15 up.

Lamps are having quite a revival of popularity, the ones for electricity being the most elaborate. The pedestal lamp, which is about five feet tall, with quite a solid base, is wonderfully pretty in a hall or large living room, but for the ordinary home the smaller light for the table is better. These pedestals are of metal or burnished wood in colors, old gold with soft blue and dark red being a popular combination. If the pedestal is metal, the shade may be a combination of metal and glass, but the wood pedestals are practically all surmounted with silk shades. These may be of soft shades of rose, blue, tan or gold or of flowered material. They are many times trimmed with a gilt braid and nearly always have fringe. The prices range from \$10 up.

Candlesticks of burnished wood are almost more popular than those of brass or silver. They are all simple in design and the candles are without shades. The color of the candle

THE HOME CIRCLE

depends on the color scheme of the room. These range in price from \$2.50 upward and are exceedingly good style and popular for gifts.

Mirrors make beautiful gifts and come at all prices from the large oval suitable to be hung over a fireplace or over a hall table down to the small hand glass with the long, burnished wood handle to rest upon the living room table. The last is a fad of the moment, but is very pretty while it lasts. The frames are simple in design, many of them looking like antiques. The frame is usually a dull gold in color and the prices range from \$5 up.

Pictures are good for gifts, but it is safer to confine your choice to standard prints unless you are certain of the surroundings in which the picture will be hung. Small pictures are many times framed in a pedestal frame to rest upon a table or mantel. These frames are in burnished gold with soft shadings of color harmonious to the picture.

ROSABELLA BEST.

SOME USES FOR HONEY.

To many people honey is just honey, as all sugars taste alike, but the initiated do not buy honey for its clear light color alone. The delicious honey served in Europe made from the heather is dark and thick. The buckwheat and golden-rod honeys are also dark and for cooking purposes are preferable to the lighter kinds. Of the lighter honeys the product of the clover is considered finest, and yet the orange, raspberry, magnolia, cotton and eucalyptus flavors are incomparable. The old idea that the one use for honey was as a sticky spread for hot biscuits is past. Many thousand tons are used yearly by bakeries. It not only gives a more delicious flavor, but cakes, cookies and gingerbreads sweetened with honey keep indefinitely. Honey candies are much finer than when sugar alone is used. Jams of all kinds can be made from fruit and honey, substituting honey for sugar. The fruit must be cooked before adding honey. If added in the beginning, the jam will be bitter. Stewed prunes, rhubarb and

cranberry sauce are very good sweetened with honey. Honey lemonade is also good. The Bar-le-duc preserves are easily made with honey, only taking care not to scorch the honey. These preserves do not require to be absolutely air tight, as honey is a preservative.—Mrs. A. S., Los Angeles.

ANOTHER USE FOR STALE BREAD.

Editor Home Circle: I was much interested in the article, "Use of Stale bread." I have another "use" that I think is real nice, and during these hard times when we all should be economical, thought it would help others as it does not only use stale bread but left overs from the table.

Take stale bread and crumb or cut into small pieces (not too fine), wet the crusts with a little water, cut up scraps of bacon, ham or any kind of cold meat, mashed or cold potatoes cut small, onion if you have it (good without), a little pepper and salt, and a dash of sage helps the taste. Add a little water, mix, put into a shallow pan and dot with a little meat fryings or butter. Bake until brown.

Beans, rice, corn or most any left overs can be added and is a good way to use up the scraps that probably would be thrown away.—Mrs. C. A. C., Potter Valley.

ORANGE GINGER SQUARES.

Heat together 2 cups of molasses and 1 cup of shortening, but do not boil. When the shortening is melted, take from the fire and cool. Sift 6½ cups flour, 1 teaspoon soda, ½ teaspoon salt and 2 tablespoons of ginger. Stir half of the flour mixture into the molasses and shortening, add 2 cups of home-made candied orange peel cut in small pieces, then the other half of the flour mixture. Set away to cool for 2 or 3 hours. Roll out ¼ inch thick, brush over with yolk of egg diluted with 2 teaspoons of water, cut in squares and bake in moderate oven. If the dough cannot be thoroughly chilled, use one-third to one-half more flour. All measures must be level.

CULTIVATION.

By Burgess Johnson.

My mother says I'm much too small To have a garden of my own. She says I take no pains at all To tend my plants, from spring to fall;

That's why they haven't grown. She says they can't get tall and strong Unless they're watered right along.

I want to let my mother know

That I can truly do a lot. I'm big enough to help, and so I'm making baby sister grow— She's such a tiny tot.

And things won't grow, the folks all say, Unless they're watered every day.

REMOVING STAINS.

Chloroform or benzine will remove paint stains if not too firmly fixed. In that case use turpentine.

Alcohol will not spoil the most delicate materials and is safe to use on most stains. It is very helpful for grease or pitch stains.

To remove iron rust and scorches on white clothing, wet the spots with lemon juice and salt and place in the sun.

Mildew can be removed by applying a paste of two parts soft soap and powdered starch, one part of salt and lemon juice to moisten. Apply on both sides of the cloth and put in the sun.

Grease spot on silk may be removed by placing the silk between two blotters and pressing with a hot iron and ether or benzine are good to use also.

Ink spots are very troublesome to remove. On white goods the spot may be dipped first in oxalic acid and then in hot water, repeating if necessary. Care must be taken that the acid does not eat the goods. On rugs or clothing cover the ink spot while still wet with flour, corn starch or corn meal, renewing as fast as the ink is soaked up. Then use lemon juice or sour milk.

LIVING COSTS.

The best way to dispose of left overs is not to have any. Use good judgment in amounts used and methods of preparation. Don't let the family tire of food which is wholesome and cheap by serving it in the same way. Rice may be served in so many different ways that the family will hardly recognize it. Remember that deep fat frying requires a lot of expensive fat. Better use some more economical way.

Don't throw out a little corn meal mush, cooked breakfast food, a spoonful of rice or anything of that kind. Put it instead into the pancake batter. Use bread crumbs from the stale bread to help out a meat loaf or escalloped dish, instead of in expensive puddings.

TOMATO SAUCE.

For ½ can tomatoes use ½ teaspoon soda, 3 tablespoons butter, 2½ tablespoons flour, ¼ teaspoon salt, pinch of pepper. Cook tomatoes 10 minutes, rub through a sieve, add soda, then add to the butter and flour cooked together, cook until thickened and season. This sauce is delicious for chops and cutlets and for use on baked macaroni. For the macaroni, butter a baking dish and put alternate layers of cooked macaroni and tomato sauce and finish the top with bread crumbs. Bake about 20 minutes.

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THE RETREAT OF THE ANTS

Good Health.

[By H. E. Pastor, M. D.]

The Fly Pest Again.

As the spring season advances the invasion of the disease-carrying fly becomes more and more a problem to contend with. One of the peculiarities of flies which we have seen recently brought out, of some practical use, is that odors usually pleasing to human beings are offensive to flies, and vice versa. Among these are some of our most favored perfumes, as oil of lavender, heliotrope, mignonette, geranium, etc. They are said to especially dislike white clover, honeysuckle and hop blossoms. Try a little oil of lavender mixed with an equal quantity of water and sprayed around the room.

High Food Value of Eggs.

The food value of eggs is not as fully appreciated as it should be. They are very easily digested and their nutritive value is high. Uncooked eggs have a slightly greater food value than those that are cooked. In a mixed diet they furnish the body more nourishment than a corresponding amount of meat.

Report Communicable Diseases.

The State Board of Health has sent out the following appeal to both physicians and laymen relative to communicable diseases. The Board says, and very truly, that a single uncontrolled case of this kind might result in an outbreak that would greatly reduce the efficiency of California as a war unit. War or no war, however, information relative to contagious diseases should be reported to the proper authorities. Diseases so reportable under the California law include chickenpox, mumps, measles,

malaria, diphtheria, scarlet fever, typhoid fever, whooping-cough, smallpox, tuberculosis, pneumonia, anthrax, beri-beri, epidemic cerebrospinal meningitis, Asiatic cholera, dengue, dysentery, erysipelas, German measles, glanders, gonococcus infection, hookworm, leprosy, pellagra, plague, poliomyelitis, rabies, syphilis, tetanus, trachoma, typhus fever, ophthalmia neonatorum and yellow fever.

To Soothe Tired Feet.

Into about a gallon of water pour four tablespoonfuls of ammonia and two tablespoonfuls of bay rum. In this soak the feet for about ten minutes, when they should be withdrawn and rubbed briskly with a coarse towel.

Health Notes.

Where there is a one-sided discharge from the nose of a child, suspect the presence of a foreign body.

Applications of tincture of iodine are effective in the treatment of small chronic ulcers.

Persistent vomiting is sometimes controlled by one-drop doses of tincture of iodine every half hour.

Burns.

Slight burns are very much relieved by coating with the white of egg, and more severe ones are quickly relieved by an application of olive or sweet oil mixed with lime water. Anything that keeps the air from the burn affords relief.

Headaches and Eye Strain.

It is said that a large percentage of headaches—as much perhaps as ten per cent—are due to errors of refraction, or eye strain. When this is suspected it is wise to consult



Your Wife Should Be Considered

Mr. Farm Owner:

You may have fitted up your farms and out-buildings with electric, labor-saving devices, but have you considered the *lady of the house*?

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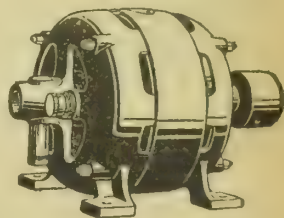
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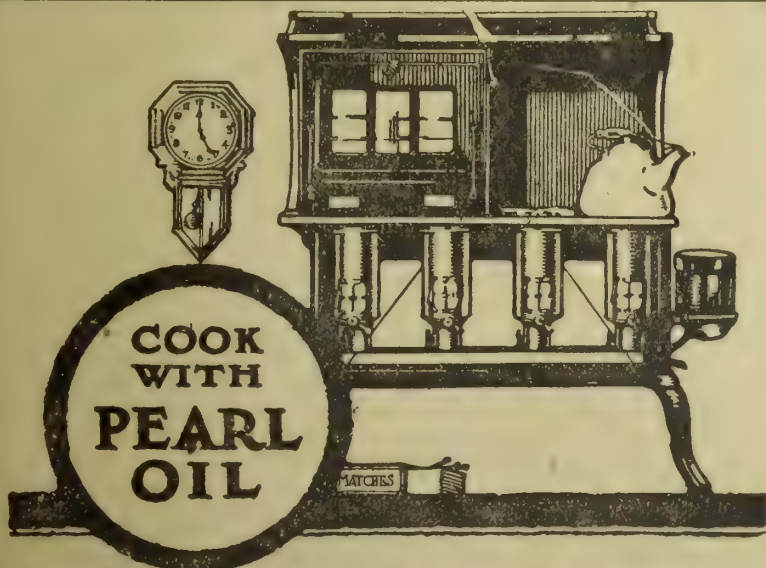
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GEO. N. TYLER, Brookdale Nursery, Los Gatos.

SAN FRANCISCO.

San Francisco, May 23, 1917.
WHEAT.

Wheat quotations were noticeably easier this week, despite a lighter offering in the market. The call here was slow, and very little trading in spot goods reported. Russian Red showed the heaviest decline. Further declines are looked for, especially in case the Eastern markets continue downward.

Konora wheat, re-cleaned.....None offered
Northern Club.....None offered
California Club, per ctl.....None offered
Northern Bluestem.....\$5.15@5.20
Northern Red.....5.00@5.20
Russian Red.....5.00

BARLEY.

Trading in futures was slower this week, and spot sales were almost unknown. One peculiar feature of the local situation was that on two days during the week, there were no receipts of barley reported for San Francisco. The market closed easier, with all signs pointing to lower prices.

Shipping, ctl.....Nominal
Brewing.....Nominal
Choice feed, ctl.....\$2.40@2.50

OATS.

In the face of no trading, the local quotation on oats is of necessity nominal. However, the highest held figure reported this week on white feed stock was \$2.85 per cental.

White feed, per ctl.....\$2.75@2.85

BEANS.

Prices on beans showed a very uncertain trend during the past week, with some varieties higher under a good call and others much easier, owing to light holdings with a marked shortage of first-class stock in them. Bayos, small whites and pinks fell in the first named class, with Mexican reds, blackeyes and garbanzos coming under the latter description. Good prices to growers on contracts continue to prevail, reported deals including limas at 10% to 10% cents per pound and 10@10% on both large and small whites.

Bayos, per ctl.....\$11.50@12.00
Blackeyes.....9.75@10.00
Cranberry beans.....11.90@12.00
Horse beans.....6.50@7.00
Small Whites (south).....16.00@16.25
Large Whites.....16.00@16.25
Pinks.....12.00@12.50
Limas (south, re-cleaned).....16.00@16.25
Red Kidney.....13.00@13.50
Mexican Reds.....11.25@11.75
Tepary beans.....None offered
Garbanzos.....6.00@6.50

CORN.

No actual changes were reported in the corn market this week, but there was a very easy tone ruling throughout and very few lots of Egyptian stock brought the top quotation.

(First-hand prices on strictly first-class grain, San Francisco.)
Eastern Yellow, ctl, bulk.....Unsettled
California, sacked.....\$3.45@3.50
Milo Maize.....None offered
Egyptian.....\$4.25@4.50

HAY.

Wheat, barley and oat hay quotations all registered small declines during the past week, although it was principally the No. 2 grades of these varieties that were affected. Increased receipts of new crop alfalfa and the untimely of interior holdings of old crop hay were direct cause of these declines. There was a very noticeable gain in receipts, arrivals totaling 1382 tons, as compared with 1135 tons for the week preceding and 1294 tons for the week before that. The local demand proved sufficient to prevent any piling up of stock, while export trading was practically nil. It is very probable that first grade holdings will be steady for some time, but the increased receipts of new crop hay are bound to weaken second and third grade goods. Plentiful offerings for delivery in this market are reported from the alfalfa raising regions, but local dealers are apparently holding back in purchasing in the effort to catch lower prices later on. Weather conditions for the past two weeks have been favorable to crops, and all sections of Central and Northern California report they will have larger yields than had been anticipated earlier in the season. None of the local merchants are willing to make predictions as to the future of alfalfa market this season, the general belief is that a successful year is before the grower.

Wheat, No. 1.....\$31.00@35.00
No. 2.....27.50@29.00
Tame oats.....26.00@33.00
Wild oats.....24.00@29.00
Barley.....26.00@28.00
Alfalfa, new, first cut.....10.00@15.00
Stock hay, new.....10.00@13.00
Straw, per bale.....1.00@1.25

FEEDSTUFFS.

The slower call for feedstuffs, due to the shortage in the country sections being relieved by the arrival of green feed, has been the main factor in bringing reduced prices on feedstuffs in this market, but it is also conceded that a number of speculators lowered their asking prices as the result of threatened government regulation of prices. Several notable examples of this are being reported on the street, with a prominent rice broker the man affected in each case. Alfalfa meal has shown the largest decline, and further drops on this offering are expected before the end of this week.

(Per ton, San Francisco.)

Beet Pulp, per ton.....None offered
Alfalfa meal, per ton.....\$33.00@34.00
Brass, per ton.....48.00@49.00
Oil Cake.....None offered
Coconut cake or meal.....\$38.00@39.00
Cracked corn.....72.00@73.00
Middlings.....58.00@59.00
Rolled barley.....57.00@58.00
Tankage.....None offered
Rolled oats.....57.00@58.00
Rice middlings.....None offered
Rice bran.....35.00@36.00
Shorts.....\$52.00@53.00

THE MARKET REPORTS

Figures Given are Independent and Reliable.
Prices Quoted as Paid to Producers.

POTATOES, ONIONS, ETC.

Most of the price changes during the past week were declines as the result of increased offerings, with one or two notable exceptions to this rule. Peas registered a sharp advance as result of an absence of fancy grades, although most of the arrivals failed to command more than \$2 per sack. Hay rhubarb was higher for the same reason. Asparagus held unchanged, although a larger percentage of the receipts were taken by canners. However, this is true every year, that as the season progresses the retail call slows up somewhat. Fancy beans from Winters have been bringing top figures. A good shipping demand again developed for potatoes, and both local and Northern old crop lines were higher. New potatoes were a shade lower under larger arrivals. Active bidding among local houses developed over new delta crop of red onions, and as high as \$2.50 per sack is being paid. Seed stock was easier, on the receipt of another large shipment from Australia.

Asparagus, per box.....\$1.50@3.25
Peas, per sack.....1.75@2.25
String beans, per lb.....6@8c
Wax beans, per lb.....5@8c
Hubbard squash, per lb.....2 1/2@3 1/2c
Summer squash, per crate.....85c@1.00
Cucumbers, per box.....1.20@1.40
Lettuce, crate.....50@75c
Celery, Delta, crate.....1.00@1.50
Tomatoes, crate.....Not enough to quote
Rhubarb, bay, per box.....75c@1.15
do, San Jose.....1.15@1.35
Potatoes, ctl, Delta.....\$3.75@4.00
Salinas.....Cleaned up
Oregon.....\$4.00@4.25
New, per lb.....4 1/2@5 1/2c
Sweets, per lb.....None offered
Onions, green, per box.....50@65c
Delta reds, new, per sack.....\$2.25@2.50
Bermuda (seed), per ctl.....1.65@2.00
Garlic, lb.....1@3c

POULTRY.

Poultry offerings were much lighter this past week, but there was no pick-up in the retail call and most quotations held without change. Both large and small hens were higher, under smaller receipts of leg-horn stock. It is said that the drop in feed stuffs quotations has caused many poultrymen to hold stock that they had planned shipping into this market. One firm is reported to have closed for a case of Eastern poultry, to be delivered here next week.

Turkeys, live, lb.....20@22c
do, dressed, large, lb.....Nominal
Broilers, 1 1/2 to 2 lbs.....33@35c
do, under 1 lb.....23@25c
do, 1 1/2 lbs.....26@27c
Fryers.....33@35c
Hens, extra, per lb., colored.....21@24c
Small leghorn.....18@19c
Smooth Young Roosters, per lb. (3 lbs. and over).....33@35c
Old Roosters, per lb.....12@14c
Geese, per lb.....19@20c
Squabs, per lb.....35@40c
Ducks.....18@20c
Old.....17@18c
Belgian Hares (live).....14@15c

BUTTER.

Butter quotations closed this week 1 1/2 cents below the opening prices, the buying support from shippers which figured so strongly in putting prices up last week having been largely withdrawn. Three cars of butter were sent East this week, but they were on government contract. No spot business of this nature was reported. Alaskan business was a partial factor in preventing further declines and Los Angeles again had to call on San Francisco to get enough butter to supply current needs. The southern city took 75,000 pounds dur-

ing the week. Storage holding of butter are still practically nil as far as permanent entries go, although there is some 100,000 pounds of short held goods in local coolers.

Thurs. Fri. Sat. Mon. Tu. Wed.
Extras.....37 37 38 1/2 * 35 1/2 35 1/2
Prime firsts.....36 1/2 36 1/2 36 * 35 35
* No session on account of funeral of James McCullough.

EGGS.

Storage activities have been lighter since last Saturday, and there has also been no Alaskan orders reported here. This, coupled with increased receipts, served to halt the upward march of egg prices and the various grades closed the week 2@2 1/2 cents per dozen lower than was paid on the opening day. Storage holdings at San Francisco are now 104,500 cases, as compared with 91,000 cases on hand at the same date last year. Two cars of eggs were shipped out of this market to Texas this week, but the differential between this market and the East is not yet large enough to bring any trading in that channel.

Thurs. Fri. Sat. Mon. Tu. Wed.
Extras.....35 35 35 1/2 * 35 32 1/2
Extra 1sts.....33 33 1/2 33 * 31 31
Seconds.....27 27 * 27
Extra pullets.....31 31 30 * 28 28 1/2
Ex. 1sts pul.....30 30 29 1/2 * 28 1/2 28
*No session, funeral of James McCullough.

CHEESE.

No quotable change during the past week, the only variation being a wider price range on Jack cheese. Three cars of this type were sent East and more lots are being worked on. A peculiar situation exists in that current receipts of Jack cheese far exceed those of either the Flats type or Young Americas. Market is firm on all types of cheese.

Y. A.'s.....25c
Fancy Calif. Flats, per lb.....22c
Monterey Cheese.....23@27c

DECIDUOUS FRUITS.

While there has been a marked increase in the arrivals of cherries, buying of fancy stock for Northern shipment and ordinary grades for local consumption has served to hold quotations about steady. Apricots are now offered in quotable amounts, with fancy grades occasionally selling over \$1.25 per crate. Apples were without change.

Apples:
Hellsflower, box.....Not enough to quote
Newtown, fancy.....\$4.50@1.75
do, ordinary.....1.25@1.40
Cherries, bul 12, per lb.....5@10c
Black Tartar, per drawer.....90@1.25
Purple Guigne, per drawer.....85@1.10
Apricots, per crate.....75@1.25

CITRUS FRUITS.

There were no changes in prices being paid for citrus fruits in this market during the week.

Oranges:
Navels, fancy, per box.....\$2.65@2.90
do, Choice.....2.25@2.50
Tangerines.....1.75@2.00
Lemons:
Fancy, per box.....3.25@3.50
Choice.....2.75@3.00
Standard.....1.75@2.00
Lemonettes.....1.50@2.25
Grapefruit, fancy.....2.75@3.00

DRIED FRUITS.

(Net to growers, bulk basis, f. o. b. shipping point.)
Business in dried fruits was almost at a standstill during the week, with lighter spot trading forced by the lack of supplies and slower futures activity as the result of stiffer asking prices from the growers.

Special Citrus Market Report

Los Angeles, May 22, 1917.

Fair and rather steady markets were had in the east the past week. The navel season drawing to a close and but few Valencia moving as yet, caused buyers to make fair purchases, but with the berry season full on and some early fruits arriving, kept the market from advancing except on special sizes. Locally the market remains dull. Sales light on everything. Even the best selling in a limited way. Fresher and newer fruits attracting attention from oranges. Local packers buying sparingly, but paying old prices for what few they are taking: Bidding 1@1 1/4c per pound in

the orchard for oranges picked. Grapefruit too, very slow sale at 1 1/2@2c per pound in the grove picked. Lemons continue dull at 1/4@1c per pound in the grove picked, for the best. Poor have to be sold for what they will bring.

AUCTION SALES.

New York, May 21.—Forty-one cars of oranges, one of grapefruit and four cars of lemons sold. Orange market strong on small sizes, higher on 250's and smaller. Steady on large sizes. Lemon market steady.

AN UNPRECEDENTED DEMAND FOR CALIFORNIA FRUITS.

The past has been a banner season for the fruit growers of California, and the season of 1917 holds promise of being still better. The California Peach Growers' Association announced last week that, with the exception of a few odd lots, it was entirely sold out on all varieties of its specialty. The 1916 crop of dried peaches is said to have netted the growers an average of 6 cents—about double the price obtained for the crop of 1915. Offers of 9 1/4 cents for dried peaches are already being made, it is reported. Owing to the prospective shortage in the apricot output, due to adverse weather conditions, that fruit is already soared to 17 cents. The prune crop, which, by the way, promises to be larger than usual, will likely command a record price, 8 cents being offered already. The Associated Raisin Company is reported to be offering \$105 per ton for 1917 raisins.

So that, taking the dried fruit situation in this State as a whole, it appears that the growers are having their long-delayed inning at last. As between buyer and seller the tables are now turned and it is the other fellow who sits on the anxious seat.

Apples, new crop.....5 1/2@6 c
Apricots, per lb.....10 1/2@16 1/2c
Figs, black, 1916.....Not enough to quote
do, 1917.....5 1/2@6 1/2c
do, white, 1917.....6 @8 1/2c
Callimyrna, 1917.....9 @10 c
Prunes, 4-size basis, 1917.....5 1/2@7 c
Prunes, 1916.....8 1/2@9 c
Pears.....6 @7 1/2c
Peaches, 1917.....7 1/2@8 1/2c

BERRIES.

While easier prices were noted on black, logan and raspberries during the week, the quotations on strawberries were firmer. The Association named a minimum figure of \$5 per chest, and found little difficulty in maintaining it.

Strawberries (per chest):
Southern.....\$5.00@5.50
Fresno.....5.00@6.00
Longworths.....6.00@8.00
Blackberries, crate.....1.25@1.50
Raspberries, per crate.....1.25@1.50
Loganberries, crate.....1.00@1.25
Gooseberries, lb.....5@6c

HOPS.

Sacramento.....5 1/2@8c
Sonoma.....4@8c
Mendocino.....7@9c

HONEY.

Prices in San Francisco:
Comb, water white.....13@15c
Amber.....5@10c
Light amber.....11@12c
Fancy white, extracted.....10c
Light amber, do.....8c

LOS ANGELES.

Los Angeles, May 22, 1917.

BUTTER.

Receipts of week ending May 22.....268,540
Receipts of same week last year.....361,830
The advance noticed at the close of our last review was maintained throughout the past week. The receipts, while much the same as the week previous, were lighter than the same week last year. The demand is also running lighter than a year ago, the high prices affecting consumption. It was a one-priced market up to Monday, Extra ruling at 35c throughout. Chicago advanced 1c on Extras up to Monday, while New York held unchanged. The stocks of butter in cold storage here May 17 were 95,508 pounds, or 49,176 pounds more than a year ago, but 10,674 pounds less surplus than the week before, showing a freer movement than the week previous and a willingness on the part of holders to let go at the prices, which are 10c higher than this time last year. Tuesday, under light receipts and higher markets East, the market was bid up 1c and closed firm at the advance.

We quote:
Extra creamery.....36c
Prime first.....35c
First.....34c
Daily quotations:
1917—Wed. Th. Fri. Sat. Mon. Tu.
Extra.....35 35 35 35 35 35
1916—
Extra.....25 25 25 25 25 25

EGGS.

Receipts (railroads) for week ending May 22, 1917, 2,813 cases.
Receipts (railroads) for week ending May 22, 1916, 3,235 cases.
A stronger market and fair trading on change was had the past week. Receipts continue to run lighter than a year ago and the markets east and north were firm. In Chicago firsts were advanced 1 1/4c up to Monday. This had a sympathetic influence upon the market here. While the consumptive demand was said to have been light, there were those in the trade still willing to take eggs to put into cold storage even at present high prices, which kept the market up. The cold storage holdings here May 17 were 68,971 cases, an increase of 15,386 cases over a year ago, a good part representing storages of receivers made up of the surplus not taken by the consuming trade. Tuesday, with firmer market East and light receipts, there was more trading on call than for some time and case count and pullets were advanced 1c. Fifty cases of extras were sold at 34c and thirty cases of case count at 33c; twenty cases of pullets at 31c.

Daily quotations:
1917—Wed. Th. Fri. Sat. Mon. Tu.
Extra.....34 34 34 34 34 34
Case count.....32 32 32 32 32 32
Pullets.....30 30 30 30 30 30
1916—
Case count.....21 22 23 23 22 22 1/2

POULTRY.

There was more life to the market the past week and the tone of the market was a little better. Receipts were very good and altogether local. But there was a better demand. Broilers and fryers were both called for more freely and are a cent higher. Heavy hens were also in good demand and steady. Light hens continue dull and weak. Roosters were slow sale and lower. Ducks quiet at last week's prices and so are turkeys.

We quote from growers:
Broilers, 1 1/2 to 2 lbs.....21@22c
Fryers, 2 1/2 to 3 lbs.....22c
Hens over 4 lbs.....18@19c
Hens under 4 lbs.....14@15c
Ducks.....15@16c
Geese.....15c
Roosters, 3 lbs. up (soft bones).....25c
Turkeys, heavy, 12 lbs. and up.....20@30c
Turkeys, light.....24@25c
Squabs, live, per doz.....\$1.50@3.00
Dressed.....3.75@4.85

NEW VEGETABLES.

The market was very well supplied the past week and the demand was fairly good for all good fresh stuff. Peas are higher under lighter offerings and so are summer squash, while onions and cucumbers remain steady. Cabbage, new potatoes and string beans are all lower. Beans in fair demand, but cabbage dull. Offerings liberal and shippers buying sparingly even at lower prices. Asparagus coming less freely and higher.

We quote from growers:
Cabbage, per cwt.....\$1.50@1.70

Special Livestock Market Report

San Francisco, May 23, 1917.

CATTLE—Arrivals of cattle about equal the demand, resulting in a fairly steady market.

Grass steers, No. 1, weighing 900 to 1200 lbs. 8 1/2 @ 9c
do, weighing 1200 to 1400 lbs. 8 1/2 @ 9c
do, second quality 8 1/4 @ 8 1/2 c
do, thin, undesirable 7 @ 8c
Grass cows and heifers, No. 1. 7 @ 7 1/2 c
do, second quality 6 1/2 @ 6 3/4 c
do, common to thin 6 @ 6 1/2 c
do, undesirable 4 @ 6c
Hay-fed cattle 1/2 c to 3/4 c higher
Bulls and stags, good 6 @ 6 1/2 c
do, fair 5 1/2 @ 5 3/4 c
do, thin 4 1/2 @ 5c
Calves, light weight 8 1/2 @ 8 3/4 c
do, medium 8 @ 8 1/2 c
Heavy 6 3/4 @ 7 1/2 c

SHEEP—The offerings of lambs and sheep are somewhat lighter this week, and the quality of the stock coming is not so good. The market is firm.

Yearling lambs 12 @ 12 1/2 c
Milk lambs 12 @ 12 1/2 c
Sheep, unshorn wethers 11c
do, ewes 10c

HOGS—Hogs are being offered in diminished numbers and the market is strong.

Hard, grain fed, 100 to 150 12 1/2 @ 12 3/4 c
do, 150 to 300 15 1/4 @ 15 1/2 c
do, 300 to 400 14 1/4 @ 15c
Dressed Meats:

Steers, No. 1. 14c
do, second quality 13 1/2 c
Cows and heifers 12 @ 13c
Calves, as to size, etc. 12 @ 14c
Lambs, suckling 19 @ 20c
do, yearling 19c
Sheep, wethers 18c
do, ewes 17c
Hogs 19c

Los Angeles, May 22, 1917.

CATTLE—Grass cattle now make up most of the offerings. Killers are bidding 50c lower for everything and are not urgent buyers at this decline. The beef market is quiet and killers are not anticipating their wants. But with firm markets East the country is not offering so freely at the decline. California and Arizona continue to furnish the supply and what steers coming in are in fair condition. Calves continue dull and weak.

Per cwt. f. o. b. Los Angeles:
Beef steers, 1000 to 1100 lbs. \$9.00 @ 9.50
Prime cows and heifers 7.00 @ 7.50
Good cows and heifers 6.50 @ 7.00
Calves, per cwt 8.00 @ 9.00

HOGS—Not so many coming in and choice grain fed hogs are higher and in

Asparagus, lb., local and northern 7 1/2 @ 8c
New potatoes, per lb. 3 @ 3 1/2 c
Peas, northern, per lb. 5 @ 6c
do, local, per lb. 4 @ 4 1/2 c
New onions, silver skins and Bermuda, per crate \$1.50 @ 1.60
String beans, wax, per lb. 5 @ 6c
do, Kentucky Wonders, per lb. 7 @ 7 1/2 c
Summer squash, per crate of four baskets 90c @ \$1.00
Cucumbers, per box of 2 1/2 to 3 dozen 85c @ \$1.25

HAY.

Market quiet. New hay coming in more freely and sales draggy. Some shipping demand for alfalfa from the country. Local dairy people are buying but little hay, using mostly green alfalfa. Old grain hay scarce and what little coming in selling fairly well. Receipts, 106 cars.

We quote f. o. b. Los Angeles, old crop:
Barley hay, ton \$21.00 @ 23.00
Oat hay, ton 22.00 @ 24.00
Alfalfa, northern, per ton 18.00 @ 19.00
Alfalfa, local, ton 20.00 @ 21.00
Straw, ton 11.00 @ 12.00

BEANS.

The past week was another quiet one in this market. Prices show no changes; there was no buying outside of filling some seed orders. The consuming trade keeps out of the market at present high prices, but holders are independent claiming that growers will need about all in stock for seed.

We quote from growers:
Limas 18c
Large white 17c
Small white 16 1/2 c
Pinks 13c
Blackeyes 10 1/2 @ 11c

FRUITS.

The market is now well supplied with early fruits and they are selling fairly well. Cherries are attracting most attention. They are coming in more freely and are a little lower and demand only fair. Loquats in fair demand, but as receipts are improving the market went off a little. Apricots from the Imperial Valley are ar-

very fair demand. Plenty of light and half fat hogs offering; hogs that are being forced to market by the high price of feed. Such remain unchanged. But as Eastern markets continue high, killers are compelled to bid up pretty well for all really good hogs and they continue to command a premium. California and Arizona furnished most of the supply.

Per cwt. f. o. b. Los Angeles:
Heavy, averaging 250 @ 300 lbs. \$11.50 @ 12.00
Mixed, 200 @ 250 lbs. 12.00 @ 13.00
Light, 175 @ 200 lbs. 12.00 @ 13.00
Rough docked 20 pounds, piggy sows 40 pounds and stags 40 per cent.

SHEEP—There is no change to note in this market from a week ago. Killers, while all in the market, and wanting a few muttons and lambs, were not urgent buyers. But as the Eastern markets are holding up well they are paying old prices for such as they want. There continues a lack of snap to the market, however, high prices affecting the consumption of mutton and lamb.

Per cwt. f. o. b. Los Angeles:
Prime wethers \$ 9.00 @ 10.00
Prime ewes 9.50 @ 10.00
Yearlings 10.50 @ 11.00
Lambs 13.00 @ 14.00

North Portland, Ore., May 21, 1917.

CATTLE—Only a few loads of cattle were on today's market, which sold from steady to strong prices. Demand was rather light, being mostly from small killers and feeders, large killers being out of the market on account of the heavy purchases made during the last week. All good to prime cattle are selling steady, with the highest time of the year. One load of strictly top heavy steers brought \$10.50, medium steers at \$10.15, while a load of 1050-pound steers went to feeders at \$10.00, which made up practically all the trading in the steer division. Strictly top cows sold from \$9 to \$9.25, with medium kind at \$8.50 to \$8.75. Common and ordinary dairy cows are selling probably 50 cents lower than two weeks ago, although there was a strong market on this grade today, being from \$5.00 @ 7.00; bulls are steady, with an \$8 top.

HOGS—Hog prices have advanced another 10 to 15 cents today, establishing a new record with a \$16.25 top for one load. The bulk of hogs sold at \$15.90 to \$16, with a couple of loads at \$16.10. Pigs were unchanged at \$13 to \$13.50.
SHEEP—A load of shorn, east of the mountain sheep were on the market today. Yearlings selling at \$11.00, with ewes at \$9.25. Sheep receipts continue very meager, while there is a light demand.

Living daily and meeting with fair sale. Gooseberries are steady and in fair demand.

We quote from growers:
Avocados, per doz. \$4.00 @ 5.00
Loquats, per lb. 5 @ 8c
Cherries, black Tartarians, per lb. 10 @ 13c
do, Chapmans 9 @ 10c
do, Soft White, per lb. 5 @ 7c
Gooseberries, per lb. 1.7 @ 8c
Apricots, per 4-basket crate, as to pack \$1.20 @ 1.50

BERRIES.

A steadier market was had the past week. Strawberries have gotten down to a price that canners are taking them and the market the past week showed no change in price. Receipts very good and demand fair. Blackberries are coming in more freely and are a little lower. Raspberries steady.

We quote from growers:
Strawberries, poor to choice, 30-basket crate \$.90 @ 95c
do, fancy, 30-basket crate \$1.10 @ 1.15
Blackberries, per 30-basket crate. 2.40 @ 2.60
Raspberries, per 30-basket crate. 2.50 @ 2.75
Loganberries, per case 2.00 @ 2.25

Classified Advertisements

Rates in this directory, 3c per word each issue; or if carried weekly for one year, 2 1/2 c per word.

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BULL TRACTOR FOR SALE—Ranch leased; used tractor only once; guaranteed good as new; best buy on the market. Walters, 1647 Manhattan Place, Los Angeles.

WANTED TO BUY—CANARIES—1 Coolidge Place, off Jackson, San Francisco.

WANTED.

WANTED—A furnished house in the mountains at an altitude between 2,000 and 4,000 feet for a month or six weeks from June 15; must have at least four bedrooms and one bath room; also outbuilding for garage; telephone or reasonably near telephone station, but not in town; readily accessible by automobile; attractive view and surroundings, preferably near running stream and near forest. Reply, stating rental asked, to Box 570, Pacific Rural Press.

HERDSMAN WANTED—For purebred Short-horn herd; man capable of managing herd and conditioning and fitting animals for the show ring. Apply Box 580, Pacific Rural Press.

WANTED—Young men and women to attend the Western Normal Courses—Normal and Academic. The Normal Course gives an adequate preparation for teaching, at a great saving in time and money. Academic course gives practical finish to education. Write for Bulletin "A," Western Normal, 524 E. Market St., Stockton, Cal.

EXPERIENCED, reliable couple want position, orchard and ranch, \$75, found. Box 560, Pacific Rural Press.

COUNTRY LANDS.

DEEP LOAMY RIVER BOTTOM—25 acres alfalfa, 30 wooded pasture; irrigated; big barn; thirty good cows; Vina Ranch bulls used five years. Manuel Vetter, Los Molinos.

175 ACRES, near Princeton, Colusa county. Two years in rice. This season Egyptian corn. Price right. James M. Berry, 118 West Walnut St., Lodi, Cal.

STEVENS COUNTY—Logged-off land where stock-raising and dairying pay. Free booklet. Phoenix Lumber Co., Crop Department, Spokane, Washington.

270 ACRES good grain land; no improvements; five miles to Ryer warehouse; \$45 per acre; terms. Address Owner, Box 403, Merced, Cal.

STATE, GOVERNMENT AND INDIAN LANDS—Bargains overlooked. Free New Blue Booklet. Joseph Clark, Sacramento.

Labor Exchange.

This department will print liners (not to exceed twenty words) free, one time, for farmers wishing to secure labor, and laborers wanting to get positions on farms. It is distinctly understood that the Rural Press does not undertake to vouch for or assume responsibility in any way concerning transactions which may result between employer and employee. Our desire is to bring the farmer and laborer in touch during this emergency. Copy must reach this office by Tuesday to appear in issue of Saturday following.

WANTED—Employment for self and team for months of June, July, August. J. N. Garrison, R4, Box 70, Watsonville.

Publisher's Department.

During the past week we added 208 new paid subscribers to our list. We believe

this week's issue will be of particular value to new as well as old subscribers. The special articles on fruit, agriculture and livestock—the editorials and queries and replies, the markets, as well as other features, make this edition well worth the price of two cents per copy.

"I find the Pacific Rural Press the best farm paper printed. Quite often one issue is worth the price of a year's subscription."—W. M. Rickard, Sebastopol.

Have you secured a copy of the book, "Second Thousand Answered Questions in California Agriculture." This book is needed every day on your ranch. Price, \$1.50 postpaid, this office.

Enclosed you will please find \$1 for one year's subscription to the Press. One year ago a fellow somewhat seedy in appearance walked over my ranch and found me at its farthest point. I wanted a good farm paper, published on the Coast (as I was but a few years from the East). I looked him over, gave him a dollar, with a doubt if I would ever see any paper. I have carefully perused every number and it has been universally read in my office and I must say I think you are giving more for the money you get—more real intelligent help to your patrons, whatever their line may be—than any other paper I have ever taken. And you are heart and soul with the newcomer to put him right; and the last six lines of your editorial in May 19th issue strikes me as the most sensible expression of the farm hegira that I have read. Go to it in your good work.—A. E. Clutter, Los Angeles.

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DEPT. A-17

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CALIFORNIA LAMBS AT LOWEST POSSIBLE COST.

An observant stranger has been among us. He came, he saw, and carried away with him some decided convictions. This stranger was Eugene Grubb, the world-famous potato specialist. But Mr. Grubb's vision extends beyond the potato field out into the expansive stock range. Speaking to an interviewer in Chicago after his recent visit to California, he remarked with some enthusiasm that California had advantages of feed and climate for lamb production unrivaled anywhere else in America. He said that the sheep and cattle of Australia and Argentina had been depleted by drouth and the heavy demand. In California sheep do not suffer from stomach worm as in the Middle West. Climatic conditions in this State make it possible for ewes to drop lambs in November and December, that run on grass during the winter, and milk lambs are ready for market in March, April and May—coming in ahead of the Tennessee and Kentucky crop. The cost of their production is so low as to defy competition.

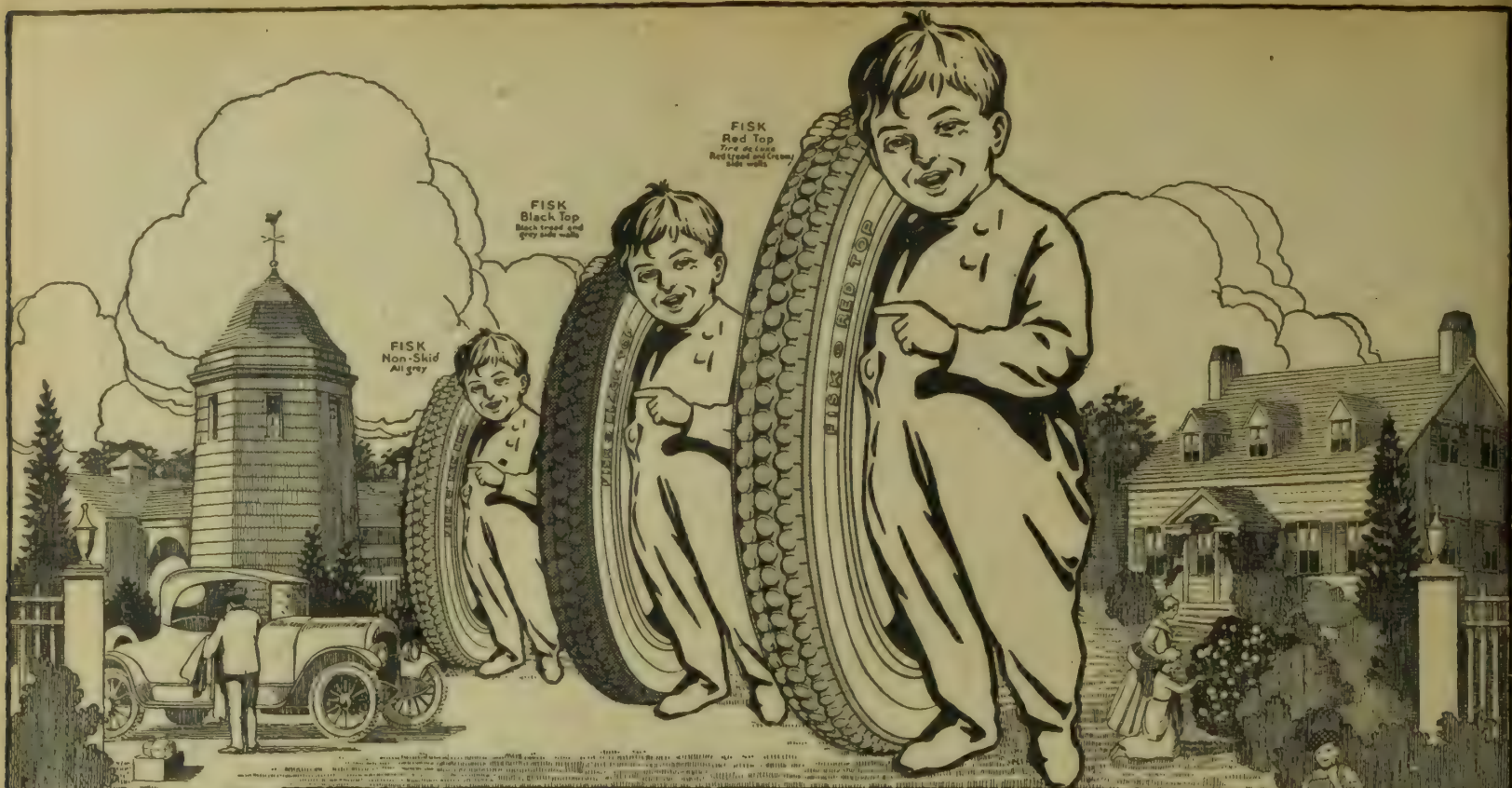
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Los Angeles



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Time to Re-tire?
(Buy Fisk)

THE PACIFIC RURAL PRESS

SAN FRANCISCO

JUNE 2, 1917.

LOS ANGELES

Turlock People Working Out the Labor Problem

[Written for Pacific Rural Press.]

A CALIFORNIA hobo said with some truth that he had to quit his job to get a bath. Over 1,000 carloads of cantaloupes were lost in the Turlock district last year for lack of labor at harvest time. Still, we scarcely believe the hobo had quit work in that district, for a free swimming pool, with dressing rooms and running water, was established by the people of Turlock last year. As W. T. Winter says, the hot weather makes a fellow sweat and cake up with dust so he wants a bath at noon, and needs it every night. That is why David F. Lane, general manager of the Turlock Merchants and Growers, urges each farmer to spend five dollars, if necessary, to run a pipe from the discharge of his tank through the side of the tank house and cap it with a tin spray to give the men a quick shower bath when they are hot and dusty. It will make them more efficient and they will stay longer. A slatted platform and a canvas curtain around it would be desirable.

BOARD OF TRADE EMPLOYMENT AGENCY.

Last year, says Mr. Lane, they could have used 500 more men at Turlock. Early in the season many farmers came to the T. M. and G. with their tales of labor shortage. The Turlock Board of Trade was converted into a free employment agency. Secretary S. T. Webber of that body placarded the store windows and streets; the local papers published the announcement; and the first day the Board of Trade rooms were overrun with men seeking work. By the next day farmers began coming or phoning in for them; the third day all the laborers were placed and Mr. Webber began pleading vainly with the two or three score loafers around cigar stands to help the farmers. That's the class that ought to be drafted first into hard work, for they would make poor soldiers.

SLEEPING QUARTERS TO ATTRACT HELP.

In March of this year the situation promised to be far more serious, for it seemed that the cantaloupe crop would double last year's shipments of 3,522 cars from the Turlock district. So the Board of Trade appointed a committee to prepare in advance to attract real workers to Turlock. Plans made by the G. W. Hume Co., canners at Turlock, whose increasing output requires more dependable and permanent labor, have materialized into the colony of 21 neat \$450 houses and children's playground. Each of the houses has two rooms, plastered and wainscoted, fitted with gas, electricity, running water, and is fitted up for light housekeeping. Shower baths and toilets are provided. The Board of Trade committee has proposed a ridiculously inexpensive set of sleeping quarters to house 100 men per night, and a similar set, under a competent matron's supervision, to shelter 120 women—all to be ready before cantaloupe harvest.

Mr. Lane describes the proposed men's quarters about as follows: The rooms are to be about 6x8 feet, screened on all sides above three-foot

walls. These walls are to be eight inches above the floors, which will be sloping. They will not be swept out, but will be flooded out by water under pressure, so inmates will not leave their belongings on the floors. A lockable wardrobe is to stand in one corner. A small room will be used to fumigate blankets, and everyone must take a shower bath before using a room. The charge will be about 10 cents, but the occupant will be offered and must take work within twenty-four hours, so bums will not be encouraged. The lodging place is designed to attract workers to

Turlock. Shower baths will be free; also handball and tennis.

A free employment bureau will be operated in connection. Farmers will notify the agency of their needs, and men will be sent or taken to the work. Last year farmers took men several days ahead of their needs in order to be sure of them, and made satisfactory arrangements for their idle time. This is unlike the Santa Clara farmer who laid off a crew because cool weather had prevented his fruit from ripening, and after warm weather came that night scoured the country for another crew.

BETTER QUARTERS REQUIRED.

With California farmers depending this year much on city folks, high school students and others accustomed to sleeping on beds, it behooves everyone to provide something as cheap and sanitary as possible. The ones proposed above, or even cheaper, can be put up at slight cost on short notice on any farm. For more permanent quarters, C. J. Colburn and W. T. Winter have good samples. Most everyone in this district has a water tank on a tower or tank house. Mr. Colburn's is a tall one, the tank being set above a room about 12 feet square, which is over the room used for separating milk, washing dairy utensils, etc. Two regular men sleep in the upstairs room, which is nicely floored and reached by a good outside stairway. A window and door on one side and a window on another make this room much more desirable than one on the ground floor. The extra cost of stairway and floor, including labor and material, was not over \$20. Such a room may be made as attractive as the men wish.

A more elaborate outfit is provided on the Winter ranch. Mr. Winter's son and daughter lived in the nicely floored and wainscoted ground-level room

under the 3,000-gallon tank for quite awhile. At another time, a laborer was housed here instead of letting him go to the barn. It is now used as a wash room, but will be cleaned up and furnished with cots for men during hay harvest.

High up on the south side is a metal tank holding perhaps 150 gallons. Water runs into this from the main tank and warms up in the day's sunshine. A pipe conveys it to the shower bath in a 5x10-foot lean-to on the north side of the tank house. Here is also a patent toilet and a

(Continued on page 681.)



Upper: Middle story of tank house made the most comfortable room on the C. J. Colburn ranch. Fitted up at small cost for two men who work here steadily. Hired help in this district is generally well provided for. Temporary quarters for unemployed labor are proposed by the Turlock Board of Trade.

Lower: Some of the 21 cottages being built for the G. W. Hume cannery at Turlock to attract and hold a good class of helpers through the season. A matron will take charge of all children in the commodious, well-equipped playyard in foreground. Shower baths and all sanitary conveniences furnished.

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EDITORIALS

FARMERS ON DEFENSE COUNCILS.

THE convention of real farmers held in this city last week passed a resolution expressing a conviction that the millions of their sort of people ought to be represented on the National and State Defense Councils by members of their own kind in addition to the farming approximations now sitting thereon. We thought of making that claim some weeks ago when the membership of these Councils was first announced, but passed up the thought when we reflected that if the real farmers wished for representation they should make their own call for it. Besides, we are a little scared about this whole war business. It makes us shiver to remember how many hyphenated subscribers we lost when we promptly denounced the Kaiser for his outrage on Belgium and we have no desire to offend the defending Councils by swinging to the other extreme in questioning their representative characters. It would make us very sad to be forced to study the sea gulls through the bars at Alcatraz fortress and to be denied even a pad upon which to inscribe these paragraphs—so comforting to ourselves and so distressing to our readers. In fact, we are timid of Mars in all his manifestations. But as the real farmers have risen in their own behalf and called for their representation, as such, on these great Councils, we cannot be so slack as not to insist that they are right in making such a demand. And our wonder is that the oversight which made it necessary for them to do this could have possibly occurred. It is a surprise that the country's need of increased food production should be proclaimed first and greatest of all her needs and not a man or woman directly doing such production called to the Council to plan for and promote it. It is also a little humiliating that the real farmers should need to proclaim their relation to the defense of their country, but it had better come that way than not at all. The fact seems to be that, though other classes may view their farming fellow citizens with appreciative complacency and even bestow upon them genuine and generous cuddling, they are quite apt to overlook the masterful citizenship of the American farmer, not through discriminating design but because of their own excess of self-consciousness. If this be the case, then self-assertion on the part of the farmer seems to be the only avenue to recognition of his civic standing.

COUNCILS PRESUMABLY REPRESENTATIVE.

WE ARE not suggesting that farmers deserve different consideration than other citizens because they are farmers. There might, of course, be alleged an argument that their vocation is more basic and indispensable than others and therefore, etc.—but we are not following that line now. The point we make depends upon the presumption that appointments to Councils of Defense were made because those honored were not only good and true citizens in themselves but because they represented something. For instance,

in the published list of the members of the State Council of Defense there are two representatives of organized labor, to which we are not at all objecting, and there is one described as a "farmer," but he is rather better known for his love of statesmanship than of the soil. We recognize others, of course, as owning land and sometimes gaining and sometimes losing by the performance of land, but farming is not the activity in which the State at large knows them, nor do they live a farmer's life upon the land they own. But it may be claimed that these persons are just as near to real farming as the labor representatives are to real labor—but we brook no such scoffing in this discussion. If we concede that near-farming and near-labor are equally represented, we still have the main contention untouched. Again, the personnel of the Council is overwhelmingly from the large towns—the country town and the whole country-side being practically unrepresented. For this reason also we are inclined to approve the claim made by the farmers, as cited above. We would feel much better about it if two or three more members had been called from their homes on farms, orchards and vineyards to take part in the councils of the State. In the pursuit and conservation of certain public interests, citizens from such life and environment must be more experienced and wise and not less devoted and patriotic than those who have been already called to honorable service.

HOW REAL FARMERS WERE PASSED OVER.

WE ARE not contending that any loss or danger has been incurred by the oversight of provision for direct farming representation on Defense Councils. There is nothing in the fact from which the enemy can take either aid or comfort because the farmers will do their duty to the limit, even if they had nothing to do with the definition of it. Nor are we suggesting that the omission of farmers was designed or intended by those making appointments for systematic defense. The whole explanation of the omission is simply this: real or actual farmers do not rise in the public eye as entitled to representation. In the public view representation of near-farming is just the same as of real-farming—and the public is not to blame for lack of insight, because it has not been trained to discrimination. And who is to blame for this lack of training? The real farmers themselves, of course, and none other. On the other hand, who is to be credited with the fact that organized labor is so amply represented? None other than the laborers themselves, who organize for just this purpose: the recognition of the interests of labor in the public mind—for all the advantages they have secured, individually and in groups, have followed as corollaries of the main proposition. In the promotion of their contention for a place in the sun of public recognition labor organizations have developed initiative, confidence, self-reliance and resources of their own. We do not hesitate to credit labor organizations with the embodiment of the true American spirit, as no other element of our industrial citizenship has secured it in organized form—even though they have in too many instances done things which are un-American and inhuman.

SELF-HELP AND DONATION.

IF WE had space we would like to review the efforts at organization by farmers and by laborers during the last half century and to try to explain why one group had failed of the goal and the other so fully arrived. We have convictions on that question from close observation of the two groups of efforts during the period indicated. We may hold forth thereupon at some other time. Just at the moment, and like a school master, we declare success on the one hand to have been due to the possession of business sense; and failure, on the other hand, to have been due to the lack of it. Take this parable:

There were two preachers who went forth to preach. Both were full of grace and love for the souls of men, and both found fields for work. One figured closely and self-denyingly the needs of his family and carefully the resources of the parish and declared that he would preach for \$600 per year. The other said that as it was the Lord's business, he would set no price but would preach

for what was provided. So they promised him \$400 a year and a "donation." And the seedtime and the harvest were the first year and the winter approached. The preacher who had set his price had collected his due, laying beside him in store dried apples, spuds and cordwood, when offered in lieu of cash, and balanced his account with his parishioners. The preacher who trusted the Lord's people to provide received \$200 in cash during the year, always with promises for making up deficiencies at the "donation." And all the people came at length to the "donation" with appetites fresh from the whetting: each family ate what another had donated, and whatever else the parsonage pantry possessed besides—leaving, as the net income of the donation, a few inedibles and unwearables, sight of which caused the preacher's wife to weep.

Obviously the unbusinesslike preacher typifies the farmer who ministers to public needs for whatever return the public provides, and in the end has neither dried apples in his attic nor spuds in his cellar and he hauls all his cordwood to town to pay his taxes. To him, in compensation for such lacks, there come, however, "donations" of good advice, inviable seeds, favors which he should have secured as rights, loans to replace profits which he should have insisted upon as a fundamental factor in production—and all that. In all such ways are manifested the farmers' lack of business sense, and as a penalty thereof they can show neither initiative, self-confidence nor resources of their own and naturally have never gained recognition as representative of anything real and independent in the world. Still they must minister and when a situation arises in which it seems necessary to public spirited citizens that, for public supply and safety, they should publicly state their needs and convictions, they are offered the cost of traveling to such assembly by a generous wholesale grocers' association—which, however, about half of them creditably refused to accept. When, then, it is asked why the real farmer is overlooked as representative of anything, the answer must be: because he does nothing forceful and businesslike for himself: because he is too willing to work as long as he can by public grace and donation.

DEAN HUNT ON WAR NEEDS AND DUTIES.

BUT NOW, to the reader's relief and our own, we break away from this sort of preaching and take up something very concrete and suggestive, and that is a special circular issuing from the College of Agriculture this week giving in a preliminary way some of the conclusions by Dean Hunt, based upon a special inquiry under his direction which was made by eight visiting parties which conferred with farmers in nearly all the counties of the State during the last two weeks of April. It is a 20-page circular, the possession of which requires only a postal card application to the college at Berkeley. Those who have read the several utterances by Dean Hunt which have already appeared in our columns, and which have conveyed many of the facts and lessons collected in this circular, need to be told of the seriousness, in fact almost solemnity, with which he is himself rendering the patriotic service which he impresses upon others. Our readers who send for the circular will find the reading of it something of a relief from the levity with which we approach profound issues: in fact, we find it such a relief ourselves. In order that the reader may have in a nutshell the convictions of duty and opportunity which Dean Hunt derives from his profound contemplation of fact and lesson disclosed by the inquiry, we give his conclusions concerning the tasks which lie before the Committee on Resources and Food Supply, of the State Council of Defense, as follows:

To bring the labor resources of the cities in touch with the labor needs of the country by a family to family canvass of both city and country and to act as a clearing house for this information.

To organize tractor garages or similar methods of giving the farmers more power.

To urge city capital and city people to engage in the production of food in the open country, particularly on those lands on which water has recently been made available.

To further promote plans of meeting the livestock situation and to promote a larger use of the abundant supply of fish which can readily be increased.

To furnish organizations of women with information concerning the conservation of food and the elimination of waste and to impress upon them

the great possibility of promoting economy in food and clothing and in eliminating such indulgences as are not strictly necessary to the best welfare.

To assure the producer that whatever food control may mean that prices of food products can not appreciably decrease in the next two years, and to warn the consumer that the sooner he adjusts himself to the present or higher scale of prices the better it will be for him and for the cause for which this country is fighting.

The solemnity of Dean Hunt's view of the situation is, however, not shown by his category, but by his own aspect of it. In concluding his circular he writes this:

And now, finally, the pity of it all is that very little attention will be paid to most of these recommendations. There will be in the hands of the American public during the next two or three years more money and instruments of credit per capita than there ever were in any nation of the world, and there is every reason to believe that this country is to witness the most prosperous times and the most riotous living that it has ever known. In the meantime it is our allies who will suffer. "For what shall it profit a man if he shall gain the whole world and lose his own soul?"

PRICE-FIXING THE PRODUCERS' DEFENSE.

OF COURSE, Dean Hunt is right that there is danger that America, in the flush times which are surely coming, may lose its own soul by greed and indulgence while saving allied nations by abundant food and munitions. It is

the duty of every man to safeguard his soul and we hope he will do it by religious devotion and righteousness. To us the chief present danger to the farmer is not of losing his soul but of losing his crop, while other men are imperiling their souls by greed, falsehood, speculation and speculation. Although some productions will be high everywhere and others will remain high somewhere perhaps, there appears to us imminent danger that two things may happen: first, that speculation may gather inordinate profits in distribution of products capable of long movement; second, that local oversupply of heavy and cheap products may cause loss to producers who have responded too actively to the spur of stimulation. We can see in government control of minimum and maximum prices the only safety of the producer from loss, and the consumer from extortion. If the farmer has to pay more for taxes and for everything he buys, including labor, he must be assured not only that prices will cover the outlay, but that he gets his fair share of the price which the consumer pays. When the farmer becomes his own distributor and price-fixer, if that day ever shall arrive, he may protect himself, as manufacturers do, but as things now are we see no safety for him except in the assumption by the government of the function of price-fixing, as outlined by President Wilson in our last issue.

they are, fully grown, when they make earthen cocoons in the ground and transform into long, slim beetles which are called skip or click beetles, because they snap themselves over when laid upon their backs. There is nothing to do for the pests now. They have probably already done their worst for this year's crop. As soon as you get the corn off, plow up the soil dry, leaving it rough to dry and burn in the sun as much as possible. Put on barley or some other grain next year and this will clean the ground of these pests so that their injury to corn will not be noticeable until they have time to multiply again. Rotation of crops is the best way to escape them.

Sudan Grass Hay.

To the Editor: Can you inform me through your columns, the proper time to cut Sudan grass for hay and the method of curing, and what quality of feed if properly cut and cured?—E. L. W., Hopland.

The grass should be cut for hay when in full bloom. It is handled like other hay. Readiness for putting in cocks and curing in cocks before stacking or putting in the mow will of course depend upon the local conditions of moisture in the air. Local practice will therefore be about the same as for handling other rank-growing and thick-stemmed hay plants. In good hay weather, one or two days flat and three or four days in the cock will make it safe to stack, but the grower must use some judgment of conditions, of course. Feeding value of Sudan hay is about the same as of other grass or coarse grain hay. It will support work stock. It is inferior to alfalfa and other clovers for growing animals and for dairy cows.

To Hit Aphis and Codlin.

To the Editor: My apple trees are slightly infested with brown aphis and as I am going to spray with arsenate of lead, would like to know if there is anything I could add to the spray to kill the aphis without injury to trees or fruit.—Subscriber, Los Angeles.

You can add one pint of 40 per cent nicotine tobacco extract to 150 gallons of dilute arsenate as prepared for spraying.

Wireworms and Salt.

To the Editor: Please tell me what to do for wire worms in cabbage? They eat the outside and inside of the root, just leaving a woody strip and are killing a great many plants. I would also like to know about salt as a fertilizer for soil.—Subscriber, Tolhouse.

Nothing can be done by trying to chase a wireworm to its lair in a cabbage stalk which would not kill the plant. You must plant next time on clean ground or clean up your old ground by summer plowing and grain growing. Salt would kill a wireworm if you got it on his tail, but it would also kill all plants it reached in sufficient quantity. All such warfare upon wireworms has failed. Salt is not a fertilizer at all. It is a plant poison.

Summer Spreading of Manure.

To the Editor: I expect to finish cultivating my peach orchard about July 1st, and am thinking of spreading the manure that has accumulated since I last hauled out in February rather than leaving it in a pile behind the barn as usual. Will the direct rays of the sun take the strength out of the manure lying spread in the usual way any more than it will in a small pile? Or can it have any bad effect on the trees if not spread too thick?—H. N. H., Sanger.

It will not hurt the manure. In fact, it is likely to be better preserved by drying than by keeping in piles where it runs the risk of quick fermentation and loss. It will not hurt the trees. It may help them by preventing loss of soil moisture by evaporation during the long summer and autumn.

California Weather Record

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau at San Francisco for the week ending at 5 p. m., May 29, 1917:

Stations—	Rainfall Data.		Temperature Data.	
	Past Week.	Seasonal To Date.	Normal To Date.	Max'm. Min'm.
Eureka .....	.02	31.27	44.84	54 46
Red Bluff	1.30	19.24	24.61	76 48
Sacramento .....	.06	12.94	19.91	78 46
San Francisco .....	.03	15.78	22.06	60 48
San Jose .....	.04	12.61	16.67	72 40
Fresno .....	.00	7.25	9.64	76 44
San Luis Obispo .....	.04	23.00	20.36	64 46
Los Angeles .....	.00	15.06	15.55	68 46
San Diego .....	.07	10.11	9.96	64 50

By the Editor
QUERIES AND REPLIES

Inquirer Must Give Full Name and Address

Moles in the Garden.

To the Editor: I have an animal in my garden which acts something like a gopher except that sometimes it goes along under surface and breaks up the ground enough to see its trail. How can I catch it? It ruins the young vegetables.—P. S., Oakley.

It is a mole. Nature lovers exhort gardeners to enjoy having a mole because it is his nature to eat ground-pests like mole-crickets, etc., and because he does not eat plants. But we do not like a mole any better than you do. The way they upset plants and destroy a young lawn is very exasperating. As to a mole being really a friend of the gardner, we would rather have several enemy gophers than one friendly mole because we can rid ourselves of them more easily. You cannot poison a mole because he will not eat fruit or vegetable baits. It is easy enough to get a mole if you happen to have a spade, or some other weapon, when he is humping up the surface. Nature will tell you how to do that. But our experience is: that a mole very seldom decides to work when we decide to watch—and then while we get busy at something for a few minutes he will run a hundred feet in soft ground and we will get back just in time to see the streak and the upset plants. A mole makes us madder than a gopher does and gets us nearer to the swearing line. The seedsmen have mole-traps which will work well when the animal comes back the same way—which he may decide never to do. It is that way with a mole which is "somewhere" in our new lawn at this moment.

Nitrate and Superphosphate.

To the Editor: What is the best time of year to use nitrate and superphosphate in orchards, and what deficiency of the soil does it supply? What quantity will be effectual per acre?—A. L. H., Arbuckle.

As both products named are soluble and therefore readily available, the theoretical time for application is a little in advance of the active growing season of the plant to which it is desired to minister. This is subject to some modification owing to the fact that though both are soluble they differ in their attitude toward soil water. Superphosphate is not readily leached from the soil while nitrate is quite disposed to go with the water and out with the drainage or too deep for the feeding roots of the plant. Therefore superphosphate can be applied in the fall without fear of loss, but nitrate, except for plants which are active winter growers, should be applied after heavy rains are over and spring growers ready to

use it. As for quantities per acre there is variation according to the conceived conditions and needs of various plants, but roughly it may be said that basic amounts would be something like 400 pounds of superphosphate and 200 pounds of nitrate of soda per acre. These amounts may be often considerably increased to advantage, but there is more danger of excess with nitrate than with the other.

When to Cut Grain Hay.

To the Editor: Please tell when these things should be cut for hay: Sowed barley or oats, volunteer barley and oats, and volunteer oats. Also what condition is best for horse hay and for stock hay and for baling.—R. V. R., Newark.

We are not aware that weighings and analyses have been made in all these cases to show how maximum crop is related to maximum nutriment and digestibility. What standards we have are from judgment and experience and interpretations of such observations do not fully agree on conditions to meet these two ruling requirements, viz., to get as much weight as you can and still have it eaten up clean by the animals. Roughly, there is a consensus of opinion that there is most and most widely distributed nutriment secured by cutting when the grain is in the "soft dough," or, as some put it, "between the milk and the dough." In the case of mixed grains, of course, one often has to hit a compromise: allowing one, perhaps, to get a little too ripe in order to save the other from being too green: trying to get the most abundant in the mixture as near as possible to its best time. It is usual to cut a little riper for horses than for horned stock. For baling more attention is given to the condition of curing than of cutting, for if sufficiently freed from excess moisture anything can be safely baled.

Corn and Wireworms.

To the Editor: I am sending you a piece of a root-stock of corn and about 30 worms, which I found eating it. What kind of a worm is it and how to get rid of them? They have destroyed about one acre of corn out of 20, and seem to be multiplying very fast. They start by eating up the top root, and then cluster on the stock just under the top of the ground. They also eat the eyes out of our young vineyard cutting.—G. E. B., Sanger.

They are wireworms, an old pest of the corn plant, for which many remedies have been suggested, but none of them widely efficient and practicable. They often begin by eating the sprouting seed grain and continue eating roots until

What the Government Will Do for Fruit

J. Clifford Folger, assistant fruit crop specialist of the U. S. Department of Agriculture, has prepared a statement outlining the future work of the Government in the line of fruit crop reporting. He says:

"The growing importance of the commercial fruit industry in the United States, the development of highly-specialized districts devoted to the production of fruit crops, and the distribution of these crops into extended markets, all emphasize the need for a more careful study of the so-called commercial production, with a view to a more complete forecast of the probable quantities of different fruits which will be placed on the market in any given year."

WILL BEGIN WITH APPLES.

For the total agricultural production of apples as well as all other crops, a complete system of forecasting has been perfected which includes reports from every township of agricultural importance in the United States. In the past the estimates for the agricultural production of apples have been secured from four separate and distinct sources, each more or less complete and acting as a check upon the other three. They are as follows: (1) The above-mentioned list of several thousand apple growers who have been furnishing periodic information in response to inquiries relating solely to the apple crop. (2) A voluntary crop reporter in each township who reports monthly to the bureau on the crops of his neighborhood. (3) A voluntary reporter in each county who also reports monthly for the entire county, basing his reports upon personal observation, interviews, and upon reports from farmers and others in different parts of the

county. (4) A salaried field agent in each State who spends most of his time, during the growing season, traveling over his respective territory and keeping in intimate touch with crop conditions.

PLANNED EXTENSION OF WORK.

This general system of crop reporting is designed more particularly for field crops, grown generally throughout an entire State or number of States. Commercial fruit crops are highly specialized and their cultivation is concentrated in particular regions. For this reason they do not lend themselves as readily to a general system of crop reporting. Recognizing this fact, the Bureau of Crop Estimates has added to its working force two fruit-crop specialists who will give their entire attention to perfecting a system for estimating the commercial apple crop. Once perfected, this system can be extended to include other fruits.

The fruit specialists will visit important districts and confer with apple growers, dealers, growers' and shippers' organizations, and others interested in the apple industry. Support and co-operation will be enlisted in the work of making reliable forecasts from month to month on the size of the crop and in collecting information on the general conditions throughout the country during the growing season. By this plan it will be possible to carry to those interested in apple yields information regarding not only the entire crop as a whole, but also regarding the crop of a particular state or district. By gradual development it will be possible to work up a uniform system of estimating, which will render the greatest service to the commercial fruit industry.

Concrete Unaffected by Sulphur Fumes

[Written for Pacific Rural Press.]

"Our concrete sulphur houses have been entirely satisfactory two years," says Fred W. Wilson, formerly of the Winters' Dried Fruit Co. "Two of them still show the grain of the boards used as forms for the concrete, though the other has crumbled slightly from use of steam to bleach almonds in it. They are absolutely fire-proof, and I think they require less sulphur than wooden 'bleachers.' Wood shrinks, and cracks let sulphur fumes escape. Meat smoked in the wooden sulphur house tasted some of the sulphur, but not so in the concrete one."

Mr. Wilson's old wooden sulphur houses had rotted at the bottoms and settled out of shape. The men on the ranch built concrete ones during leisure time, using six parts gravel to one of cement. Foreman B. F. Chadwick tells the cost: \$139 for cement, wire, men, and lumber. Three compartments join each other so one inner wall serves for two. Each compartment is 15 feet by 6 feet 4 inches by 40 inches inside—long enough to take two tram carloads of fruit at once. They have a cement roof, and cement floor with iron rails imbedded in it. Sixty-five sacks of cement were used at 65 cents per sack. Thirteen yards of gravel were hauled from the creek nearby. A thousand feet of 1x6 fence lumber was used for forms, and this was

useful afterward. One bale of 20 rods of new 26-inch woven wire was imbedded in the concrete as reinforcement. Old iron rods, etc., helped reinforce the roof. Walls and ceilings are six inches thick, and the floor nearly so. Making the wall too thin is a mistake if it weakens it, says Mr. Chadwick. Two one-inch pipes through the ceiling of each compartment furnish ventilation enough so the sulphur fire does not go out. A pit was left at the front end about 14 inches square and eight inches deep for the sulphur. Bolts through the walls hold 2x3's vertically, to which 2x6's are fastened horizontally for trays to rest on. Wooden doors swing up to a hook hung to a projecting 2x4 on each compartment.

PROTECTS AGAINST SULPHUR.

How to sulphur trees and overhead vines without getting the irritating stuff in one's eyes is told by a Marin county subscriber who has two acres of fruit and grapes, including an overhead arbor which he sulphurs from beneath. Paper was pasted over the gauze around the glasses of common threshers' goggles. To keep sweat from carrying sulphur into his eyes, he put on a woolen night cap, drawing its edge down over the upper edge of the goggles. It absorbed the sweat.

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Here and There in the Fruit Business

Grape Vine Hopper Remedy.

[Written for Pacific Rural Press.]

Grape vine hoppers are likely to be serious in San Joaquin county this summer, according to Horticultural Commissioner H. H. Ladd. They have already been observed on all varieties, and unless treated before developing wings they will defoliate vines more or less, especially of late varieties, such as Emperor and Cornichon, and expose fruit to sunburn. Eggs are pierced between surfaces of leaves. They hatch about blooming time and the young live on under surfaces until wings develop. Therefore, a spray to catch them needs to be applied under 200 pounds pressure with angle nozzles to wet the undersides of leaves thoroughly. Spray does not get them after wings develop. Mr. Ladd recommends a spray he tried on half an acre last summer with good results. Twenty pounds atomic sulphur mixed with 1½ pints blackleaf 40 per 200 gallons of water does the work. The atomic sulphur serves as a spreader for the nicotine instead of soap, and controls mildew also.

Lime Softened Hard Red Orange Soil.

[Written for Pacific Rural Press.]

The red adobe-like soil of certain orange districts in Butte county requires immediate attention at the right time to make it work down soft and loamy. Some of it is worse than other; but lime will improve it as evidenced by C. J. Dreher's experience. In September, 1915, he broadcasted with a shovel, four tons of beet sugar lime per acre on 20 acres and cultivated it in. The soil worked so much easier and cover-crops grew so much better that lime was spread on other orchards last summer and still others last fall after thorough cultivation. The usefulness of lime depends on getting it cultivated or soaked into the soil it is to soften.

Almond Growers Strong.

[Written for Pacific Rural Press.]

California almond growers are greatly handicapped in competition with Spanish almond growers, both in cost of labor and freight rates to New York, said G. W. Pierce of the Almond Growers' Association at the farmers' meeting in San Francisco, May 22. Yet the association insists on reasonable prices to consumers.

Spanish labor costs about 60 cents per day as compared with \$2 or more here. The freight on Spanish almonds delivered in New York is 27 cents per hundredweight, while from California it is \$1.40 and the railroads are wanting it increased to \$1.61. Yet, due to the association, the almonds are sold at such a profit to producers of California that the planting has greatly increased.

Better Cherry Packing System.

[Written for Pacific Rural Press.]

What seems a better system for cherry packing is being followed in Yuba City as suggested by R. W. Skinner. In ordinary packing, a lot of cherries are piled on the tables; and these are picked over perhaps half a day before they are all cleaned up. The best fruit is used and the

other left for the last boxes packed. By that time it is more or less messy, sticky, bruised and broken. If some of the last boxes packed each day happen to be opened at auction as samples of the whole lot, it all goes begging at low prices. If the good fruit is opened as a sample, then the buyer has a kick coming. Cherries that stand over night or over noon in a pile or a lug box get sweaty and should not be packed in that condition. To aerate them and dry them out, and to make each box as nearly as possible of equal quality with every other box, is the object of Mr. Skinner's system.

The forelady, Mrs. Stoker, fills the cherry shipping boxes directly from the lug boxes, removing sticks and trash that might injure the fruit. This handling aerates the cherries. She puts in 10¼ pounds, more or less, to allow for culls; weighs the fruit and sets it on a shelf where each packer comes to get it when her previous box is finished. This gives the packer a relief from her sitting position, and if there is anything wrong with her pack the inspector can tell her privately.

The box must be packed from the 10¼ pounds; so it is packed with average fruit and the table is practically cleaned up every time.

Killing Apple Aphis.

To the Editor: I see in your last two papers inquiries as to means of getting rid of the apple aphis and both times you recommend whale oil soap and nicotine 40 per cent. It has been my experience that the above is absolutely worthless. Two of the most successful growers in this district told me last week that they bought more than \$200 worth of tobacco extract four years ago and sprayed the trees thoroughly with absolutely no gain whatever. We find the lime-sulphur solution (nine to one) applied about the last of February or early in March (depending on the year) to be very effective. While I don't contend that this will get them all, I am positive that it will control and check them so their damage is very slight.—W. M. R., Sebastopol.

The case is this way: Instead of spraying with lime-sulphur just before buds open, as you describe, our friends do nothing until the leaves get lousy. Then they write to us in a great rush and we have to tell them in April and May what it is safe to do then and that is to spray with a soap-tobacco wash. If we reply that they are stupid not to have sprayed with lime sulphur a month or two earlier, it would make them mad enough to stop their papers. However, we let you tell them what we were afraid to tell.—Editor.

Bluejays and Almonds.

To the Editor: Can anything be done to prevent bluejays carrying away almonds? The trees are along a slough and the birds take every nut. The trees are loaded with almonds this year and I would like to save them.—C. B., Snelling.

We know no way but shooting, and this would cost more in time and munitions than the nuts are worth when you have only a few trees and a great many jays. Can any reader prescribe from successful experience?—Editor.

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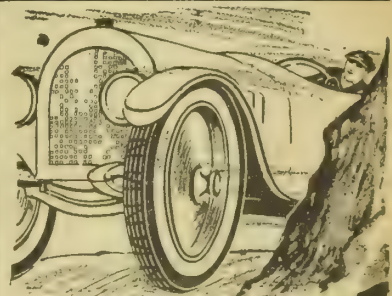
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Practical Hints About Farm Labor

[Written for Pacific Rural Press by Wm. Curtis Clark.]

The fact seems to be generally recognized throughout the State of California that there is at present an unusual shortage of farm labor to handle the crops of the present season. An organization, providing means for handling a serious situation of this nature, has before it a task involving careful planning and the assumption of considerable responsibility. It is unnecessary to say that it requires straight thinking and a practical appreciation of the factors involved. To these every employer of farm labor in this State should give his personal attention and consideration.

FARMERS TO HAVE A NEW KIND OF LABOR.

In the past a farmer has depended for labor upon the so-called "floaters." This labor has been recruited largely from the ranks of tramps, hoboes, blanket stiffs, b-hunks, men who are employed in other occupations in other seasons of the year, and groups of men, women and children taken from the cities for special hand work, such as thinning, picking, packing, etc.

It is evident that a large portion of the force formerly depended upon comprising able bodied men, are now going to be drafted into various branches of the Military and Naval service. This is going to logically require the recruiting of ranch labor during the harvesting season, from a class of persons not heretofore utilized.

The reasonable source of this supply exists among the active element of our colleges, high schools, public schools, and among the women of our cities who are free to devote themselves to this work.

It is quite evident to California farmers that if this work is going to be organized and carried out under the authority and supervision of such institutions as the University of California, the State Labor Bureau, or the State Department of Education, there will be imposed upon any of these institutions who assume this responsibility, a liability in regard to the proper carrying out of their plans.

It is also evident to California farmers that if a practical plan for the solution of their difficulties is carried out by either of these institutions, they will of necessity have to be assured that the labor, for which, to a certain extent, they are responsible, shall be properly housed, fed and supervised, and that this labor will have to be placed specifically and definitely on the work for which it is ordered or required.

This means, that the so called "Labor Hog" who has been an objectionable factor in the placing of labor heretofore, will have to eliminate himself or be eliminated from the situation.

OLD METHODS UNFAIR.

The "Labor Hog" has heretofore been a definite and known quantity with labor bureaus, both private and public, and has always formed a factor with which labor bureaus have had to deal. The Labor Hog is an employer who has a crop maturing and necessitating the employment of a large number of hands. For example, he may need a force of twenty

(20) but, being apprehensive that he will not get this number, or that a certain percentage of hands will quit, places an order for forty, in order to have a surplus stranded on the job from whom he may draw at will, as the necessity arises. This produces a very comfortable feeling no doubt, and offers a certain temporary relief from embarrassment as long as the surplus labor remains in the locality to which it is sent, but it produces an unfair burden upon the labor so manipulated and abused, and performs a great injustice.

Such a condition of affairs must be eliminated from transactions involving the placing of high school students and other labor neither accustomed to finding itself stranded, nor to picking up a living in tramp fashion.

Whatever detailed method may be used by some responsible Association, it is going to be necessary for the farmer to specifically state his exact requirements, a certain definite piece of work to be done, involving as nearly as possible a particular length of time, and that he assume the obligation to provide for the required amount of help ordered, in a more definite manner than in the past.

LABORERS MUST BE BETTER PROVIDED FOR.

2nd. It is also evident to the California farmer that the class of help which will be substituted to meet his emergency will be accustomed to a higher class of living accommodations than has ever been the case with "floating labor."

Taking the class of older high school students in this State as a whole, they have been used to a life of cleanliness. There are probably four or five thousand of these young lads who are energetic and capable of intelligently performing the average class of farm work requiring eight hours of straight hand work or ten hours of work driving teams or ordinary farm implements.

Accustomed as I have been to hiring the average farm labor available in California, I am satisfied that the older high school student, whose health and physical powers have been passed upon, will probably be found more dependable and easier to instruct, also easier to get along with, than the former class of help, which is always uncertain, inclined to shirk, and in the majority of cases of reduced efficiency through the use of liquors and other habits.

It is not to be expected that this new class of harvesting help is going to work for over fourteen hours a day, put up with an abusive and disagreeable boss, or make their beds in discarded chicken houses, corrals, or unclean quarters without bathing facilities.

It is true of many farmers in this State that under the stress of the harvesting season they do not care how their help lives as long as they are on the job at 4:30 to 5:00 o'clock in the morning and stay with the work until it is done—which may be half past seven or eight o'clock at night.

WHAT MAY BE DONE.

With the competitive prices prevailing in the labor market this season, and in view of the extreme shortage of labor, it is up

Growers, Attention!

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to every farmer in this State to revise his attitude toward help which may be furnished for his own profit and benefit. In this, as in most other extensive organizing work, it is well known, that ideal conditions cannot be established, but there are a few essential and basic factors which must be taken into consideration in the field, and these must be practically considered by the farmers of this State, and they should co-operate in these essential matters, if they expect to be materially assisted and aided in accomplishing their work by those who expect to furnish this new kind of labor.

The young man, who goes into the field to labor, will no doubt find as others do, that sleeping under the open sky is the finest bed room in the world, and for this purpose, no doubt will come equipped with his own clean blankets and tarpaulin,

but he should have plenty of clean hay on which to make his bed.

He is going to demand reasonable hours and fair pay proportionate to services rendered.

He is going to demand facilities for keeping clean. Any farmer who can hang up a coal oil can having a perforated bottom with a water pipe and stop cock leading from the water tank, and who can throw up a temporary rough board screen around this contrivance, may have a shower bath for all practical purposes, at very little expense.

Any young man who puts in a fair day's work in the field is not going to need much guardianship nor will he be likely to get into mischief on Sundays after doing his washing and resting from the week's labor.

No day is long enough to waste any of it nursing a grouch.

Field and Garden Suggestions

San Joaquin Labor Census.

The Stockton High School faculty has been making a list of students who are willing to work on farms during vacation. The list is to be given to Farm Adviser R. D. Robertson, who has been taking a post card census of farmers who want help. Over 4,000 return postal cards were printed patriotically free of charge by W. S. Kendall of Stockton, with the following blank questions to be answered and returned by farmers: "I will need men, women, boys, girls more than I now expect to be able to obtain. These will be needed from to I will provide board, board and room, camping grounds, sanitary conveniences (place X after accommodations you can provide). Character of work to be done I will pay \$.... per day, \$.... per month. Name..... Address....." The high school students addressed over 3,000 of them.

These cards began returning two days after Mr. Robertson sent them out, and the table he prepared shows at a glance just who wants every class of help and when. So all who want work may be placed quickly by applying to him at the Stockton Chamber of Commerce.

Bean Leaves Dark Green on Alkali Spots.

On an alkali spot on Tharp Bros.' ranch in Sutter county the beans have repeatedly grown nicely until about eight inches tall and then died, says Chas. Johnson, who has worked the farm many years. When the bean comes up, it makes very dark green leaves, which have become a sign, to him, of alkali spots in anybody's bean field. The first leaves should be light green.

Association Raised Potato Prices.

El Dorado county shipped 40 cars of potatoes last year, the buyers pitting one grower against another and putting prices below the profit line. Late in the season 60 farmers within 10 miles of each other organized the El Dorado Potato Growers' Association and got their own price for the remainder of the crop.

Avoid Bean Weevils.

To the Editor: What is the best method and time to eliminate the bean weevil?—H. K. S., Colfax.

Do not plant beans or peas with live weevils in them. Weevilly beans float in water. Heat at 130 degrees kills them; but carelessness may destroy germinating power. Fumigation with a saucerful of carbon bisulphide set on top of beans in an air-tight barrel for an hour is safe if no fire is brought near.

Watering Uneveled Lands.

Because of lack of late rains many interior valley farmers are being compelled to irrigate their uneveled lands that were plowed early in the season in order to insure moisture during the growing season. The same practice is being planned by others who have secured one crop from such land and hope to secure another this season.

Where water is secured from ditches some prefer throwing up levees in contour fashion, following the high points of the land. This is satisfactory where a good head of water is available, but probably not so economical as the furrow system where water is scarce or expensive.

Where furrow irrigation is to be done, the land should be gone over with small shovel plows. A useful tool for this is a one-horse cultivator with two plows attached on each side. Where water is taken from a large ditch, a smaller ditch should parallel it and the furrows lead out from this. To keep the banks from cutting badly, when furrows are opened up and water turned in, short pieces of two-inch pipe or wooden boxes will save much trouble. If neither are available a shovelful of sod or the roots of weeds will serve to hold the bank when furrow is opened.

Where water is secured from a pumping plant, probably nothing is better than galvanized surface pipe, which can be secured in most any size and which is easily moved. With a sufficient supply of pipe to reach all parts of the field the water can be put on all of the ground with practically no waste.

Bean Straw in Corn Silage?

To the Editor: I would like to know if one can use bean (pink) straw for Indian corn for silage for milk cows to any advantage. If so, what proportion.—G. M., Turlock.

[We would prefer not to give bean straw silo room. It is all right as it is. We should make a straight corn silage and feed bean straw on the side. Does any reader demur?—Editors.]

Getting Ahead of Morning Glory.

Morning glory is about as serious a weed menace as there is on river bottom lands for such summer crops as beans, because of the difficulty in keeping it from covering ground before the beans are up. In parts of San Joaquin county growers have largely overcome this by plowing about five inches deep, just before planting. This cuts the morning glory deep enough so that beans are out of the ground before it gets a start.

Attempts have been made to hold it back by the continual use of underground weed cutters right up to planting time, but as these only cut two or three inches deep the weeds are up before the beans. After the beans are up, however, the weed cutter is almost indispensable, as it not only keeps the weeds down and conserves moisture, but also keeps a finely pulverized mulch on the surface. Hoeing in rows will keep the weeds well under control.

Darkling Ground Beetles.

Dark brown beetles a quarter inch long have been eating garden plants in Sutter County. The remedy proposed by Horticultural Commissioner H. P. Stabler is three pounds Paris green thoroughly mixed in 50 pounds flour. Dust this thoroughly over the foliage.

There is nothing good in success but that which is well won.

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for small tractors, has no levers to interfere with limbs—no slow, cumbersome Worm Gear.

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Users of tractors, engines, pumping plants, motor trucks, automobiles, electric motors, and other mechanical farm power are invited to make this department an exchange of their experiences and troubles.

CALIFORNIA'S MOST POWER-FULL RECLAMATION PROJECT.

[Written for Pacific Rural Press.]

It fires the imagination, to drive twenty-five miles under the Sacramento river levee from Knights Landing to Tisdale Weir, with a great inland sea stretching nearly to the horizon across Sutter Basin, and to think of the 50,000,000 pounds of beans that will be growing on that sea bottom this year, due to the mighty accomplishments made possible by use of electrically run centrifugal pumps and a regiment of tractors of all kinds.

At this writing, the center of Sutter Basin is under not less than nine feet of water at its shallowest place, the surface being 28 feet above sea level. Some 22,000 acres are owned by relatively small farmers, according to General Manager George F. Maddock of the Sutter Basin Co., mostly around the edges from which the water is already receding; and 46,000 acres are in the hands of the Sutter Basin Co. and the Chicago-California Development Co. The latter companies have put in the pumps, a straight drainage canal averaging 80 feet wide and 8 feet deep, 18 miles long, nearly 200 miles of drainage lateral canals, and some 52 miles of levee. This levee, with about eight miles yet to be built, protects this area, which is organized as Reclamation District 1500 under the State law.

MAMMOTH PUMPING PLANT.

The pumping plant cost over \$500,000, and the power to run it, including four operators, costs over \$1,000 per day. It consists of half a dozen 50-inch centrifugal pumps, each direct-connected to an 800-horsepower electric motor. Each pump throws 75,000 gallons per minute, and it takes fourteen or fifteen days of steady running twenty-four hours per day to drain the basin after the water gets down to the five-foot depth at its shallowest place. These figures are furnished by Charles Erickson, who has charge of the plant.

Owing to litigation for the past three years, occasioned by the proposal to run this immense sea of water around the outside of the dis-

trict through Sutter By-pass endangering the land owners there, the district is not enclosed enough to keep the Sacramento river out until it has lowered to 24 feet above sea level at the pumps. The litigation was settled in the Supreme Court recently, and half a dozen dredge boats were put to work in May to complete the levees.

Last year pumping commenced May 30, and the pumps worked two weeks without stopping, then about two days afterward to dispose of the seepage.

TRACTORS INDISPENSABLE.

Much tule land owned by the Sutter Basin Co. had been cleared and plowed the fall of 1915 after the sea had evaporated. The tules were first mowed off by an 18-horsepower tractor pulling a battery of five ordinary mowers hitched to an evener on wheels. The outside and center mowers were hitched by short tongues, while the other two had longer tongues hung over the sickle-bars of the mowers next to them. This worked fine, though tules were as tall as ten feet. One man watched the mowers while another operated the tractor. A similar system was followed last fall when the total clearing was brought up to 22,000 acres.

The tules were burned, the fire not entering the ground because it is not peaty. Disk-plowing with 60- and 75-horsepower tractors followed the mowing. The ground was replowed three or four weeks later so the roots would dry; and then "Randallized," harrowed, dragged, etc., to loosen the roots so they would float away on the winter floods.

PLANTING AND HARVESTING BY TRACTORS.

The company's 7500-acre crop was planted and cultivated by horses last year, but this season the planting will be done by "a battery of eight planters hitched by short tongues to an evener on wheels, all pulled by an 18-horsepower tractor. The company is to put in 2,000 acres under direction of Superintendent J. W. Cloyd, to whom we are indebted for the facts about the tractors. About 20,000 acres will be let to tenants in lots of 80 to 1500 acres—all planting being con-

Do It Electrically



ELECTRIC APPLIANCES in the household, not only add to the convenience of all members of the family, but they are economical and time-savers.

ELECTRIC APPLIANCES include CHAFING DISHES, COFFEE PERCOLATORS, VACUUM CLEANERS, ELECTRIC IRONS, and every other appliance that is needed in the modern home, not forgetting ELECTRIC FANS.

We carry these appliances in many of our branch offices, and will be glad to have you call and inspect them. Where we do not carry them we will be just as glad to give you our expert advice.

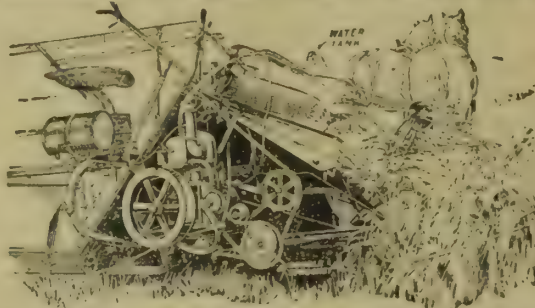
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Branches in all principal cities and towns of North Central California.

Cushman Farm Engines Used on Binders Will Save You Money



Binders require less horse-team, work easier, cutting greater acreage. Will save grain on the corners. Gets down or lodged grain. Heavy crops have no terrors for a Cushman.

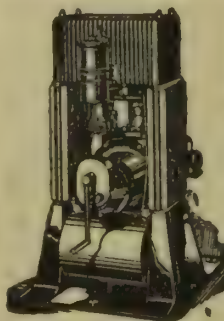
It is An All-Purpose Engine Will fit any grain, rice or corn binder.

IT WILL DO MORE KINDS OF WORK THAN ANY FARM ENGINE MADE BUILT LIGHT—BUILT RIGHT—GUARANTEED

Has wide range of speed—300 to 950 R. P. M.—and will operate wood saw, pumps, washing machines, cream separators, ensilage cutters, sprayers, threshers, battery rollers, grain grinders electric generators, hoists, power blacksmiths' tools, concrete mixers, etc., to best capacity. Will furnish power to mowers, reapers, manure spreaders, etc.

BUY A CUSHMAN THAT YOU CAN WORK EVERY DAY A 4 H. P. will drive 3-inch centrifugal, an 8 H. P. will drive 5-inch centrifugal with 20-foot head on 6½ gallons of distillate in 10 hours. See your dealer or write for information to

THOS R. BROWN, Factory Representative, Stockton, Cal.



Uni-Letric
GASOLINE-ELECTRIC UNIT
LIGHTING SYSTEM

Electric Light for Your Farm

Uni-Letric lighting plant generates standard 110-volt direct current; operates from one to fifty lights, electric motor, electric iron, vacuum cleaner, electric toaster, force pump, churn, washing machine, etc. No Batteries—No Switchboard—and a better machine for less money. High speed gasoline motor, generator and automatic governor, all complete in one small, compact unit. Uses standard lamps and fixtures. Simple, easily installed, dependable, economical. Costs less than other systems to buy and to operate.

Write to-day for full description and low price.

ELECTRICAL ENGINEERS

104 Clay St., San Francisco, Cal.

KARL A. HEDBERG



Dredger clamshell like several being used to levee the Sacramento river out of Sutter Basin. Everything about the project is on an exceptionally big scale.

tingent on the water going down early in June. Probably the tractor will be run on low speed to avoid shearing the beans if high speed catches them before they drop. Row-ends will be finished by horses. A bean is to be dropped every five inches in the row. June 1 to July 10 is the planting season. Blackeyes, pinks, large and small whites, red Mexicans, and red kidneys will be raised.

The vines have been cut by sleds with knives projecting at an angle, using

PUMPS

American Centrifugals
American Deep Well
American Turbines
Brisco Belted Pumps (no Gears or Cams)

ENGINES

Rawleigh and Alamo (have oscillating Magnetos)
Muncie Oil Engines (best in the long run)

Motor Driven Pumps

California Hydraulic Engineering & Supply Co.

68 Fremont St., San Francisco

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424 East Third, Los Angeles

Dealers in PAPER **Blake, Moffitt & Towne**
37-45 1st St., San Francisco
Blake, Moffitt & Towne, Los Angeles
Blake, McFall Co., Portland, Ore.

horses, and winrowed by hand. The company has two big "pick-up" harvesters which thresh beans from the winrow, being pulled by tractor. There are four other similar machines in the Basin, two Holt harvesters and several stationary threshers. Harvesting commenced early in October and was finished about Thanksgiving last year, but this was exceptionally late, and luckily the weather was good.

When the levees shall have been made safe and complete enough to exclude winter floods, our imagination pictures the fertile, well-drained, probably irrigated plains within the district dotted with farmsteads of settlers who will be adding untold quantities to the world's food supply. But then, not having the floods to hold the land free from weeds until bean planting, it will be necessary to raise grain or early truck crops or work the land as fine and repeatedly as does Austin Kramer, one of the oldest settlers on the edge of the district, whose story will appear in another article.

ONE-HORSEPOWER PUMP SUPPLIES HOUSE.

[Written for Pacific Rural Press.]

One of the curiosities of the Los Molinos colony is the 900-gallon water tank perched high in one of the magnificent oaks which attracted J. Risse to buy the place in years gone by. The tank affords fire protection for the big two-story house, being higher than the peak of the roof. It permits the use of a bath tub upstairs, sinks, wash basins and other desirable plumbing all over the house, and use of two or three outdoor faucets, from which Miss Risse irrigates the lawns and roses. Hot water is piped all over the house, being heated by a tank at the kitchen stove.

Being shaded by the tree, the water is kept reasonably cool, and all expense of tower or tank house is avoided.

The tank may be completely filled in an hour from the ordinary plunger pump which has been rigged to a one-horsepower gas engine. The water is lifted perhaps 30 feet to the surface, and forced through a 1 1/4-inch pipe about 35 feet farther, to the bottom of the tank. A check valve in the short underground pipe from the well to the tree prevents water returning to the well. Thus the same pipe which carries water to the tank carries it down again. It is connected also with pipes to the cement milk house and to a watering trough in the corral. A hand valve permits water to be pumped direct to the latter without going into the tank.

"That gas engine is the best hired man I have," says Mr. Risse. "It never grumbles, except when it runs dry." And it doesn't lose a day or two sobering up after it gets a drink.

A tractor contract has just been awarded the Davis Sewing Machine Company of Dayton, Ohio, by the C. L. Best Gas Traction Company of San Leandro, calling for the construction of \$30,000,000 worth of model "40" Best tracklayer tractors, which will be built under the Best patents.

Never use water to cool a hot brass bearing.

TURLOCK PEOPLE WORKING OUT THE LABOR PROBLEM.

(Continued from first page.)

sink for wash basins, all draining to a cesspool back of the barn. The haying hands often take a shower at noon and always at night.

SCIENTIFIC DISTRIBUTION OF LABOR.

Mr. Lane has proposed a plan not only to attract and keep men on farms in the local ways mentioned, but he looks at the distribution of labor from a State-wide standpoint. He would put volunteer general managers in charge of five districts covering the State. To these men district managers would report and be responsible, the more the easier on each. The district managers would put to work as many volunteers and automobiles as co-operation with boards of trade, chambers of commerce, growers' organizations, etc., could secure. These volunteers would take a house to house census of the conditions affecting labor supply. They would fill in blanks made uniform for the State, containing such questions as the number, age and sex of each member of the family able to work, number of acres, irrigated or not, crops planted, what months some of the family could work elsewhere, when more help will be needed, whether any would work outside the county, etc.

These reports, forwarded to a central organization, could easily be tabulated by accountants to show quickly in just what parts of state or county labor will be needed at any time, and where labor will be released nearest to the places of need. This information would go back through the district managers to the workers wanting jobs and the farmers wanting help. The central organization would co-operate with the Federal and State employment agencies. To handle local movements of labor, the local organizations, such as the T. M. and G., chambers of commerce, etc., could everywhere act as free employment agencies; or boards of supervisors and municipalities could appoint committees to do the work.

DEVELOPMENTS FROM LABOR SURVEY.

The information thus gathered, if transferred to tabular sheets as the T. M. & G. is now doing slowly with two men constantly in the field, will show what crops are available, where certain crops will be short, where certain feeds and certain livestock are overplenty or too few. The Government is likely to want this information this fall, not in the haphazard balancing of the guesses of a few leading farmers but by definite figures.

A further development, according to Mr. Lane, may easily be community hog fattening pens, where cull fruit, vegetables, etc., are fed. The T. M. and G. has been thinking of trying this out, hoping to discover all the details of successful operation as they are now doing with many crops on their two experiment farms.

The end cannot be seen of what might come from such an accurate labor survey and tabulation, but Mr. Lane believes it would at least hush the talk of importing Oriental labor.

Put every implement in good shape immediately after using.

LAYNE & BOWLER PUMPS

--Give Satisfaction

PERCY H. CLARK
715 IN VAN NUYS BUILDING
LOS ANGELES

March 9, 1916.

Layne & Bowler Corporation,
900-910 Santa Fe Avenue,
Los Angeles, California.

Dear Sirs:

I think it is no more than fair that I should tell you that the Layne & Bowler Pump which you installed for me on my ranch near Florence in the spring of 1909 has been in constant operation during the irrigation seasons ever since that time, with practically no repairs and no trouble whatever.

The tenant on the ranch reports to me that all he has to do is to keep the oil cup filled, and that the pump never gives him any trouble, although it has been doing very heavy work, and has shown very high efficiency.

Yours very truly,
Percy H. Clark

Send for Catalog No. 25

LAYNE & BOWLER Corporation
900 Santa Fe Ave. - Los Angeles

A Perfect Rice Binder Engine



Guaranteed
For Life

MADE FOR YOUR RICE BINDER, as well as for general, all-around power purposes. The "NEW-WAY" has met with unqualified success in the rice and grain fields of the South.

Light and compact—no bulky, heavy water cooling system. Easily attached by patented bracket. Mounted on sub-base, this new model is especially suited for all-around work. Readily moved from one job to another on hand truck or skids.

THE "New-Way" ENGINE GOES AND GOES RIGHT

Has lightest operating weight of any engine built for RICE, grain or corn binder; faultless jump-spark-ignition—high grade automobile carburetor; multiple disc clutch pulley; enclosed, oil tight, dust-proof, hinged crank case; direct cooling accomplished without any moving parts except fly wheel of engine.

Investigate the "NEW-WAY" now. Full information on request.

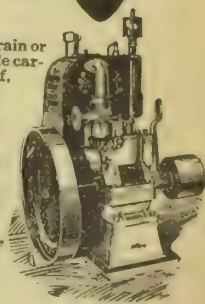
Built in 1 to 12 H. P., both vertical and horizontal. Prices according to size and equipment. Send for catalogue No. 42. Ask your dealer about this engine.

mf23

THE "New-Way" MOTOR COMPANY LANSING, MICHIGAN, U.S.A.

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For Every Purpose NEW
Threads & Couplings Hot Asphaltum Dipped

Second Hand and NEW

Fittings and Screw Casings Valves Guaranteed for Pressure

Pacific Pipe Co.

MAIN AND HOWARD STREET,

SAN FRANCISCO, CALIF.

A general agricultural scheme for the Siamese peasant is being introduced under the supervision of the ministry of finance. The peasant today, in order to obtain money to buy seeds, buffaloes, and agricultural implements, is compelled to borrow it at the exorbitant interest rate of 40 to 50 per cent per annum. The money lenders usually are agents of rice-mill owners, who furnish the capital and to whose mills the rice finally finds its way.

ARNOTT & CO. HAY PRESS HEADQUARTERS

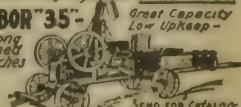
Only Two Men
To Run
Easy on Man
and Team



Three Stroke - Great Capacity - Self Feed - No Danger - Smoothest Gales - Easily Moved - and Set - Extra Power - Simple - Durable - Guaranteed - Sold on Easy Payments - CATALOGUE FREE

THE ANN ARBOR "35"

Especially Strong for Alfalfa - Feed Hopper only 35 inches from ground - Largest Feed Opening - Great Capacity Low Upkeep -



ARNOTT & COMPANY
118 So Los Angeles St. Los Angeles

General Agricultural Review

Field Notes.

San Joaquin Delta potato digging has begun.

In Tulare county all crops except grapes are short.

Canneries are working full time in the Sacramento Valley on the asparagus crop.

The beet sugar production of the United States from 1910 to 1916 shows an increase of 60 per cent.

San Joaquin County barley is fine on the east side, where soil is mostly black and seeding done early.

In Imperial valley the barley crop this year is put at 250,000 sacks against 400,000 sacks last year, a shortage of 150,000 sacks.

It is reported from Oroville that there will be 9,000 acres of rice under the Western canal this year. This is an increase of 3,000 acres.

Reports from Phoenix, Arizona, are to the effect that 35,000 acres in the Salt River valley has been planted to Egyptian cotton this year.

Reports from San Luis Obispo county say that bean planting is well under way and the acreage will be 25 per cent larger than last year.

The Director of Agriculture of Bermuda states he anticipates that California will be the source toward which Bermuda will look in future for its supply of onion seed.

Wheat harvest on the Sperry Flour Co.'s experiment farm, where many varieties of Australian wheat are being tried out, will begin about June 16.

The hopfields around Santa Rosa are disappearing. Several of the big fields have been plowed up and put into cereal crops of various kinds this spring.

Timely late winter rains have resulted in hundreds of acres of grain that were planted for hay, as usual, developing a bountiful yield of grain in San Diego County.

A committee comprising tin can makers and government officials states that the shortage of tin makes it imperative that cans be supplied only to packers of perishable foods.

The Santa Ana Sugar Company that owns a big plant at Santa Ana has been sold to the Holly Sugar Corporation for \$2,500,000. S. W. Sinshemer will be the new president.

Harry Fraser of Chico, one of the best posted men in the hop industry, advises hop men to abandon that crop and plant their fields to beans and potatoes.

Several thousand acres of the Fontana Land Company's lands will be planted to beans this season. Varieties planted will be blackeyes, teparies and pinks.

In the vicinity of Riverside and Corona sugar beets are a good crop, and barley hay fifty per cent of a crop. Loose alfalfa of first cutting is selling for \$20 a ton, tepary beans for seed, 12½ cents a pound.

Labor conditions in San Joaquin county are in bad shape. Producers can not get enough help of the type wanted. Wages are now \$2.50 per day. The greatest demand for help will exist from July to November.

The Turlock Merchants & Growers have already contracted for 1,270 acres of beans and expect 2,000. These are mainly California reds, Mexican reds and teparies, according to A. J. Eddy of the T. M. & G.

Officials of the Porterville Chamber of Commerce are on record as being unalterably opposed to the plans for importation of Oriental labor into California for harvesting of crops this fall and winter.

The State Railroad Commission has announced that a number of water companies in the State serving cities and towns have voluntarily reduced their rates in order to encourage the cultivation of vegetables and other foodstuffs in gardens and vacant lots.

The condition of winter wheat in the United States on May 1, this year, 73.2, was the lowest that it has been on that date since 1888. Nearly 31 per cent of the acreage planted was abandoned.

Tomatoes will be packed by the Kings County Packing Company at its Armona plant this season. This is the first time that the company has packed tomatoes. Approximately 60,000 cases will be put up.

The California Lima Bean Association, with headquarters at Oxnard, is not a combination in restraint of trade, according to an official report transmitted to the Department of Justice by Special Agent Webster.

As a result of investigations conducted by Sealer of Weights and Measures L. J. Dolan, it is claimed there is evidence of extensive speculation in California rice, which has virtually doubled in price in the last sixty days.

Work has been started on the formation of an alfalfa growers' association in the vicinity of Porterville, to be affiliated with similar associations in other portions of the State for marketing direct of forage products.

The Los Alamitos sugar factory at Artesia is making repairs and improvements so as to handle better the sugar beet crop of the 15,000 acres of beets that are now growing in the Artesia section, and the crop promises to be a good one.

Nine acres of potatoes and three of beans were planted recently in Palo Alto on town property between the State highway and the railroad track near the depot. The potato crop is expected to swell the coffers of the city treasury \$2,500.

The North American Mercantile Company pleaded guilty before Federal Judge M. T. Dooling recently for indictment charging misbranding rape seed which they called mustard seed. A fine of \$1,000 was fixed and paid.

In view of the present and prospective high prices of sugar, it is believed a very material advance in prices of beets will be paid to growers under a new plan of paying for beets according to net prices received for sugar.

It is announced from Calexico that arrangements have been completed whereby the Mexican government of Baja California agreed that no cotton seed can be imported into Lower California unless it has the approval of the United States Horticultural Board.

The California Development Board estimates an increase of 30 to 40 per cent in bean acreage, or about 400,000 acres planted to beans in the State. Some contracting for pink beans on a basis of seven cents per pound, whites at nine to 11 cents and Limas at 10 to 11 cents per pound is reported.

Stockton onion growers selling at \$1.50 per sack, refused to accept a reduced price offered by commission men. They then got together and put up \$5 each as a forfeit if any of them should sell at less than \$2 and hauled their onions home.

The Glenn county farm adviser has made public the results of feeding rice in his county. The Glenn poultry fared well, on either paddy (whole with the hull on) or on cracked rice. Horses fed half barley and half rice as the concentrated part of the ration relished the feed and did well on it. The feeding of rice to hogs has been found to give satisfactory results at a relatively low price.

The cantaloupe crop in the Turlock district has been reduced to 30 per cent of what was planned March 1 according to Manager D. F. Lane of the T. M. & G. This is due to high winds and light soil, cutting plants while young, cold weather, etc. This has not been replanted, owing to fear of labor shortage,

car shortage, etc. Mr. Lane believes labor shortage will not be serious this year.

Deciduous Fruits.

Canning of cherries was begun at Santa Rosa last week.

Recent reports from Porterville that the peach crop in that section had been damaged 40 per cent are said to be gross exaggerations.

The Santa Ana Valley will this year reap a big crop of walnuts if hot weather does not blast the prospects, says O. H. Burke, secretary of the Santa Ana Valley Walnut Growers' Association.

The address of Ralph Thomas, who wrote the excellent article, "How I Saved My Apricot Crop," which appeared on our first page last week, is Gilroy, and not Watsonville, as stated inadvertently.

The Vanomar Produce Association of Van Nuys announces that they will advance to growers \$15 per ton on their cling peach crop and \$20 per ton on apricots, thus enabling them to harvest their crop without trouble.

It is announced from Visalia that the Tulare Canning Peach Association's entire pool the coming season, estimated at over 3,000 tons, has been sold to the Merger Peach Company of Southern California at a price in excess of \$45.

The G. W. Hume Co. cannery at Turlock has increased its capacity from 700 cases per day, when it was established eight years ago, to 4,000 cases daily due to this spring's overhauling and addition of improved machinery, as reported by Superintendent Geo. Shannon. They have tin cans, sugar, fruit and all supplies contracted.

Governor Stephens has signed the Benson bill, which compels boards of supervisors to appoint county horticultural commissioners when such officials are needed.

Peaches throughout Tulare County will be a bumper crop, according to leading packers, who completed a survey of the deciduous orchards.

State Horticultural Commissioner George H. Hecke has issued a call to the 100 or more county horticultural inspectors of California to meet at Modesto June 6 and 7, to discuss ways and means of caring for the State's \$150,000,000 fruit crop.

The Tulare County Canning Peach Growers' Association has decided not to fix prices for the canning peach crop this season, but to allow the packers to fix the prices and the entire crop of the association may be sold to the highest bidder.

Reports from 462 storages to the U. S. Department of Agriculture show that their rooms contain 439,325 barrels and 723,219 boxes of apples on May 1, 1917. The information re-

ceived indicates that there were 33.1 per cent less apples in storage than on May 1, 1916.

Citrus and Semi-Tropical.

The Valencia orange crop in the Porterville district is put at 1,000 cars this season.

A. L. Wood of Indio shipped the first part of last week an eight-pound box of figs, the first to go from the Coachella Valley, which sold for \$6. F. P. Carrington of Indio the following day sold two boxes for \$3.50 each.

Robert Horbach has been named Porterville manager for the Stewart Fruit Co. to replace W. S. Shippey, who recently resigned to take charge of the organization of a new lemon association to be affiliated with the California Fruit Growers' Exchange.

The annual session of the California Avocado Association was held in Los Angeles May 18 and 19. These nine directors were elected: H. J. Webber, F. O. Popenoe, Chas. D. Adams, T. U. Barber, Wm. H. Sallmon, E. E. Knight, W. L. Hardin, B. H. Sharpless, Thos. H. Shedden.

W. S. Shippey, newly connected with the California Fruit Growers' Association after a number of years in the independent orange business, has completed the formation of a new citrus association through which practically all of the lemon output of southern Tulare County will be handled hereafter.

Grapes.

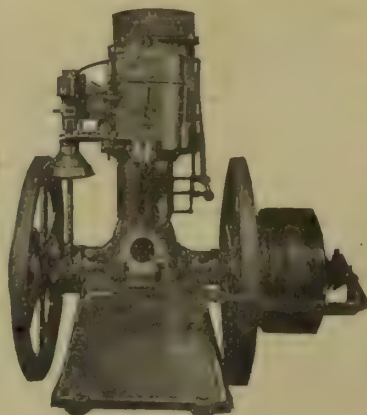
Horticultural Commissioner Fred K. Howard says that every leaf of every vine must be thoroughly covered with sulphur to prevent mildew and the sooner vineyardists get to work the better.

The people of the State will vote again in the fall of 1918 on the liquor question. A bill embodying the principles of the Rominger bill will be put on the ballot at that time by the Grape Growers' Protective Association.

The American Vineyard Co. of Fresno has been reorganized and will in the future conduct business under the name of the American Seedless Raisin Co. The concern decided to change its name for the reason that the old title suggests wine rather than its proper business.

The Clovis Fruit Co., composed of 22 growers, sued the California Wine Association because of failure of the wine association to maintain its purchasing price for 1915 wine grapes, and was awarded \$6,740 damages. The association claimed that the emergency war tax placed on brandy for fortifying purposes made it impossible to manufacture and sell wine on a safe business basis.

With Gasoline at 4c per Gallon, an ordinary gas engine could not produce power as cheaply as does the Victory Oil Motor



12 to 100 H. P.

This engine is made in California to operate on California asphaltum base oils. It has no valves, cams, batteries, or small working parts. No heating of fuel, no hot balls, and no torch required for starting.

Ask for our Rigid Guarantee. Owing to scarcity of material our output will be limited. If you want a Victory Motor this year, put in your order NOW.

Victory Motor Co.
NILES, CALIFORNIA

Miscellaneous.

Cutworms and rootworm beetles have been scarce in San Joaquin County this season.

The rain May 25 was too late to help San Joaquin oats and barley much, but benefit to wheat is expected.

The United States government has approved the plan to import farmers from China to cultivate American farms during the period of the war.

Eighty-eight corporations and individuals have been indicted by the Federal Grand Jury for conspiring to monopolize interstate commerce in onions.

California FRUITS

AND HOW TO GROW THEM

A Manual of Methods Which Have Yielded the Greatest Success; With Lists of Varieties Best Adapted to Different Sections of the State

By Edward J. Wickson

Emeritus Professor of Horticulture, University of California.

Seventh Edition—Revised

Over 500 pages of text, besides numerous full page, half-tone illustrations on plate paper. Size of page 6x9 inches; handsomely bound in cloth; gold stamped on backbone and front cover.

This is the standard work on California Fruits, and one or another of its editions is to be found in the homes of most progressive fruit growers in this State.—San Francisco Chronicle.

Contents by Chapter Titles

The Climate and Its Local Modifications. Why Climate Specially Favors the Growth of Fruits. Fruit Soils. Wild Fruits. Mission Fruits. Introduction of Improved Fruit Varieties. Clearing Land for Fruit. Nursery Budding and Grafting. Preparation for Planting. Planting Trees and Vines. Pruning Orchard Trees and Thinning Fruit. Cultivation. Fertilizers for Fruit Trees and Vines. Irrigation. Apple. Apricot. Cherry. Peach. Nectarine. Pear. Plums and Prunes. Quince. Vine Propagation and Planting. Pruning and Care of the Vine. Grape Varieties. Date, Fig, Olive, Orange, Lemon, Lime, etc. Banana, Loquat, Persimmon, Pineapple, Avocado. Berries and Currants. Almond, Walnut, Chestnut, Peanut, etc. Fruit Canning, Crystallizing, and Drying. Injurious Animals and Birds. Protection from Winds and Frosts. Utilization of Fruit Wastes.

Price, \$3.00, Postpaid

PACIFIC RURAL PRESS

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525 MARKET ST., SAN FRANCISCO

California GARDEN-FLOWERS

SHRUBS, TREES AND VINES

Being Mainly Suggestions for Working Amateurs

By Edward J. Wickson

Hon. President California State Floral Society

First Edition—1915

262 pages, 5½x7½ inches; illustrated; cloth bound; 12 full-page photo-plates and numerous text illustrations.

This book aims to tell the beginner in California, whether he be a scholar struggling with his school-garden, or a suburbanite gazing vacantly on his residence lot, or the farm-home maker, who is puzzled to translate his experience with teams, plows and pasture fields into trowels, pruning-shears and lawns, just what to do to make garden-soils, grow plants and surround his abode with beauty under the peculiar climatic conditions of California.

Price, \$1.50 per Copy, Postpaid

PACIFIC RURAL PRESS

Publishers

525 MARKET ST., SAN FRANCISCO

Santa Ana has just completed a \$85,000 woolen mill and it is expected to get to work in two or three weeks. It will make blankets and woollens.

At an election last week, the people of the Imperial Valley sanctioned the issuance of \$2,500,000 in bonds for flood protection and irrigation improvements.

Members of the Glenn County Farm Bureau are planning their agricultural exhibits to be made during the county fair, to be held Sept. 26 to 29.

For the construction of 50 miles of concrete highway, the Board of Supervisors of Solano county has ordered published a notice of intention to perform the work at a cost of \$500,000.

A plan is on foot in Shasta county to form an irrigation district comprising 118,000 acres of land which will be bonded for \$200,000, the money to be used to buy the Happy Valley Land and Water Company.

The California Fruit Growers' Exchange has agreed with the State Council of Defense to plant 25,000 acres of beans this season. The beans are to be planted in the orange groves.

The first Federal Farm Loan Association in Contra Costa County has been successfully organized, with 16 members and applications for over \$40,000. It is known as "The Pleasant and Hill Farm Loan Association."

Bakersfield, it is reported, is to have a big sugar factory to cost \$800,000, work on which will be started in 30 days. The money will be furnished by the Pingree interests that have factories at Visalia and Corcoran and in Utah.

There is quite a bit of bee disease in the apiaries between Corona and Elsinore, Riverside county, also around Ramona and Lakeside, San Diego county. Corona honey is selling at 10½ cents for white and 11¼ for water white.

It is said that the United States Reclamation Service engineers will supervise the construction of a temporary weir across the Colorado river this summer, if the Yuma Valley users persist in their protest over the proposed weir.

Officers of the Yolo County Fair have set October 4 as the opening date for the 1917 fair. The Farm Bureau, through its local units, is expected to be contributing factors toward the success of the fair this year.

Tulare farmers will have plenty of late ditch water this season, according to V. E. Hammond of Tulare, who has returned from a trip to Giant Forest. There is eight feet of snow in the forest now, more than there has been at this time for twelve years.

A tremendous lot of energy is being wasted in Glenn county leveling the practically level lands on contour. The same amount of dirt moved right would level checks, and make the borders. How a harvester or even mower can get over those snakelike levees—it would make a snake dizzy.

Frank M. Walton, head of the original project to include the entire Victor Valley in the formation of an irrigation district for the reclamation of 100,000 acres of land on the west side of the Mojave river in Victor Valley, says that the petition of the majority of the property owners will be filed with the board of supervisors of San Bernardino county.

Reports from Banning say that Morongo valley, hitherto unwatered, in the desert thirty miles northeast of Banning, is to be made to blossom as a rose. Water has been developed there by the Morongo Valley Water Company of Banning and Pasadena. The water is being turned into the distributing ditches after being cut through a range of hills and diverting the big Morongo river.

The first report of the recent food survey of the State shows that the bean area in Los Angeles County is

75 per cent above normal. The citrus crop will be 10 to 15 per cent above the average. The deciduous fruit crop apparently will total 50 to 75 per cent above normal. The alfalfa crop is expected to be above the average. A 75 per cent crop of barley and other grain hays is expected.

A summary of the May winter wheat crop report for the State of California and for the United States, as compiled by the Bureau of Crop Estimates, United States Department of Agriculture, is as follows: State—May 1 forecast, 4,870,000 bushels; production last year (final estimate), 5,600,000; two years ago, 7,040,000; 1910-14 average, 7,166,000 bushels. United States—May 1 forecast, 365,000,000 bushels; production last year

(final estimate), 481,744,000; two years ago, 673,947,000; 1910-14 average, 494,654,000 bushels.

Nevada Notes.

The Western Pacific Railway Co. offers \$20 in gold for the best paper on the most feasible way to reclaim land in Nevada now unsuited for agricultural purposes.

It is claimed that peanuts are profitably grown in Southern Nevada, 1,100 pounds having been sold recently to a Palms confectionery store, at 7½ cents a pound.

A while ago announcement was made that in Pahrump Valley, Nevada, about 60 miles over the mountains from Las Vegas, two bales of cotton to the acre has been grown.

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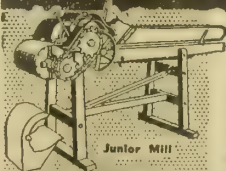
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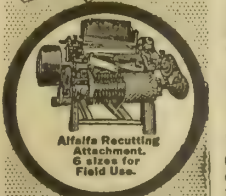
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Smalley Silo Filler (Seven Sizes)

Chain Drive—Force-Feed Grip Hooks

Grip hooks do the work of human hands. They catch the corn—automatically push it under the paddle roller and powerful, swift revolving, bevel edge knives set like a lawn mower do the rest. No grinding, no pounding. Turns out ensilage, clean-cut, fine, uniform, unbeatable in richness. Increases tonnage! Saves time, money! Two men's labor with large outfit!

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Financing Live Stock and Dairy.

[By J. M. Henderson, Jr., of Sacramento.]

The California Bankers Association gathered about four hundred members in annual convention at Sacramento recently. The growing interest in agriculture on the part of city and country bankers alike was the outstanding phase of the convention. The opening address by the president of the association, J. M. Henderson, Jr., of Sacramento, reflected strongly this new attitude of the banker toward the farmer and his problems. We take from this address certain ringing declarations which we desire to have considered in connection with the live stock and dairy industries:

Our war with Germany overshadows every industry. We could arm and equip 10,000,000 men for home service if necessary. Our present food supply is more than enough to feed ourselves and for a large exportation to France and England. Although it would be better if we had more food, our present high price of food stuffs is largely psychological and due to speculation. Food speculators should be harshly dealt with. This speculation is worse than unpatriotic; it is treasonable. For success we must raise more food. We have the land; we must use it. In the past we have been living largely on our natural resources—our capital. In the future we must prepare to live on our production alone.

PRICES MUST NOT BE SET BY GAMBLERS.

To make business safer, all that is necessary is to make prices of commodities more uniform. At present the old moth-eaten law—the law of supply and demand—no longer adjusts the selling price. If supply and demand did regulate the selling price, that is all that can justly be asked. The law of supply and demand under our present system of free and wasteful competition has failed.

In our former conception of competition we believed that free competition would force people to sell their products at just a fair price and neither higher or lower. But this has not been the result.

These fluctuating prices make business uncertain. Low prices cause failures and depression. Some go out of business, production decreases for a time, prices rise again, new people rush in to benefit by the high price, wasteful competition begins again, and we have the same cycle of good times and depression. The remedy is co-operation.

A DAIRY ILLUSTRATION.

An example at hand is the dairy business of the State of California. For awhile, in fact for many years, the dairymen were making large profits. There was a deluge of dairymen to take advantage of profitable conditions. Costs of feed and labor went up and the relative selling price of dairy products went down. The dairymen had invested and borrowed heavily on livestock and could not go out of business, even though operating at a loss, because they could lose less by operating at a loss than by closing down entirely and maintaining the fixed costs of their business. Many dairymen have, of course, gone out of business and into bankruptcy. Idle dairy farms all over the State soon be cursed with that most vex-

atious and tenacious evil—land tenantry, which causes the decadence and downfall of nations.

point to the logic of this reasoning. But those that remain are not making a profit. It is easy to foresee that this condition will keep new dairymen from entering the business, the demand for milk will increase, prices will go up, then new dairymen will rush in to profit by high prices, and then competition among themselves will force prices again below the cost of production. Such conditions are bad for business and worse for banking.

Agriculture is the backbone of the nation. The farmer has been a prey of the speculator, who has ruthlessly fixed prices without regard to the cost of production, for his personal benefit. Laws should be enacted to eliminate this parasite and at the same time protect the legitimate distributor who is entitled to protection.

If agriculture had been better supported in the past we would now be in a much better position to carry on a successful war with Germany.

CO-OPERATION THE CURE.

We have established land loan banks, which will no doubt encourage agriculture and be a great benefit. But they do not strike at the root of the trouble.

The remedy is co-operation in better marketing conditions and the establishment of selling prices truly based upon the law of supply and demand. Allow the farmer a fair profit and agriculture will act as a balance wheel upon all our industrial life, just as the standardization of gold has acted toward credit and exchange.

Better marketing conditions for the farmer will stimulate agriculture, increase the production of food stuffs and lower the high cost of living without lowering the standard.

THE DUTY OF BANKERS.

Bankers can help in this great work by teaching the farmer the benefits to be derived from the keeping of proper accounts—how to figure the interest, taxes, and other fixed costs in the same manner as the city business man. If this is done the farmer is in a better position to decide the value of different crops and the best methods of intensive cultivation.

It is fundamentally important that the selling value of agricultural products be changed so that it will be cost plus a fair profit, as in any other business.

Farmers should organize into associations for the better marketing of their products. It is the duty of bankers to finance and aid these associations.

The decreased production of food-stuffs in relation to the increase in population is the most direct cause of the high cost of living. During the past 15 years the increase in population has been about 20,000,000. During the same time the decrease in useful livestock has been about 40 per cent. This should compel the attention of the city banker as it already has of the country banker.

No community can prosper with a declining agriculture. Bankers should encourage and promote agriculture on a scale never before known.

300 Registered Purebreds 300 Tuberculin Tested 300

Lest You Forget—

Absolute Dispersal Sale STANFORD HOLSTEIN HERD

At VINA

NEAR CHICO

JUNE

5, 6 & 7

9 A. M. DAILY



BOWEDA

Record

31.92 Pounds
of Butter in
Seven Days

The Board of Trustees of Leland Stanford Jr. University has ordered that the entire herd of 300 registered purebred Holstein-Friesians on the Stanford ranch at Vina, Cal., be sold at public auction.

THIS SALE WILL OFFER A RARE OPPORTUNITY FOR THE ADVANCED BREEDER, THE DAIRYMAN AND THE BEGINNER. THE HERD IS ROYALLY BRED. JUST THINK OF THE POSSIBILITIES OF SECURING FOUNDATION STOCK!

40 GRANDDAUGHTERS OF KING OF THE PONTIACS, 40 GRANDDAUGHTERS OF COLANTHA JOHANNA LAD AND 20 GRANDDAUGHTERS OF SEGIS PONTIAC DEKOL BURKE WILL BE SOLD.

40 A. R. O. COWS AND MANY OTHERS THAT WILL DO AS WELL OR BETTER WILL GO TO THE HIGHEST BIDDER. CAN YOU AFFORD TO MISS THIS SALE?

Special excursion rates have been offered by the Southern Pacific for this sale. From points extending to Montague on the north, Reno on the east and Bakersfield and San Luis Obispo on the south, the rate will be a fare and a third for the round trip. Those in Southern California, Arizona and New Mexico should buy summer excursion tickets to San Francisco and then the special ticket to Vina.

Special trains will be run between Chico and Vina each day of the sale.

For Catalog or Further Information

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An Inexpensive, Clean Dairy

[Written for Pacific Rural Press.]

An inexpensively equipped small dairy very easily kept clean, is the way State Dairy Inspector J. H. Severin characterized W. J. Gormley's outfit near Stockton. We found the ground floor of the tank house cemented and wainscoted for a dairy house. The tanks for cleaning utensils were supplied with hot water from a boiler on the kitchen stove which is high enough to give good pressure. Wide screened windows on east and west sides provide ventilation and light. The milk cooler is operated by fresh water from the tank.

HAND BOTTLE FILLER.

The bottles are placed on a low bench. The bottle filler is simply a 14-quart bucket with stiff handles, through the sloping bottom of which has been screwed the tube through which milk flows into the bottle. The tube has a large mouth with rubber washer, which fits into the bottles and prevents their running over. A coil spring holds the valve closed in the tube except when the spring is compressed by the weight of the bucket resting on the tube. A hole in the bench permits the bottling outfit to rest upright while being filled. Then it is set onto each

bottle in turn to fill them. Only a few drops were spilled on the bench where ten or twelve gallons of morning's milk had been bottled. This bottle filler cost \$8.50 in San Francisco. The tube, spring, etc., unscrew and are easily cleaned. The filler is always flushed with water after using, to prevent any milk drying in it. Cleaning up the dairy house, utensils, bottles, etc., takes Mrs. Gormley not over two hours per day.

MILKING BARN.

A concrete floored room about 7x10 feet opens from the corral for one or two cows to enter at once. This has windows on three sides. The gutter is simply a shallow sloping trench which is flushed out clean in a minute. It takes an artist to avoid loss when milking into the covered bucket Mr. Gormley uses, but he has no trouble.

The sandy corral is cleaned up every day and the manure wheelbarrowed to a pile 100 feet away. An open-sided whitewashed shed on the south, a tight board fence on the west and part of the north, shelter cows from wind. A plank platform in front of the hay manger avoids mud and is easily cleaned.

Octagonal Silo Easily Built

[Written for Pacific Rural Press.]

Octagonal silos are seldom seen in California. If left octagonal inside, they would probably result in poor packing of silage and air space which would encourage mold.

But the octagonal silo put up in the fall of 1915 by W. M. Colbert & Son of Tehama County has not this objection, while it has the advantage of easy cheap construction. The material for this, including cement for a three-foot pit, cost \$125. The silo is 22 feet above ground and a trifle over 12 feet in diameter, holding about 60 tons. Mr. Holbert and his son put it up.

Except for the lining, which is of tongue-and-grooved boards fastened vertically to pieces of 2x6 cut to fit the corners and present a circular face, every piece in the silo is of 2x4's, sized on all sides and cut the same length with both ends cut to an angle of 45 degrees from the inside edge of the piece.

In building the silo, each of the eight sides was laid with the 2x4's flatwise and alternately shoved endwise enough to leave space on top of the end of the one previously laid for the end of the piece on the same level in the next side to rest on it. The angled cut of the ends made all corners flush and smooth. As each course was laid, the lapping ends were each fastened by a spike to keep the corners from spreading under pressure from the silage.

The doorway was sawed out as the silo was built up, after cleating the pieces to hold them together. The cut was made on a bevel so pressure from inside would hold them tight. The mistake was made of cutting them too large, so they are clumsy to handle. Between each door, four of the side pieces were left intact to hold the silo together.

Another mistake was in making the pit slightly too small in diameter so the lining of the silo rested on a shoulder. When the wood be-

came damp the horizontal pieces swelled more than the vertical lining so the lining was raised off the shoulder, and considerable spoilage was found around this cavity. If the pit had been the right size so the lining could have extended below the shoulder, the lift would not have left an open cavity.

GRINDING SURPLUS CORN.

[Written for Pacific Rural Press.]

Most silo owners find that they have a surplus amount of corn after silo-filling each fall; and while it often is not marketable, there is a good deal of grain that can be profitably fed out to the cows by grinding it.

That is the practice on the Bridgeford Company's ranch in Contra Costa county, where 250 tons of silage are harvested. Last year the surplus corn was ground up, ears and all, and fed successfully with the grain ration fed the registered Holstein herd maintained on the ranch. According to Mr. Bridgeford, there is only about ten per cent cob in the ears, and it is cheaper to grind the entire ear and let the cattle pick out the corn than to shell the corn and then grind it.

CREAM FROM GOAT'S MILK.

[Written for Pacific Rural Press.]

Set away goat's milk in shallow pan 12 to 15 hours. After that, put on a stove and heat till a scum crumples on the top. Avoid the boiling point. Then set aside to cool and settle for another 12 to 15 hours. Then skim. Rich, heavy cream is the result. This is called Devonshire cream, and is very rich and sweet and has a higher per cent of richness than cream from cows' milk. On account of the finely divided particles, the butterfat is slower to rise than that of the cow's, but digests in about one-third of the time.

Revada Guernseys BRED IN THE PURPLE



Every animal on this farm is imported, and carries the blood of such noted sires as Governor of the Chene, Sequel's Monogram, and Governor of the Gree.

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SOME FINE YOUNG BULLS FOR SALE

No Females for Sale at Present

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FOR HAND OR POWER

Holding Capacity 35-115 Gals.

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Do You Want Long Distance Backing?

We have a son of the California State Champion three-year-old for sale. Born October, 1915; Sired by PRINCE ALCATRA KOENIGKE, whose dam is TILLY ALCATRA.

The Dam of this young bull is not a fifty-lb. cow, but she has to her credit 21,208 lbs. milk and 860 lbs. butter in one year, which is the largest record ever made in California by a Junior three-year-old.

If you are in the market for a bull, it will pay you to visit our ranch and see what we have to offer—at prices that will surprise you.

Look over our consignment at Sacramento May 31

J. S. GIBSON CO., Box 97, Williams, Cal.

"THE NAME GIBSON INSURES QUALITY."

Live Stock and Dairy Notes

Livestock breeders all over the State are invited to send on postal cards, notes regarding their sales, State and County Fair intentions, new stock, etc.

The Dairy.

The high price of cheese has revived the home industry of making Monterey cheese, sometimes known as Jack cheese.

Governor Stephens has signed Satterwhite's pure milk bill, making supervision of dairy products more complete and workable.

Nothing will deter up-to-date dairymen from attending the notable sale of purebred Holsteins at Vina Ranch, June 5, 6 and 7.

Manager Patrick of the Alpine Evaporated Cream Co. was in Salinas recently with the object of ascertaining the feasibility of a branch factory at that place.

The Central Creameries Company of San Francisco has established two casein factories, one on the Charles Martin ranch, near Petaluma, the other at Nicasio.

The State record for under-two-years Holstein heifers has been broken by K P Tola Joe, daughter of King of the Pontiacs and owned by Gotshall & Magruder of Ripon. Her record is 27.14 pounds butter from 459 pounds milk in seven days.

Purvine & Son report recent sales of registered Jerseys as follows: To C. S. Hamilton, Sebastopol, Legacy's Fairy Boy out of dam with a record of 534 pounds fat; to Steinbeck Bros., Petaluma, two bulls; S. S. Stice, Petaluma, one bull.

It is claimed that the dairymen who are furnishing milk to the citizens of San Jose are making no money. Dairymen who raise their own feed manage to get by, but those who have to buy feed can't, says L. R. Lenfest, a leading local dairyman.

Stocks of butter in store in Los Angeles May 24, 1917 were 130,874 pounds against 95,508 pounds the week previous, an increase of 35,366 pounds for the week. May 24, 1916, the stocks of butter in store were 76,655 pounds, making the present holdings 54,219 pounds in excess of last year's.

The cold storage holdings of eggs in Los Angeles May 24, 1917, were 72,476 cases against 68,971 cases the week previous, an increase for the week of 3,505 cases. May 24, 1916, the cold storage holdings of eggs were 54,882 cases, showing an excess of holdings at present over those of a year ago of 17,593 cases.

T. B. Purvine & Son, Petaluma, have just received word from the American Jersey Cattle Club to the effect that they have 19 cows in the Register of Merit. One of these, Park Beauty Roma, a six-year-old, made 557 pounds fat. Their two young herd bulls are now credited with three and two daughters respectively in the Register of Merit.

A cow that produced six times as much butterfat in a month as the average for all the dairy cows of California won April's honors in the State Dairy Cow Competition now being conducted by the University of California College of Agriculture. She was "Imported President Doris of Lewison," owned by the Palo Alto stock farm of Palo Alto.

The stocks of butter in cold storage May 1, 1917, as reported by the Department of Agriculture at Washington, were 2,586,593 pounds, the holdings of 281 firms, against 6,296,854 pounds April 1, the holdings of 300 firms, a decrease of 3,710,261 pounds. May 1, 1917, 211 houses reported holdings of 2,433,144 pounds against 1,081,913 pounds the same date last year, an increase of 1,357,231 pounds.

Guy H. Miller, proprietor of the Venadera herd of registered cattle, writing from Modesto, Cal., says: "I note in the issue of May 19, under the heading 'Livestock and Dairy Notes,' it is stated that the Guernsey cow Clementine Mabel, 11

years 11 months old, is the oldest cow in the State Dairy Cow Contest, and produced 56 pounds of fat in March. This statement is somewhat in error. I think the oldest cow in the contest is the Jersey cow Petroleda, 15 years 2 months old on entering the contest, owned by J. W. Bomberger of Modesto. This cow has been doing remarkably good work in the contest for a cow of her age, and for the month of March is credited in the published report with producing over 41 pounds of fat."

Beef Cattle.

Yosemite National Park has been opened to cattle grazing by an order of the National Park Service. About 100,000 acres are available for grazing there.

Fuller Brothers shipped recently a carload of fatted steers from their ranch near Calexico to the Kansas City market. This is said to be the first shipment of fat cattle ever sent East from that point.

The summer range available in the Shasta National Forest is as follows on both government and patented lands: Government land, 1,295 cattle, no sheep; patented lands, 3,500 cattle, and 3,700 sheep.

Many stockmen in Modoc county have sold out in face of acknowledged shortage of meat, because they could make more money in grain and other crops. They believe the packers assigned districts to each other and refused to buy in each other's districts.

It is reported that the Department of the Interior will this year open every available acre in the Yosemite Park to stockmen for grazing at the earliest possible date. Park rangers state that field conditions are very good in the Park this year.

Benj. Quigley, of Linne, Cal., writing under date of May 24, says: "There is a lot of good beef to be had in this county now, but conditions are not favorable for fall beef. The range is short and all available grass will be consumed early. There was no wild hay to mention, and everybody will cut every straw possible for grain, and go into the winter short of hay again."

Swine and Swinemen.

The Highland Herd of Fair Oaks, Sacramento County, is a young herd. It carries the blood of such renowned animals as Patternmaker, Brendel's Beauty and Jim's Dandy, all famous prize winners of Eastern shows.

Mr. T. H. Munson of Pomona believes in going in the hog business right. His first litter of pigs were from a fine sow, Tecumseh Wonder, 604131, and sired by Rood's Giant, 253447. Mr. Munson has two fine-looking brood sows for a start. He expects to announce two boars for sale in the fall.

Sheep.

Two yearling Merino rams of the Meham flock, sheared for the first time this spring, yielded fleeces of 42 pounds each.

George W. Perkins, chairman of the Mayor's committee on food supply in New York, has purchased 10,000 western sheep of good breed and will sell them to farmers of the State at cost, in an attempt to revive sheep raising.

Henry G. Kaupke of Kaupke Bros. has just returned from Oregon, where he bought 30 registered Hampshire ewes and their lambs to add to their flock. They have a fine lot of lambs this year. They raised about 140 per cent. The feed condition in Yolo County is improving the last month.

The Frank Meham Estate reports recent sales as follows: To Santa Cruz Island Co., 50 American Merino

and 50 Rambouillet rams; to C. A. Ornbaum, five Shropshire rams; to A. O. Stratton, two Shropshire rams; to Pimental Bros., Byron, 42 cross-bred Shropshire and Merino rams; to John Monte and Frances Fox, of Nevada, five Red Polled bulls, and one Red Polled bull to J. W. Wood, Anderson.

America has at the present time fewer than 50,000,000 sheep, though her domestic requirements call for three times that many. Fully half of our wool supply now comes from abroad. Yet there are vast areas of waste land in various sections of the United States which with little effort could be turned into excellent sheep pasturage, and which the prevailing high prices for mutton and wool should induce farmers to take advantage of.

Horses.

The annual meeting of the California Draft Horse Breeders' Association was held at the University Farm, Davis, on May 29.

Letters have been received in Los Angeles from the depot quartermaster of Fort Reno Remount Department, Oklahoma, stating that his department wants to purchase at once a number of four-year-old colts and in the future will want a number of six to ten-year-old horses and five to ten-year-old mules.

Livestock Miscellaneous.

The National Livestock Association of Canada is establishing a ranching company with a capital of \$5,000,000, which has just purchased 492,000 acres of land in Alberta.

Governor Stephens, acting on advice from State Veterinarian Charles Keane, has raised the embargo on cattle shipped into California from Mexico and from the State of Illinois.

The average price for teams of work horses at an auction recently held in Linkoping, Sweden, was \$1,300, and a good single-harness animal brought \$675. There was a fair demand at even these prices.

The appointment of Chas. R. Thomas as manager of the livestock department of the coming fair at Los Angeles this fall assures its success. There is no man in the United States better qualified for the position.

Some Good Butter Records.

The following records have been made in the dairy herds of McAllister & Sons on a recent test: Seven-day records: Woodcroft Ybma Pietje, 31.28; K. S. P. Clorinda, 3 1/2 years, 29.39; Westview Aagie Colantha, 3 years, 28.56; Allenvall Daisy Walker, 4 years, 28.34; Etta Changeling Wildwood, 3 years, 27.24; K. P. Tola, 4 years, 26.94; Allenvall Clothilde Walker, 3 years, 26.60; Allenvall Pauline Walker, 3 years, 26.42; Orndyke Duchess Korndyke, 26.35; Westview Pearlle Alcatra, 3 1/2 years, 25.68; Maud Racheal Segis, 25.48; Forum Goldleaf Segis, 3 years, 25.20. Thirty-day records: Woodcroft Ybma Pietje made 124.02 pounds butter in thirty days; K. S. P. Clorinda, 117.15; Etta Changeling Wildwood, 109.25; Orndyke Duchess Korndyke, 109.23; K. P. Tola, 108.36; Allenvall Pauline Walker, 115.16; Maud Racheal Segis, 103.35. Among the two-year-old records that have been made are K. P. Baby Walker, 23.18; Segis Spring Farm Pontiac De Kol, 22.78; Queen Pontiac Butter Boy, 22.64; Allenvall Pauline Walker, 21.31; Allenvall Betty Walker, 21.02; K. P. Woodland, 20.68; Forum Goldleaf Segis, 20.15.

Stocks of Frozen and Cured Meats.

Frozen Beef—The total stocks of frozen beef reported in the United States by 265 firms on May 1, 1917, amounted to 98,826,285 pounds.

Cured Beef—The total stocks of cured beef reported by 280 firms on May 1, 1917, amounted to 35,573,221 pounds.

Frozen Pork—The total stocks of frozen pork reported by 249 firms on May 1, 1917, amounted to 63,533,753 pounds.

Dry Salt Pork—The total stocks of dry salt pork reported by 350 firms on May 1, 1917, amounted to 204,479,251 pounds.

Sweet Pickled Pork—The total stocks of sweet pickled pork reported by 413 firms on May 1, 1917, amounted to 339,437,381 pounds.

Lard—The total stocks of lard reported by 375 firms on May 1, 1917, amounted to 109,355,496 pounds.

Frozen Lamb and Mutton—The total stocks of frozen lamb and mutton reported by 147 firms on May 1, 1917, amounted to 4,337,455 pounds.

California Hog Book

A Practical Treatise on Hog Raising in California

By W. S. Guilford

Director of Agriculture, Sacramento Valley Irrigation Company and Practical Swine Breeder

First Edition—1916

256 pages of text; 31 pages half-tone engravings, besides line cuts. Cloth bound.

The author has had large personal experience in hog breeding, besides the opportunity of observing many plants in this and other States. He has brought together a wealth of practical and scientific information concerning the hog, its anatomy, the breeding, feeding, marketing, as well as diseases and remedies.

Contents by Chapter Titles

The Hog Industry. Hog Growing Conditions. Description of Hog. Judging and Selecting Hogs. Care of Boar. Care of Sow. Growing Pigs. Hog Feeds. Hog Feeding Suggestions. Hog Growing Systems. Hog Buildings. Hog Appliances. Handling Hogs. Hog in Health and Disease. Profit in Hog Raising. Markets and Marketing. Value of Purebred Stock. Breeds. Hog Breeder. Hog Breeding. Exhibiting Hogs. Home-made Pork Products.

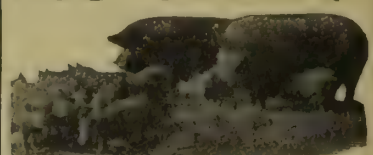
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CHICO'S FAIR ONE OF ITS BEST.

The Butte County Spring Exposition, which closed its gates last Saturday, was one of the most successful in its history. The total attendance was in the neighborhood of the 30,000 mark and the feature exhibits were of the finest. Rarely have so many head of high-grade stock been brought together in that part of the State as were assembled in the stock parade which took place on the last day. Over 300 purebred registered animals were on exhibition, representing the principal purebred stock farms of California.

Beef shorthorns were shown by H. L. & E. H. Murphy of Perkins and Jesse Bennett of Chico, who carried off the blue ribbons. Butte City Ranch was awarded first on senior yearling. In the dairy type of shorthorn, Alexander & Kellogg of Suisun led. Other successful exhibitors in this class were Murphy Bros., Butte City Ranch, G. A. Murphy and Jesse Bennett.

Among the contenders for Holstein honors Morris & Sons of Woodland carried off the trophy for best bull with Segis Pontiac DeKol Burke and other prizes. The prize for grand champion Holstein cow went to the Stanford ranch at Vina. The Henderson Co. of Sacramento took third on senior bull calf.

In the Jersey exhibit McLouth & Dads of Orland took first honors for grand champion cow and bull. S. F. Williams of Orland was a close competitor in this class. The Williams cattle were first prize winners along other lines, however. Other successful exhibitors in this class were Brooks Bros., Chico; Gurnett & Myhre, Orland; Orville Canfield, Chico; Mr. Reynolds, Chico; Chas. Leonard, Glenn.

The Black Hawk Stock Ranch carried off the award among shire horses. All awards on Shropshire sheep were given to the Butte City Ranch.

There was a very creditable display of swine of all types. The \$50 prize offered by the Butte City Ranch for best Berkshire sow bred by exhibitor went to Frank Brush of Santa Rosa. The Jas. Mill Orchard Co. took first on Berkshire aged boar. Frank Brush, Santa Rosa, took first on senior yearling boar and other awards. Butte City Ranch took second on aged boar and first on senior yearling sow. J. R. Cook of Paradise, Butte county, took most of the ribbons on Poland-Chinas. Among Duroc-Jersey swine Haden Smith of Woodland and H. P. Slocum of Willows divided the principal trophies. Maurice Rucker of Fair Oaks, T. L. Costa of Chico, W. V. Bennett of Chico, Karl Kioldstad and C. Van Orsdel also received recognition for creditable exhibits of Durocs. H. E. Richardson, Chico, took all Hampshire awards, and Harry Huffman of the same place took all Chester White awards.

Prof. J. I. Thompson of the University Farm, Davis, and C. W. Rubel, University of California, Berkeley, did the judging.

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POLAND-CHINAS—Big type combined with quality. Choice bred sows, gilts, boars. W. D. Trewitt, Box 82A, Hanford, Cal.

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CARRUTHERS FARMS BERKSHIRES—Cholera immune. Second annual sale August 2, 1917. Mayfield, Cal.

REGISTERED BERKSHIRES—Young stock for sale sired by a first prize son of Laurel Champion; prices right. Imperial Stock Farm, Morgan Hill, Cal.

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FIRST PRIZE HERD—Comprising the three most noted families of the breed: Golden Model, Crimson Wonder and Colonel. Offering line bred show winners and show prospects in each family as good as can be found in United States. Also weaned pigs. Seeing is believing. It will pay you to investigate this offer. Haden Smith, Woodland.

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HEAVY BONED DUROCS—A few service boars for sale. Ormondale Co., Route 1, Redwood City, Cal.

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LARGE YORKSHIRES—A few choice young boars and gilts for sale. Riverina Farms, Modesto, Cal.

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GOTSHALL & MAGRUDER—Breeders of Registered Holstein-Friesians. Ripon, Cal.

CHOICE HOLSTEIN bulls for sale. No females. Millbrae Dairy, Millbrae, Cal.

REGISTERED HOLSTEIN BULLS for sale. C. L. Morse, Route B, Modesto, Cal.

REGISTERED HOLSTEIN-FRIESIAN CATTLE—J. M. Campbell, Escalon, Cal.

REGISTERED HOLSTEIN BULLS for sale. Sunnyside Ranch, Willits, Cal.

REGISTERED HOLSTEIN CATTLE—E. E. Freeman, Route B, Modesto, Cal.

BREEDER OF HOLSTEIN-FRIESIAN CATTLE—Dr. Ben Stetson, Napa, Cal.

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N. H. LOCKE CO., LOCKFORD, CAL. Jerseys Bull No. 432, born Dec 2, 1915. Sire, King's Valet; Dam, Derrin's Lassie of L. She produced 604.6 lbs. fat in 351 days at 4 years. Price, \$200. Bull No. 491, Oct 20, 1916. King's Valet—Sunshine of L. 56.9 lbs. fat third month. Price, \$100. Records made under dairy conditions at a profit. Service bulls and bull calves with profitable production backing. Prices, \$50 and up. Poland-China boar Big Wonder, over 400 lbs. A good breeder, \$50. Chester White Swine—Boars and Gilts.

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FOR SALE—Guernsey bull, 8 months old; Lord Kitchener and Violet's Pride of Iowa blood. F. A. Zane, Redwood City, H. F. D.

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FOR IMMEDIATE SALE—15 registered Shorthorn bulls, one year to three years of age. Grand individuals in good flesh, fashionably bred from high-class sires and dams. Also two registered Percheron stallions—cheap. Apply: Wm. Bond, Mowry Station, near Newark, Cal.

SCOTCH AND SCOTCH-TOPPED SHORTHORNS—We have the largest herd of straight Scotch cows in California. Foundation stock of both sexes for sale; also a choice lot of range bulls. Barco Ranch, Hollister, Cal.

D. O. LIVELY STOCK FARM, INC., 216 Hobart Bldg., San Francisco, breeders of Hereford cattle. A few choice heifers for sale. We buy and sell livestock on commission. Farm at Mayfield, Cal.

REGISTERED YEARLING SHORTHORN Bulls—Heavy-boned, thick-meated Scotch and Scotch-topped breeding. Ormondale Co., Route 1, Redwood City, Cal.

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REGISTERED AND UNREGISTERED Shorthorn bulls for sale. Paicines Ranch Co., 320 Sharon Bldg., San Francisco.

INNISFAIR DAIRY SHORTHORNS—Registered young bulls for sale. Alexander & Kellogg, Suisun, Cal.

HOPLAND STOCK FARM—Registered Shorthorns. Prices on application. Hopland, Cal.

REGISTERED HEREFORDS—H. H. Gable, Diamond G Ranch, Esparto, Cal.

SIMON NEWMAN CO., Breeders of Registered Herefords, Newman, Cal.

GEORGE WATTS—Breeder registered Herefords. Bishop, Cal.

SHORTHORNS—Carruthers Farms, Mayfield, Cal.

SHORTHORNS—Fair Oaks Ranch, Willits, Cal.

SHEEP AND GOATS.

D. E. KELLNER, importer and breeder of Hampshire sheep, Eugene, California, offers for sale a choice lot of Hampshire Ram Lambs, sired by Walnut Hall and Butterfield; rams purchased at Salt Lake, August, 1916; lambs ready for delivery after July 15, 1917. Inspection and correspondence invited.

F. A. MECHAM ESTATE, Petaluma, Cal.—Breeders and Importers of Shropshire, East Angles and American Merinos, both sexes. Also Red Polled cattle. Take electric car at Petaluma or Santa Rosa for Live Oak Ranch.

KAUPKE BROS., WOODLAND, CAL.—Breeders and Importers of Hampshire sheep.

DORSETS AND ROMNEYS—Dorset ram lambs for sale. John E. Marble, Los Angeles.

BISHOP BROS., SAN RAMON, CAL.—Breeders and Importers Shropshires.

CHAS. KIMBLE—Breeder and Importer of Rambouillet. Hanford, Cal.

HORSES AND MULES.

HORSES—For sale, 3 and 4 year-old Percherons. Broke and matched, \$250 to \$300 per span. S. L. Skaggs, Madera, Cal.

REGISTERED SHIRES—Black Hawk Stock Farm, Importers and Breeders. Easton & Ward, Proprietors, Burlingame, Cal.

MISCELLANEOUS.

CROLEY'S BALANCED DAIRY FEED—the cheap milk producer; and Croley's Calf Meal—the best California calf raiser. Geo. H. Croley Co., Inc., 631-637 Brannan St., San Francisco.

BUTTE CITY RANCH—Shorthorns, Shropshires, Cholera Immune Berkshires and Ponies. Special offering of sows, pigs and bulls. Butte City Ranch, Box P, Butte City, Glenn Co., Cal.

FEED, FREE RANGE, State, Government land, any amount. Booklet free. Joseph Clark, Sacramento.

EIGHT JERSEY-HOLSTEINS—Tuberculin tested; \$75 each; average four gallons day. W. J. Gormley, 409 N. Stockton st., Stockton.

Jerusalem Artichokes for Hog-Feed

To the Editor: Noticing a patch of waste land, I induced the farmer to plant Jerusalem artichokes there on. The land resembled your adobe, but of course got more rainfall than is common in California. The tubers took hold at once and made an amazing growth. As it happened, the season was unusually dry; but it was estimated that there were ten tons of tubers to the acre, the count being made by digging a measured patch.

Then the hogs were turned in to harvest the rest of the tubers. It proved to be splendid feed; and, with corn to finish them off, the animals slaughtered sound and sweet. The farmer esteemed it the cheapest hog-feed he ever raised.

There was a great crop of tops to die down and lighten that tough soil, and the hogs aerated the soil by rooting for the tubers. Next season, and the one after, the crop was nearly as good from remaining tubers growing.

With the tubers working in that soil for three years, the died-down tops to plow under, the mechanical work of the hogs, and the droppings,

that waste land turned up comparatively mellow and rich when finally plowed and seeded down.

I noticed in your State that the Jerusalem artichoke makes an amazing growth; and it suggests itself to me that my observations here in Pennsylvania might apply to parts of California possessing sufficient rainfall. I don't believe the plant would require an unusual amount of water to mature good tubers.

THOS. S. BLAIR.

Harrisburg, Pa.

[Jerusalem artichokes do very well in California, at least in our bay region, where they do not usually get irrigation. They are planted like potatoes, in hills about 3x4 feet apart, and on good ground produce as much as 50 pounds per plant. They are planted as early in spring as the ground is ready, for frost does not hurt them. They may be plowed out so soon as the tops are dry, and sold for human food as well as hog feed. Sacks that hold 125 pounds of potatoes hold about 95 pounds of artichokes. But on hog ranches the better way is to let the hogs harvest them, as suggested by Mr. Blair.]

A Model Hog House

[Written for Pacific Rural Press.]

Appearance of surroundings counts for much with the breeder of purebred livestock. Often the best of animals show poorly when housed in old dilapidated buildings. It was to overcome this, as well as to save labor, that A B Humphrey of Escalon built one of the most modern hog houses in the State. The building is a combination farrowing and fattening house, having 12 pens 10x12 feet on one side and 10 pens of similar size on the other side, separated by an eight-foot alleyway in the center.

The sides are studded and covered with rustic, a three-foot window being provided for each pen, as well as a door which leads to outside pens. The floor of the entire building is of concrete, board

platforms being used in the pens for sows so that they need not lie on the cold cement. The roof is provided with windowed ventilators which are all operated with a patented lever.

The alleyway has a concrete floor also, that slopes from the north to the south end, a dipping tank being sunk in the floor and covered with boards when not in use. On the east side two pens have been left out to provide room for a pair of scales, breeding crate and passageway to the feed barn which joins the building on the east.

By having water troughs automatically supplied from a trap outside of the building, all work can be done under cover, either with breeding or fattening stock, regardless of weather conditions.

Successful Beef-Growing in So. California

[Written for Pacific Rural Press.]

Sylvester Mendenhall, head of the Mendenhall Cattle Company, Escondido, Cal., recently furnished a Rural Press representative the following pithy points on beef raising in Southern California:

"I get all the lists of Aberdeen and Polled Angus stock raisers from the University of California each year. I send for, and buy up, their bull calves to use on my cows, which are all high grade Angus stock. I always use purebred bulls, however.

"The best time to get beef stock off the market is at about two years. After that, the cattle are too heavy for profit or to fill the Southern California demand. I always brand about 400 a year and figure off about 10 per cent for loss or stolen stock. In marketing, I ship four to five carloads at a time. I get better prices by shipping to Pomona than to Los Angeles.

"For feed, we depend on ranging altogether, having 11,000 acres for

ranging on Polamar mountains. No hay is raised for beef stock. I sold 11 carloads, 33 to a car, in September last, at 9 cents, at an average weight per head of 1,200 pounds. Everything goes when fat; nothing is held over.

"I have thought much about the baby beef question, as my 450 cows give me about 400 calves a year, but as I have not feed enough to keep them, I have dismissed the matter from consideration."

NO ILL EFFECTS FROM FROSTED SILAGE.

According to the experience of J. A. Pelanda of Stanislaus County corn can be silaged after freezing without any ill effects to dairy cattle. Last year Mr. Pelanda's corn got pretty badly frosted in the field but he went right ahead and cut it into the silo, turning a garden hoseful of water into the cutter while the machine was in operation. His

stave silo holds 65 tons and in the spring after the silage had all been cleaned out there wasn't a sign of moldy silage clinging to the lumber and he states that his cows ate the silage as readily as though it had never been frosted.

This year he has a crop of barley on his corn land which he will use in filling the silo part way so that he will have green succulent feed without pasturing till his corn is ready to harvest in the fall.



SAN RAMON SHROPSHIRE
WINNINGS P. P. I. E., 1915.

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VETERINARY QUERIES

[Answered by Dr. H. B. Wintringham, Petaluma, Cal.]

[Subscribers wishing an immediate reply should send money order for \$1.00. No charge for questions answered through this department. Name and address of subscriber must accompany each query.]

Horse Becomes Thin and Wobbles.

To the Editor—What is the cause and treatment for a young horse which has been running on good, green pasture and has become thin, and when starting to walk its hind parts will swerve to either side?—E. N. D., Clements.

Give twenty drops beechwood creosote in half pint oil once a day for four days, then one teaspoonful fluid extract nux vomica twice a day for two weeks.

Ptomaine Poisoning.

To the Editor—We had some hams and shoulders which spoiled. We threw them out. Our little dog ate some of them, and a few days afterwards commenced to have fits. She foams at the mouth and acts like a mad dog. What can I do for her?—P. B. B., Lower Lake.

This is ptomaine poisoning. Give castor oil, one teaspoonful daily.

Colt Has Warts on Lips and Nose.

To the Editor—I have a yearling colt that has myriads of warts on his lips and nose. How can they

be removed? I have tried rubbing lard on, but it had no effect on them.—J. L., Elk Grove.

Paint warts with a two per cent solution iodine three times a day until they disappear.

To the Editor—Have a cow which calved seven weeks ago with acute inflammation of the milk passage; seems to affect only about one-quarter inch at end of teat; can get milk only with much effort and it hurts her. What is the cause, prognosis and treatment?—P. H. H., Linden.

This is an infection. Give one dram hexamethylamine in solution three times a day.

Cows' Bags Caked Often.

To the Editor—My cows are troubled with a caking of the bag; milk appears stringy and white. One-quarter of the bag is caked hard. I have let them go, and they always come out of it. I feed alfalfa and beet pulp. What is the remedy?—G. H. B., Hemet.

Give one dram hexamethylamine in solution three times a day.

A REMEDY FOR BLOAT.

For bloat in cattle, caused by alfalfa or green clover, I have found most effective a piece of small rubber hose, gently inserted through the esophagus to the stomach, through which the gas immediately escapes, without harm to the animal. Try it.

JNO. P. IRISH.

This method has been approved by many farmers. The hose should have a smooth end and be greased or vaselined to avoid irritation of membranes.

It should be remembered that a rubber hose is not a panacea and the operator should always be ready to use other remedies:

A wooden bit made from a short piece of wood and held bitwise by passing a string over the head causes the animal to keep the mouth open, thus causing the gas to escape.

A small cup of kerosene or turpentine in a quart of oil dosed into the animal is also recommended.

A dose of 40 per cent formaldehyde in a quart of water is a specific. Three tablespoons of formaldehyde in a quart of water for a grown animal, or one-fourth for a calf or sheep of this amount. Give through the mouth.

The use of a trocar and canula may be necessary. This instrument is used to puncture the rumen just below and in front of the hip bone on the left side of the animal. This puncture permits the gas to escape. Every farmer should be equipped to handle cases of bloat.

ANOTHER REMEDY FOR BLOAT.

I have read the remedies for bloat in cattle in the Rural Press. Have used all of them—even the knife, or trocar—but a big tablespoonful of pine tar on a rag and put on their back teeth will cure every time.—Peter Shorow.

A Lop-Sided Ration for Pigs.

While everybody in the country is trying to save every penny possible we are apt to be "penny wise and pound foolish" at times and this is

the case with a dairyman neighbor of ours who is raising a good-sized bunch of pigs.

The only thing that these pigs are fed is skim milk and besides this they have the run of a good-sized barnyard and the night lot of the milk cows.

They all look sleek and fat, especially just after separating them when they are fed, but they are not growing as they should because of lack of a little grain.

The skim milk that they are being fed is worth 30 cents a hundred at the present time, which is probably more than it is worth fed to pigs as they are being fed even at the present prices of pork. It would be worth more than 30 cents a hundred though if some grain were fed, even at present prices and the packer would doubtless be glad to pay enough bonus to offset the entire expense for grain. The only reason such an abundance of skim milk is fed is because it doesn't seem to cost so much as it is really worth, while barley seems to cost more than it is worth when you have to go out and buy it.

Killing Tules With Hogs.

Five brood sows and their pigs did such a good job of rooting and eating on a four-acre piece of lowland covered with tules on A. M. Biben's ranch in Stanislaus County that they practically cleaned off all the tules, and at the same time grew into good feeder hogs themselves.

The patch that Mr. Biben kept them on last fall and winter was a piece that was worthless for farming because of sub-irrigation, but after the hogs were taken out this spring he was able to get on to the piece and plow and drain it at small expense with the result that he has added four acres of tillable land to his ranch as well as a lot of pork money to his purse.

The stock ranges on the west side of the Sacramento valley are generally short of feed. Stock will soon be moved to the lowlands.



Save the Hogs

HOG CHOLERA CONTROLLED, providing you vaccinate your hogs with I. S. V. Co.'s 20 C. C. Standard dose Serum. Your hogs will be immune against cholera. Ten C. C. Serum add 1 C. C. of Virus will immunize your 3 to 10 day old pigs their natural life if you use our high potent Serum and Virus, made under U. S. Government License No. 25. Learn how to vaccinate your own hogs and then you will know it is done right. Write for free booklet on Hog Cholera. Agents wanted in every county.

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P. P. I. E., 1915; Sacramento, 1916.

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CRITICS' AND CUDDLERS' CORNER

Subscribers are welcome to praise or to condemn (in letters of not over 200 words) anything which appears in the reading columns of this journal. Contributors to this department may drive and counter-attack each other as they see fit without endorsement or response on our part.—Editors.

Who Says No Labor Shortage.

To the Editor: Three of us have been running a ranch which includes 120 acres of fine river bottom. At the first rumor of food shortage, we advertised in the Rural Press and elsewhere for a man to run our dairy so we could farm the bottom intensively. We built a good house, in a good location, for the man we expected to get. We have had five men, our herd has been somewhat misused, we have worked under way requiring every hour of our time, and not a man in sight. And now for the proof: Not one of the men who have left have had any complaint as to the work, the pay, or the living conditions, except about trifles which amount to absolutely nothing, and were obviously merely excuses. Now we have a really good man, who came to investigate. He says the work is not hard, conditions O K, and pay fine; but he wants a chance to get a ranch on shares, with chance to buy it out of his share. He thinks now is a rare time for a man to get such a start. So he will turn down nearly \$100 a month, with house, garden, wood, water. We offer shorter hours and more pay than we give ourselves, and then we can't get a good man. If we don't find a man this summer who we think will stay for some years, then next year we will plant just what we can handle ourselves. We all know that when the food shortage is bad enough some of the real estate agents and lawyers will come back to work.—P. F. B., Escalon.

What White Laborers Want.

To the Editor: In the last issue of your paper you uphold a class of farmers who claim to be unable to carry on their farming unless they can run in a horde of Orientals to take the place of American citizens. It is all nonsense to claim white labor won't do the work as well as these Orientals. The American laborer wants to be treated humanly and have a place to sleep at least as good as the farmers' hogs, while the Oriental will be satisfied with any kind of quarters, and if the boss talks to him like a dog he shrugs his shoulders and pretends he doesn't understand. I worked for a number of farmers in the Stockton and Sacramento districts before I started ranching for myself and the conditions a man had to work under were worse than I have seen in any other line of work. If these farmers had their way about it they would have the men slaves. How many of them consider the man who is good enough to do the work is good enough to associate with him and his family?—Subscriber, Tulare.

Telling Farmers to Hunt a Job.

To the Editor: I note in the Press that a great grain dealer advises Petaluma poultrymen to sell their stock and go and hunt a job. Think of it, a man accustomed to the independent sort of life he has lived on the land going out to hunt a job working under another's orders! Perhaps if he gets a little money for his hens he might use it in hunting some of the hoarded stocks of grain said to be withheld for gambling purposes. He might take a gun along.—Reader, Santa Clara County.

Farmers' Produce Turned Into Poker Chips.

To the Editor: The great interest in the farmer now being shown by everybody, from President Wilson down, may result in much good. Drawing attention to the soil and things that grow, both vegetable and animal, is a good thing for the nation collectively and individually.

But why arouse the farmer to make strenuous efforts to raise more by family, or Oriental aid, or by use of city derelicts turned out of jail for the purpose, when the farmers' produce is to be converted into poker chips for gamblers, said gamblers being protected by law not to mention the power they have otherwise at their disposal. I note Mr. Hoover designates these gamblers "skunks." He owes the skunk family an apology for while the latter is socially unpleasant at least their pelts are of value.—C. M. M., Palo Alto.

Should Laborers Carry Wash Tubs?

To the Editor: If laborers were treated differently the farmer would have no trouble getting help. C. W. Kesner invited the Council for Defense to go to his ranch and see the conditions. He said some of the white men have not even a roll of blankets and if they take a bath once in two weeks they do well.

Does Mr Kesner expect a white man to pack a roll of blankets and a wash tub? There is a lot of places where the white man hasn't even a bunk house to stay in. A lot of them have to sleep in the barn. Why not treat laborers here in California as they do in eastern states, then you would have no trouble getting help? It's a shame the way farm help is treated here in California, Nevada and Washington.—S. P., Fresno.

A CHEAP CONCRETE SILO.

Mr. C. W. Mains of Corona, Cal., has a cheap and good all-concrete silo which he is very proud of. It is 16x30 and holds 119 tons of ensilage, and only cost \$2.80 put up on the place. In building it, first a concrete circular base was laid, then upon this base vertically 2x4's were placed and on the inside was tacked with small nails one layer of metal lath. Then on the inside was plastered a heavy coat of 2 to 1 mixture of sand and cement. After this was dry another coat of half and half was smoothly placed over that. Then all the 2x4's were taken down and bale wire strands were stretched and tightened around the outside of metal lathing. The wires

were placed every 6 inches apart at the bottom, and kept widening out to 2 feet apart at the top. After the wires were all stretched cement was plastered all around about 4 inches thick and so clear to the top.

To make such a silo takes 15 yards of sand and 120 sacks of cement. The door gap in silo is 2 feet wide and in this was placed (before being plastered) a 1-inch iron rod every 2 feet. This provided a good ladder. The doors are in 2x3-foot sections and fit in on a level one above the other. Mr. Mains has filled his silo twice with corn and says he never has a bit of silage spoil. The silo certainly looks like a good one. The State Sherman Institute, Arlington, Cal., has two like this, and likes them very well.

The average value of horses in Canada is about the same as in the preceding year, but milch cows, other cattle, sheep, and swine show a substantial increase, and return values that are higher than in any year since these records were started in 1909. Horses three years old and over average for Canada \$159, against \$160 in 1915; milch cows are \$70, compared with \$62; cattle between one and three years old average \$48, against \$38.



KODAK on the Farm

A Kodak fits into farm life from the pleasure side, from the business side and as a recorder of the familiar events that are so full of interest—the sheep washing and shearing, the haying and harvest scenes, threshing time, and apple picking.

It gives pleasure on every holiday—the grange and Sunday school picnics, the fishing and hunting trips, the circus and the fair—then there are the familiar scenes around home; the children and their friends, the family pets—there is good fun in photographing them at the time and afterward the pleasure of the pictures in the Kodak album.

And on the business side the Kodak helps to keep the important records in a business-like way—the building and ditching, the live stock, the orchard, the crops. Pictures of these things with an autographic record made on the film at the time of exposure are invaluable to the business-like farmer.

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Rural Press Poultry Department

Poultry for Profit

[Written for Pacific Rural Press by Susan Swaysgood, Pomona.]

Rabbit Questions.

How and what should we feed rabbits? Should they have green feed? Should the buck be allowed to run with the young? How old should a doe be before breeding? Is every month too often to breed them? We breed on second day after young is born; is that too soon?—Mrs. J. R. H., Exeter.

Taking your questions in turn twice a day is all right to feed except in case of does that have large litters, when it would be better to give a little at noon. What to feed is quite a large question, because it involves, what not to feed too.

Taking the what not to feed first, don't feed alfalfa that has been frozen, nor alfalfa with the dew on. Any other kind is all right. Next don't feed beet-tops—the beets are all right. Feed plenty of hay or green feed, a little rolled barley or whole oats and always keep a piece of rock salt in the pen and give plenty of fresh water. What to feed the does that are fresh is a little more particular; some people make no difference, but if you notice these are the people who lose so many rabbits and have what they call bad luck. Feed your fresh does, for a few days at least, milk and bread, rolled oats dry, the same you use for breakfast and a little wheat bran, along with carrots, cabbage or any other good thing you have and give both milk and water to drink, letting the doe choose.

What to Feed the Young.—When the young are three weeks old they will begin to eat and you can start them with a little rolled barley and green alfalfa or other greens, but beware of bloating from too much green feed.

The buck should be kept strictly by himself. It is a dangerous practice to allow him to run with young. A doe should be five months old, and six is better, before being bred. The male should only be left with a doe about two hours and should then be removed. If a doe is not with young she can be bred every ninth day until she is, but after she is with young the male should be kept away.

To your last question, would say: Your does will soon die under such treatment. Give them time to re-

cover and breed them when the young are three weeks old—not before.

Turkeys' Toes Turn Up.

We have young turkeys that when they are turned out in the field their toes turn over on the side. They were hatched in incubators. Please advise through Press.—J. E. T.

This is a bad season for young turks. Your turks have the rheumatism and yours are not the only ones that have it. Keep them in until the ground warms up in the morning and let them drink water in which you put 15 grains of Iodide of Pota. to one quart of water. Now measure it and get it correct and let them drink that until they go out every day until they are better. If you could add some kind of litter to the place they sleep in it would help, as the feet and legs should be kept warm.

INTERESTING POULTRY SUIT.

A suit of interest to the poultry people of Southern California has been filed in a Los Angeles court. The Poultry Producers' Association of Southern California, formed at the instigation of Harris Weinstock, State Market Commissioner, asked for an injunction restraining certain members of the Association from selling their eggs in the open market. The defendants are F. B. Church, Mrs. F. B. Church, Lowery Bros., and William Sharp. It is alleged that they agreed to sell the products of their flocks through the Association until 1920 and that they are not carrying out their agreement, but selling wherever they can get the best prices.

RECIPE FOR CHICKEN POX.

[Written for Pacific Rural Press by A. E. Hevener, Calexico, Cal.]

Take 90 pounds of bran and 10 pounds of sulphur; mix the two together, and feed it dry to your hens and turkeys for three days. Don't feed them anything else while you are feeding the bran. Then skip three days; and at the end of this period, if there are any still sick, shut them up and continue the bran three days longer. This is a sure cure, for I lost over \$100 worth of chickens and turkeys the year before I tried this recipe.

Also for gapes in little chickens, take a small feather, dip in turpentine and insert down the windpipe.

POULTRY NOTES.

Straw is high, but anyone who has a little alfalfa patch can spare enough short-cut alfalfa to furnish litter for the hens.

Stocks of eggs in cold storage in Los Angeles May 17, 1917, were 68,971 cases against 53,585 cases same date last year, an increase of 15,396 cases.

For catarrhal colds give a slight physic and make the birds exercise more. Exercise is the greatest medicine in the world for all ailing birds, for very often a good run that works up the blood dispels every trace of disease.

When hens begin to "go light," if they can be gotten out in the open and two small boys put to give them a run, they will often get all right, because the exercise starts the action of the liver and nearly all these things begin with congestion of the liver.

Purebred and Commercial

[Written for the Pacific Rural Press by Harry Mortenson, Suisun.]

Provide Shelter for the Hens.

We are now nearing the season of the year when Old Sol rules supreme and the poultrymen of the San Joaquin and upper Sacramento Valleys, as well as those in Southern California, must see that the fowls have some cool place to go during the heat of the day. Make-shift lean-tos of boards, brush or burlap are all that are necessary. To be convenient they should be high enough to allow the keeper to enter, because the hens delight to lay in out-of-the-way places, and unless you feel like crawling on your hands and knees, make your roof at least three or four feet above the ground.

Windbreaks may be placed under the above head, for where it is not hot during June the wind generally makes up for the heat. This is especially true in the Coast counties. These sea breezes are very refreshing, but often times are detrimental to young stock. The writer has seen young pullets try to get out of the house only to be blown against the wire fence. Avoid this by providing windbreaks.

Don't Ship Dumpy Stock.

The writer recently took a two-days survey of the San Francisco wholesale produce district to study the condition of the market. One commission man had several coops of broilers that were in an awful condition, and if they ever brought anything at all it is a mystery. The poor birds were all but sick, their wings hanging and their heads tucked in under them. If poultrymen ship such stock and expect big prices, they are sure to fall short of their expectations. Right alongside of this coop of culls were some number one stock, so lively that the coop could hardly hold them. They were sold at a premium above market quotation, after being in the place but a few hours, while the scraggly ones had been in the store for two days. Don't blame the wholesaler if you ship poor stock and get but little for them. All stock are sold on their merits.

Eggs Will Be High This Winter.

There are 30,000 more cases of eggs in storage in California than last year, but there are practically no eggs in storage in the Northwest and the storage crop of eggs in the United States is about 163,000 cases shy of normal. The United States Government is a heavy purchaser of eggs and poultry products and will continue to be all winter. This, together with the export trade and shipment east, will have a tendency to keep prices up. But on the

other hand, many housewives, foreseeing high prices this winter, have put down more eggs than ever, in waterglass and limewater. From the foregoing article it will be seen that the poultrymen must adopt the policy of "Watchful waiting."

Poultry in California On the Incline.

Fully 25 per cent more eggs came into the San Francisco wholesale houses this year than last, showing the poultry business is on the incline. The export of eggs to New York was a successful experiment tried out by the Central California Poultry Producers. A representative of the New York Department of Agriculture informed Mr. Romwell, president of the Central California Poultrymen, that California could produce five times as much poultry and eggs and still find a ready market for her product in the Empire State. California eggs bring more in New York than nearby henneries.

CHICKEN CHOLERA.

I think one of my hens has chicken cholera. Will you kindly give me your best prescription for this trouble?—R. P. M., Navelencia.

Thorough disinfection of houses and premises daily. For drinking give one to a thousand solution bi-chloride of mercury.

Poultry Breeders' Directory

Rates in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

WHITE PLYMOUTH ROCKS—Hatching eggs from splendid layers. Mrs. J. B. Tupper, Route A, Ceres, Cal.

BARRED PLYMOUTH ROCKS—COCKERELES—Cockerels—Yes, we have them; also Hens and Pullets—all bred from our Champion Winners at California's leading shows. Also hatching eggs. If it's Barred Rocks you want, get in touch with me right away. Have bred them exclusively for nineteen years. Send for Catalog. Chas. H. Voden, Box 396, Los Gatos, Calif.

WHITE LEGHORN BREEDING COCKERELS—10 months old, from our famous heavy laying, prize winning stock. To make room we offer our regular \$5.00 values at \$2.50 each while they last. Rancho Del Martino, Downey, Cal.

BABY CHICKS—HATCHING EGGS—White, Brown Leghorns, E. I. Reds, Barred Rocks; laying chicks from well-mated fowls; prompt, efficient service. Write for circular. Campbell Poultry Ranch, Campbell, Cal.

S. C. RHODE ISLAND REDS—220-egg record in 12 months; breeding males; eggs at half price. Wm. Larm, 3915 39th ave., Fruitvale, Cal.

EASTMAN'S BRED-TO-LAY Barred Plymouth Rocks—chicks, eggs, cockerels. We organize and trapnest. Fairmead Poultry Farm, Fairmead, California. Box P.

INCUBATORS—For Essex Model Incubators at factory prices, write Geo. H. Croley Co., Inc., Poultry Supplies, 631-637 Brannan St., San Francisco.

CHICKENS, DUCKS, GEESE, GUINEAS, Pea Fowl, Pigeons, Wm. A. French, 545 W. Park St., Stockton, Cal.

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Great Western Milling Co.

Dep't R. P.

Los Angeles, Cal.

Mrs. Best's Letter.

SUMMER WEAR FOR WOMEN.

My Dear Friends: Perhaps the newest things for women's wear that the exclusive stores are showing are the military capes. Capes for evening wear have been worn more or less for some time, but these are street garments. Many of them are of serviceable navy blue serge, with a vest front, and a tie girdle with a convertible scarf collar, while others are of gabardine or other modish cloths, full silk lined with gay pussy willow silk. The colors are varied, but blue, beige and gold are popular. Beige is one of the new shades this spring and is almost a sand color.

The summer suits are all of them much more snug than we have been wearing. The shoulders are narrow and the sleeves as tight as can be worn with comfort. The coats are medium long, except in some of the sport models and except for their being close fitting, really resemble the last season's garment a good deal. Braid for binding is very much seen and on the strictly tailored garment is very good looking.

For wear with these very mannish suits, there are high necked blouses that are worn with a stock of ribbon, many times black.

The majority of the blouses are open at the throat—many of them in the V-neck we have worn so long, while others have the new round neck and still others the square Dutch neck.

A perfectly adorable blouse in the Dutch neck had two frills, one on either side starting at the corner of the square opening, but for wear with the suits the frill in the center is more attractive. It gives a pretty fullness that is especially good this year, when so many of the coats do not button, but just meet in front and are held in place by a belt. Georgette crepe and crepe-de-chine still lead in popularity, although there is a new material that is called broadcloth taffeta that is heavy and makes beautiful waists in tailored styles.

If you have a dressy suit or one you want to wear for dress, it is a good plan to have a Georgette waist of the color of the suit. When the coat is removed, the effect is much more that of a dress if the color is the same. For wear under these thin blouses, you can purchase silk slips with high or low neck, long or short sleeves, for as little as \$2.50. These help the waist to set well and keep the underwear from being so noticeable.

Old lace, or lace in old patterns, is having a revival of popularity. It is used for dresses or as a trimming on blouses, scarfs, parasols and the like. Very pretty jabot collars are shown of lace—a band of lace forming the collar with a cascade down the front.

Underwear, both lingerie and silk are lace trimmed, and fashion experts prophesy a veritable wave of lace frivolities in flet valenciennes and other laces as soon as summer is fairly here.

Practically all the shops that carry women's apparel are having sales, which gives one an opportunity to pick up garments at the very beginning of the season at a very much reduced price. These sales are about a month earlier this year than usual.

THE HOME CIRCLE

Many of the jersey suits in good colors and styles are under \$20, and there are corresponding reductions in the more conservative garments as well.

Very attractive afternoon dresses in crepe-de-chine, in white, flesh and darker colors are not more than \$25.

Summer coats have been cut in price as well, and they range from \$20 for the unlined models in outing style on up in price for the silk lined more dressy garments. Some of these are made with the raglan sleeve, which is particularly good if you want to slip the coat over a suit.

ROSABELLA BEST.

CANNED SALMON.

Editor Home Circle: Will you give me a good recipe for canning salmon and also mayonnaise dressing?—Mrs. V. O. P., Concord.

Make a strong brine of salt and water, and after cleaning fish properly, place in brine for one-half hour; remove from brine; cut into convenient sections and pack in glass jars, with the skin on the outside. Add level teaspoon salt per quart; put rubber and cap in position, but not tight and sterilize for three hours in water bath outfit. Then remove jars; tighten covers; invert to cool and wrap the jars with paper to prevent bleaching when put away.

For mayonnaise dressing, take yolk of one egg, one teaspoon salt, one teaspoon sugar, one-half teaspoon mustard, dash of white pepper, three-quarter cup olive oil and the juice of one lemon. Put the yolk of the egg and the dry ingredients in a bowl and blend them together until smooth. Begin to put in the oil, a few drops at a time, and beat constantly with a Dover egg beater. Alternate the oil with the juice from the lemon until all has been used. When finished, the mayonnaise should be like a thick jelly. Salad oil may be used with a couple of tablespoons of olive oil added to it and the flavor will be very good.

WANTS CLEAN BRAN.

Editor Home Circle: Is the bran that we buy for feeding stock suitable for use in making bran bread?—J. N. G., Watsonville.

No. Feed bran is packed in burlap bags, and in shipping and handling, no especial effort is made to exclude dust and dirt, which would make it undesirable for human food. It is much better to buy the bran flakes in sealed packages or the bran put up in 10-pound cotton bags. These products are packed and handled so the user is sure of a clean product.

A NEW WORK BAG.

A very new work bag to carry knitting or other large fancy work is made out of heavy white linen or Indian head. Make the bag from 12 to 18 inches wide, according to fancy and about the same depth. Then from Turkey Red calico cut out the Red Cross insignia. Sow this to the bag so that the top strip of the Red Cross extends up above the bag and forms a loop through which the arm can slip. The bag is more graceful in shape if the lower corners are rounded off.

RHUBARB RECIPES.

Rhubarb Pie.—One pint rhubarb, cut in small pieces, two-thirds cup sugar, one teaspoon corn starch, one-third cup cold water, one teaspoon butter and plain pastry. Mix the rhubarb and sugar, and cook until the sauce is thick. Add the corn starch dissolved in the water and cook until clear. Add the melted butter. Make a pie shell by covering an inverted pie tin with pastry and baking for about 15 minutes. Then slip the crust from the outside of the pan to the inside and fill with the rhubarb mixture and heap meringue on the top. Brown the meringue slightly in a slow oven.

Baked Rhubarb.—Cut the rhubarb into small pieces and place a layer in a baking dish, sprinkle generously with sugar and alternate in this way until the dish is filled. Sprinkle sugar and grated lemon rind or cinnamon over the top with dots of butter. Bake slowly until well done and it will be a beautiful deep red color.

Canning Rhubarb.—Pack the rhubarb as tightly as possible into a jar. Fill the jar to overflowing with a heavy hot syrup made of twice as much sugar as water and cooked until the syrup threads from a spoon. Adjust the rubber and lid, but do not seal the jar. Sterilize the jar for 15 minutes on a rack in a covered pan of boiling water. The water around the jar should come up to within one inch from the top of the jar. Seal the jar, invert it on a cloth and allow it to cool. Store in a cool, dark place. This makes a good sauce or filling for pies. In a pint jar, place a layer of sugar one-half inch deep, then a layer of rhubarb of the same depth and alternate in this way until the jar is filled, having a layer of sugar on top. Adjust the rubber and lid and sterilize in boiling water as previously directed for 25 minutes. Seal the jar, invert and cool and place in a cool, dark place. This makes a rich sauce. To can without cooking, peel the rhubarb, and pack solidly without cutting, in an upright position. Fill to overflowing with water that has been boiled and cooled. Seal the jar and place where it is to remain. It is not advisable to move or disturb until ready to use. This must be sweetened when opened for use.

ENGLISH WALNUT PICKLES.

Editor Home Circle: Will you kindly send me a recipe for pickling English walnuts?—Mrs. E. A. F., Sebastopol.

Will some one of our readers furnish us with a tried recipe for this inquirer?

NOVEL RECIPES.

Editor Home Circle: A neighbor who has lived in the British West Indies taught me to drink lemon tea. This is made by steeping the dried leaves of the lemon tree and it makes a very pleasant drink. I also use as a substitute for butter, peanut butter, mixed with either Karo or strained honey, to the consistency to spread.—R. B. T., Orland.

Floral Department.

[By George N. Tyler.]

ROSE INSECTICIDES.

The following communication was sent to me to answer: "I am sending rose leaves with bugs on, that are affecting them very badly as they eat through the buds and three to four in one bud. Also on my petunias. I will appreciate any information you can give me regarding them and what to spray with."

I did not see the leaves or bugs, but my advice is to use an insecticide for chewing or eating insects. Use arsenate of lead or the ready-prepared commercial form called Disparene about two pounds to 50 gallons of water. (For rose bugs use at the rate of 10 pounds.) Paris green: Two pounds of quicklime, one-quarter pound of Paris green, 50 gallons of water. The lime helps to neutralize the caustic action of Paris green on tender foliage. Keep mixture well agitated while spraying. For sucking insects, use a contact spray—kerosene emulsion, carbolic acid emulsion, whale oil soap solution, tobacco tea or nicotine. Bulliac—known as pyrethrum powder—use the dry powder dusted on with a powder bellows when the plants are wet.

VIOLETS.

Violets that were planted last February and March are now making strong growth. Keep them well watered and cultivated and also keep off all runners till the end of July, then water regularly and keep them growing all the time and you will pick violets from October on. I picked seven good flowers from one plant today—with good stems, but the flowers were small.

SWEET PEAS.

Should have a mulch long before this. I cannot speak highly enough of shavings from a planing mill for a mulch and am using it extensively. A half-inch dressing is plenty and it keeps the moisture right at the surface. Ten days after watering the soil is moist under the mulch. Keep all flowers picked off and do not let them form seed pods, or they will soon quit flowering. Spray the foliage often to keep down red spider, and give abundant watering at the root twice a week.

DAHLIAS.

The old tubers that were put in cold frames a while back have made lots of shoots. These were taken off and put in sand as fast as they formed. I let them get from two to three inches long before I cut them. They rooted in about three weeks and are now ready to plant out in the blooming beds. These rooted cuttings make the fine exhibition flowers which you see in the exhibitions in the fall. Any good garden soil is good for dahlias, but a sandy loam is best. A good potato fertilizer is just the thing for them. If you can get lots of hardwood ashes, use it in place of the fertilizer, for they require a great deal of potash, same as a potato. When they show flower buds, put on a dressing of from two to three inches of half rotted manure and water through this. The more you water the more and better flowers you will have. To get the large flowers they should be disbudded before flower buds appear. Do a great deal of cultivation, as this helps them to form tubers for next year.



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Good Health.

[By H. E. Pastor, M. D.]

Don't Get "Nutty" on Nuts.

Nuts of different kinds are produced in large quantities in California, and inasmuch as they are a wholesome and palatable food their wider consumption should be encouraged. But discretion should be used. We have a class of dietists in our midst who are clamorous for a substitution of nuts and other forms of fruits and vegetables for meat foods, claiming that nuts are as nutritive as meat and nearly their equivalent chemically. While this may be true, the value of a food cannot be judged on its chemical composition alone. Nuts should not be eaten in amounts large enough to make up any considerable portion of a meal. They contain a large amount of fat and free fatty acid, besides a high percentage of cellulose, which is almost insoluble in the digestive juices. (Cotton and linen are examples of nearly pure cellulose and are practically indigestible.) It is also true that vegetable fats are not, as a rule, nearly as digestible as animal fats, and the ingestion of any considerable quantity of the former gives rise to disagreeable acid eructations. Most of us who have eaten a bag or two of peanuts, unmixed with other food, are quite familiar with this annoying after effect, even when the nuts have been well masticated.

So, while appreciating the great food value and palatability of nuts, and recommending their wider use, we would urge their incorporation in bread, meat and dessert courses, rather than their use as an exclusive diet or nearly so. There are a variety of ways of doing this, known to most capable cooks. Nut loaves, nut salads, nut croquettes and nut cakes, not to omit the nut sundae, all suggest themselves—the latter too frequently and too strongly to our young folks, perhaps. The point sought to be emphasized here, however, is not to be too trustful of the gospel of the nut diet as preached and practiced by extremists. Nuts are like cheese, while difficult to digest alone they promote the digestion of other foods.

No Rose Without Its Thorn.

Since the possibilities of successful rice culture in this State have been demonstrated, many of our people have become quite enthusiastic, as it adds another to the already long list of California's diversified products and is no inconsiderable item in the aggregate of the State's annual agricultural wealth. But the introduction of this new industry gives rise to another problem not so pleasant to contemplate. The May Bulletin of the California State Board of Health has this to say on the subject: "The acreage planted to rice in California this year is said to be twice that of 1916. This will double the problem of mosquito and malaria control in the rice fields and will provide a rich realm for investigation into methods of control. The need of discovering adequate means for eradicating mosquitoes from the rice fields of California grows each year and the malaria problem in the interior valleys of the State does not diminish. Since the most favorable



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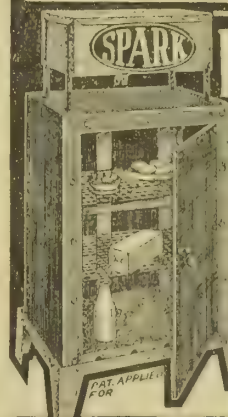
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conditions for the production of rice and for the breeding of malaria-bearing mosquitoes are identical, the problem in the rice fields is difficult."

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Brookdale Nursery,

Los Gatos.

SAN FRANCISCO.

San Francisco, May 30, 1917.

WHEAT.

Further declines in receipts of wheat were offset by a marked falling off in the demand for this grain, and quotations showed a further tendency to weaken during the past week. Russian red stock continues the weakest item in the list. Most of the dealers here expect still further declines.

Sonora wheat, re-cleaned.....None offered
Northern Club.....None offered
California Club, per ctl.....None offered
Northern Bluestem.....\$5.00@5.20
Northern Red.....4.95@5.15
Russian Red.....4.90@4.95

BARLEY.

While there was a little more activity in the futures section of the local barley market this past week, the noticeable easiness in the spot trading continued as prominent as before. Quotations on spot good closed at a loss of \$2 per ton over the previous week's figures, and buyers of round lots were getting concessions from these quotations without any trouble. Reports from interior sections indicate that there will be a heavy barley crop than had been at first anticipated.

Shipping, ctl.....Nominal
Brewing.....Nominal
Choice feed, ctl.....\$2.35@2.40

OATS.

With very little stock on hand for sale, and this of not very good quality, it was only natural that quotations on white feed oats should show a slump during the week. Stock offered at \$1 per ton less than on the previous week failed to attract bidders, and lower offers are looked for shortly.

White feed, per ctl.....\$2.70@2.80

BEANS.

The cleaning up of good stock in several varieties was responsible for the peculiar situation of a decline on beans this past week, with hays and pinks the varieties declining from this cause. Garbanzos and Mexican reds suddenly came into shipping favor, and both of these varieties were advanced under a good outside call. Spot quotations for the rest of the bean list were generally unchanged. Reports from growers in various sections indicate generally satisfactory progress on the new crop, and there was no sign of any let-up on the part of brokers in an effort to sign up the new crop acreage. Slightly firmer prices on futures were noted, with a flat figure of 10% on limas and 10%@10% on both large and small whites. Blackeyes were being contracted for at 9%@9% per pound.

Bayos, per ctl.....\$1.50@1.85
Blackeyes.....9.75@10.00
Cranberry beans.....11.00@12.00
Horse beans.....6.50@7.00
Small Whites (south).....16.00@16.25
Large Whites.....16.00@16.25
Pinks.....11.00@12.15
Limas (south, re-cleaned).....16.00@16.25
Red Kidney.....13.00@13.50
Mexican Reds.....11.50@12.00
Tepary beans.....None offered
Garbanzos.....\$6.75@7.00

CORN.

Eastern corn was put on sale in quotable amounts here this past week, with yellow commanding \$3.30@3.35 and white \$3.40 per cental. This had no effect on the quotations for sacked California goods, but did cut into the quotations on Egyptian maize. A few lots of off-grade Milo maize were offered, but failed to find a buyer.

(First-hand prices on strictly first-class grain, San Francisco.)

Eastern Yellow, ctl., bulk.....\$3.30@3.40
California, sacked.....\$3.45@3.50
Milo Maize.....None offered
Egyptian.....\$4.15@4.25

HAY.

Receipts of hay last week showed quite a falling off when compared with the preceding weeks, being 1039 tons as compared with 1135 tons for the preceding week and 1582 tons for the week before that. Shipments were confined largely to old crop hay from interior warehouses, although some first cutting alfalfa hay was received here. Consumers bought more freely of the former type, evidently preferring to use up the old crop on hand before starting on this year's hay. The approach of the new hay season was reflected in weaker prices, and a further decline is looked for this coming week. The new cutting alfalfa is going into local warehouses in small quantities. General business has been quiet, as is natural in the between-crops season. However, the current receipts are running well up to standard, so there is nothing to fear for the future market tone. Export business has been up to normal, and will be supplied with old crop hay for several weeks to come. Weather conditions continue to favor the growing crops, and every day it becomes more apparent that there will be a larger output than had been at first expected. There is a growing demand among the dairymen for alfalfa hay, and a number of them have already contracted for their season's supply. This is reflected in a narrower range on first cutting alfalfa hay in this week's list.

Wheat, No. 1.....\$28.00@31.00
No. 2.....27.00@28.00
Tame oats.....25.00@31.00
Wild oats.....Nominal
Barley.....\$25.00@27.00
Alfalfa, new, first cut.....12.50@15.00
Stock hay, new.....10.00@12.00
Straw, per bale.....1.00@1.10

FEEDSTUFFS.

But one change of note occurred in the feedstuffs list this past week, although prices throughout were generally easier. The plentiful supply of green feed in interior sections naturally cut into the demand here for this line, and the call was markedly slower. Coconut meal registered a decline during the week, with

more changes of the same type looked for on other items in the list.

(Per ton, San Francisco.)

Beet Pulp, per ton.....None offered
Alfalfa meal, per ton.....\$33.00@34.00
Bran, per ton.....48.00@49.00
Oil Cake.....None offered
Coconut cake or meal.....\$35.00@37.00
Cracked corn.....72.00@73.00
Middlings.....68.00@69.00
Rolled barley.....57.00@58.00
Tankage.....None offered
Rolled oats.....57.00@58.00
Rice middlings.....None offered
Rice bran.....35.00@36.00
Shorts.....\$52.00@53.00

POTATOES, ONIONS, ETC.

Old crop potatoes are practically cleaned out of the local market, only Oregon Burbanks remaining on hand in quotable amounts, and trading interest has naturally turned to new potatoes. The latter were easier at 3 1/2@4 1/2c per pound under very much increased receipts, with Oregon stock commanding as high as \$4.75 per cental on the wharf. There is always a certain percentage of the San Francisco trade which will not buy new potatoes until forced to, and it is this class which sent the price of Oregon up. Onions also eased under heavier arrivals. In the general vegetable list there was an easier tone noticeable, partly the result of heavy offerings and partly the result of a slower call. As the fruit season reaches its height there is always a slower sale for vegetables. Asparagus, string and wax beans and summer squash all sold at easier prices. San Jose rhubarb was on poorer grade and failed to bring over \$1.25 per lug box.

Asparagus, per box.....\$1.50@3.10
Peas, per sack.....1.75@2.25
String beans, per lb......50@7c
Wax beans, per lb......50@6c
Hubbard squash, per lb.....2 1/2@3 1/2c
Summer squash, per crate......75@90c
Cucumbers, per box.....\$1.20@1.40
Lettuce, crate......50@75c
Celery, Delta, crate.....\$1.00@1.50
Tomatoes, crate.....Not enough to quote
Rhubarb, bay, per box.....75c@1.15
do, San Jose.....\$1.15@1.25
Potatoes, ctl., Delta.....Cleaned up
Salinas.....Cleaned up
Oregon.....\$4.50@4.75
New, per lb......3 1/2@4 1/2c
Sweets, per lb.....None offered
Onions, green, per box......50@55c
Delta reds, new, per sack.....\$1.90@2.25
Bermuda (seed), per ctl.....1.85@2.00
Garlic, lb......1@3c

POULTRY.

Generally speaking, poultry quotations last week were steady to firmer, with only two types showing price changes of a quotable nature. The market has been insufficiently supplied in several lines, and advances on broilers and hens were noted during the week. Shipments from poultry producing sections have not been so heavy the last two weeks, probably the result of the lower feedstuffs prices.

Turkeys, live, lb......20@22c
do, dressed, large, lb.....Nominal
Broilers, 1 1/2 to 2 lbs.....33@35c

Special Citrus Market Report

Los Angeles, May 29, 1917.

Shipments of citrus fruits from Southern California from November 1 to May 27: Oranges, 25,885 cars, and lemons, 4557 cars. Same time last year: Oranges, 21,296 cars, and lemons, 3,709 cars.

Shipments of oranges from Central California from November 1 to May 27, 4,075 cars, and lemons, 164 cars. Same time last year: Oranges, 5,178 cars, and lemons, 146 cars.

Shipments of oranges from Northern California from November 1 to May 27, 845 cars, and lemons none. Same time last year: Oranges, 610 cars, and lemons, 1 car. There was fair life and a stronger tone to the eastern markets the past week. Shipments were very good, heavier than a year ago, but the demand was sufficiently strong to influence an advance on all oranges. Oranges sold better than for some weeks and brought more money. Lemons also showed more life, but the cold weather prevented them from selling much higher.

Locally there is no change from a week ago, while the tone of the market was better, in sympathy with the improvement

do, under 1 lb.....25@26c
do, 1 1/4 lbs.....26@27c
Fryers.....33@35c
Hens, extra, per lb., colored.....21@25c
Small leghorn.....18@19c
Smooth Young Roosters, per lb. (3 lbs. and over).....33@35c
Old Roosters, per lb.....12@14c
Geese, per lb.....19@20c
Squabs, per lb.....35@40c
Ducks.....18@20c
Old.....17@18c
Belgian Hares (live).....14@15c

BUTTER.

Butter quotations continue to advance. A renewed Eastern demand was responsible for the local gains. Los Angeles and the Pacific Northwest also bought freely, and helped to send prices in this market up. Eastern shipments for the week were seven cars from San Francisco and three more direct from interior points of production. Los Angeles bought more than 100,000 pounds here and Seattle and Alaska business accounted for as much more. The present market depends largely on the behavior at outside points now, as it could never be maintained at this level with only San Francisco business to be considered.

Thurs. Fri. Sat. Mon. Tu. Wed.
Extras.....35 1/2 36 37 37 38
Prime firsts.....35 35 1/2 35 1/2 36 37

*Memorial Day.

EGGS.

A brisk shipping trade and lighter receipts, the result of unfavorable weather conditions in producing sections, contributed to higher prices on eggs during the past week. Storage holdings increased to 108,000 cases during the week, as compared with about 94,500 cases for the same time last year. With Eastern markets advancing as they have been for the last week and Alaska orders holding up to present volume for another month, there is every reason to look for higher prices here.

Thurs. Fri. Sat. Mon. Tu. Wed.
Extras.....32 1/2 33 1/2 34 1/2 34 1/2
Extra 1sts.....31 31 31 31 31
Extra pullets.....29 29 29 29 29
Ex. 1sts pul.....28 28 28 28 28

*Memorial Day.

CHEESE.

Flats and Young Americas types of cheese were unchanged during the past week, but there was a slump on Jack cheese. Heavy receipts that did not always grade up to standard were responsible for this decline.

Y. A.'s.....25c
Fancy Calif. Flats, per lb.....22c
Monterey cheese.....22@24c

DECIDUOUS FRUITS.

Increased offerings and a wider range to choose from brought lower prices on all deciduous fruit lines except apples during the past week. New offerings were watermelons and new crop apples, but neither were received in large enough quantities to warrant quoting.

Apples:
Bellflower, box.....Not enough to quote
Newtown, fancy.....\$1.50@1.75

east, the cold weather caused buyers to hold back and the market was dull throughout for everything. What buying done by packers, was at old figures. Oranges 1@1 1/2c per pound in the grove, picked. Grapefruit in good supply and slow sale at 1 1/2@2c per pound in the grove, picked. Lemons still 3/4@1c per pound in the grove picked for good stock.

AUCTION SALES.

New York, May 28, 1917.—Forty-seven cars of oranges, four cars lemons sold. Market strong and higher on oranges, steady on lemons. Corresponding day last year, thirty-six cars of oranges were sold. Market was from 10@25c higher. California navel oranges averaged \$2.20@3.50. Lemons averaged \$2.85@3.35.

Boston, May 28.—Twenty-six cars sold. Market is doing better both on oranges and lemons. California navel oranges averaged \$2.10@3.50. Lemons averaged \$2.65@3.75.

Philadelphia, May 28.—Nineteen cars sold. Market stronger and higher on oranges. Lower on lemons. California navel oranges averaged \$2.15@3.10. Lemons averaged \$2.90.

THE WALNUT FREIGHT RATE SITUATION IN A NUTSHELL.

In arguing for a reduction in the freight rate on walnuts last week before the Interstate Commerce Commission in Los Angeles, Secretary C. Thorp of the California Walnut Association claimed it was excessive. It is necessary for the California grower to fight all the time for a market in the East, where he comes in competition with foreign growers. It was said that California produced 40 per cent of the walnut crop of the world. The only available figures show that the foreign crop last year was 36,000,000 pounds and that California produced 27,000,000 pounds. It was shown that the importation of walnuts had increased since the beginning of the war. It has been estimated that in California the average yield of walnuts per acre is about 625 pounds. Mr. Thorp declared that California growers are paying a higher freight than foreign importers, and that the rate of \$1.40 per 100 pounds is discriminatory. The freight on foreign walnuts from New York to Kansas City is said to be 63c per 100 pounds, while from Los Angeles to Kansas City it is \$1.40 per 100 pounds.

do, ordinary.....1.25@1.40
Cherries, bulk, per lb.....5@10c
Black Tartar, per drawer.....75@90c
Purple Guigne, per drawer.....75@90c
Royal Anne, per drawer.....1.15
Apricots, per crate.....\$1.75@2.00
Peaches, per crate.....2.00@2.25
Figs, per box.....1.50@2.00

CITRUS FRUITS.

There were no changes in the citrus fruit list during the past week.

Oranges:
Navels, fancy, per box.....\$2.65@2.90
do, Choice.....2.25@2.50
Tangerines.....1.75@2.00
Lemons:
Fancy, per box.....3.25@3.50
Choice.....2.75@3.00
Standard.....1.75@2.00
Lemonettes.....1.50@2.25
Grapefruit, fancy.....2.75@3.00

DRIED FRUITS.

(Net to growers, bulk basis, f. o. b. shipping point.)

Quotations on dried fruits held just about steady during the past week, with stagnation ruling the local trading end. Apples, new crop.....5 1/2@6 c
Apricots, per lb.....16 1/2@16 3/4c
Figs, black, 1916.....Not enough to quote
do, 1917.....5 1/2@6 1/2c
do, white, 1917.....6@6 1/2c
Calimyrna, 1917.....9@10 c
Prunes, 4-size basis, 1917.....5 1/2@7 c
Prunes, 1916.....5 1/2@6 c
Pears.....6@7 1/2c
Peaches, 1917.....7 1/2@8 1/4c

BERRIES.

Berry prices were well maintained during the past week by the growers' association, and no difficulty was found in maintaining the minimum price of \$5 per chest.

Strawberries (per chest):
Southern.....\$5.00@5.50
Fresno.....5.00@6.00
Longworths.....6.00@8.00
Blackberries, crate.....1.25@1.50
Raspberries, per crate.....1.25@1.50
Loganberries, crate.....1.00@1.25
Gooseberries, lb......5@6c

LOS ANGELES.

Los Angeles, May 29, 1917.

BUTTER.

Receipts of week ending May 29.....351,660
Receipts of same week last year.....304,810

There was a better movement the past week and a stronger market. The higher prices drawing increased receipts, which were better than the same week last year. The advancing markets east encouraging buying and caused buyers to bid prices up. Extra advanced up to Monday 2c, though the close on that day was weak. There was in cold storage here, May 24, 1917, 130,874 pounds, 35,368 pounds more than the week before and 54,219 pounds more than the same date last year. This accumulation represents the better receipts rather than speculative holdings. The consumptive demand showing no improvement and there being no shipping inquiry, the excess went into storage.

We quote:
California extra creamery.....38c
Prime first.....37c
First.....36c

Daily quotations:
1917—Wed. Th. Fri. Sat. Mon. Tu.
Extra.....36 36 36 36 36 36
1916—.....25 26 26 27 27 27

EGGS.

Receipts (railroads) for week ending May 29, 1917, 2,326 cases.
Receipts (railroads) for week ending May 29, 1916, 2,965 cases.

The past week brought little change in this market. The receipts continue to run lighter than a year ago. But the demand being only fair and largely confined to the consuming trade, which was not heavy, the high prices checking consumption, it was pretty much a one price market. There was no buying for cold storage, what accumulation in store representing carryovers by receivers. There were in cold storage here May 24, 1917, 72,470 cases, 3,605 cases more than the week before and 17,592 cases more than the same date last year. The receipts of fresh ranch for the week ending Tuesday were 2,326 cases and 400 cases of Petalumas. The same time last year the receipts of fresh ranch eggs were 2,965 cases.

Daily quotations:
1917—Wed. Th. Fri. Sat. Mon. Tu.
Extra.....33 1/2 33 1/2 33 1/2 33 1/2
Case count.....33 33 33 33 33 33
Pullets.....30 30 30 30 30 30
1916—.....23 1/2 24 24 26 26 26

POULTRY.

The market the past week brightened up. There was a better demand than for some weeks and broilers, fryers and heavy hens were all advanced 1c. Receipts not so heavy and the consumption seems to be improving. Light hens continue dull and unchanged. Roasters selling fairly and so are ducks. Not many coming in.

We quote from growers:
Broilers, 1 1/2 to 2 lbs.....22@23c
Fryers, 2 1/2 to 3 lbs.....23c
Hens over 4 lbs.....19@20c
Ducks under 4 lbs.....14@15c
Ducks.....15@16c
Geese.....15c
Roosters, 3 lbs. up (soft bones).....25c
Turkeys, heavy, 12 lbs. and up.....29@30c
Turkeys, light.....24@25c
Squabs, live, per doz.....\$1.50@3.00
Dressed.....8.75@9.25

VEGETABLES.

The market the past week was better supplied and the tendency of prices was downward. New potatoes are coming in quite freely and are sharply lower. Cabbage is off again and dull. Receipts liberal and shippers buying sparingly. String beans are lower and so are peas and both slow sale. Onions dull, but unchanged. Cucumbers quiet and weak. Summer

THE BUTTER MARKET STRUCK BOTTOM AT 33 CENTS.

Readers of the Pacific Rural Press interested in the butter market may have noticed the 33 cents quotation in our May 5th issue. It is probable that butter prices, for this season at least, reached bed-rock in that quotation. Due to dry weather and high-priced feed, butter production is now below normal in quantity, and likely to continue so for many months to come. Another fact which seems to argue that butter touched bottom at 33 cents, is that large quantities of this commodity began to go into storage when this price was reached. Every dairy market in America registered advance prices during the past week, and again the possible starting of San Francisco storage activity has been deferred by the skyrocketing rates.

squash sharply lower and dull. Coming in more freely. Some new tomatoes in from the Imperial Valley and they met with a fair demand. Asparagus steady but slow sale.

Asparagus, lb., local and northern...7½@8c
New potatoes, per lb.3@3½c
Peas, per lb.3@3½c
20-lb. box50@60c
New onions, silver skins and Bermuda, per crate\$1.50@1.60
String beans, wax, per lb.4½@5½c
do, Kentucky Wonders, per lb.4½@5½c
Summer squash, per crate of four baskets40@50c
Imperial tomatoes, 4 bskt. crate...\$1.60@1.70
Imperial cantaloupes, flats.....\$2.50
Fancy crates\$10.00
Cucumbers, per box of 2½ to 3 dozen85c@1.25

BEANS.

It was very quiet in this market the past week. Stocks being light, prices were held steady.

We quote from growers:

Limas18c
Large white17c
Small white16½c
Pinks13c
Blackeyes10½@11c

HAY.

The market brightened up the past week and showed more life than for some time. The receipts were the best for weeks and the offerings of very good quality. The first time for weeks both the city and country were in the market and showed more willingness to take hold. While prices show no change, the market may be called firm for all choice hay. Receipts for the week, 119 cars.

We quote f. o. b. Los Angeles, old crop:

Barley hay, ton\$21.00@23.00
Oat hay, ton22.00@24.00
Alfalfa, northern, per ton18.00@19.00
Alfalfa, local, ton20.00@21.00
Straw, ton11.00@12.00

FRUITS.

There was little change in this market the past week. The only new thing on the market being figs from the Imperial Valley. They coming in now every day and meeting with a fair demand. Apricots were in little better supply and market weaker, but demand fair. Loquats are off a little but selling fairly at the prices. Cherries were slow sale and weaker. The cold weather affected the market for all fruits.

We quote from growers:

Avocados, per doz.....\$4.00@5.00
Loquats, per lb.5@8c
Cherries, black Tartarians, per lb.10@13c
do, Chapmans9@10c
do, Soft White, per lb.5@7c
Gooseberries, per lb.7@8c
Apricots, per 4-basket crate, as to pack\$1.20@1.50
Figs, Imperial Valley, 7-lb. box.....\$1.75

BERRIES.

All berries are now coming in quite freely. The cold and backward weather was against the free ripening of strawberries and the market supply was not so heavy and market a little stronger. Demand very fair. Raspberries, loganberries, and blackberries were all in better supply and the market worked lower. Demand fair at the prices.

We quote from growers:

Strawberries, poor to choice, 30-basket crate\$1.00@1.20
do, fancy, 30-basket crate.....1.30@1.40
Blackberries, per 30-basket crate. 2.00@2.25
Raspberries, per 30-basket crate.. 2.10@2.30
Loganberries, per case1.75@2.00

HONEY.

There is some little orange honey being extracted and marketed, but no sage or alfalfa as yet. It is said that the orange honey crop in Southern California will be only half a crop. White sage promises a little more than half a crop and the amber crop will be still better. But the whole crop will be much shorter than last year. White orange honey at 12½c per pound is about twice as high as last year at this time. Dealers naturally at the high price are buying cautiously, as the demand from the east is very light at the prices now being asked.

WEEKLY BUTTER AVERAGES.

Week Ending	Cents per pound for Extras.		Cents per pound for Extras.	
	San Francisco	Los Angeles	San Francisco	Los Angeles
Jan. 9.....	26.65	34.91	28.16	36.90
" 16.....	27.83	35.83	28.10	37.00
" 23.....	28.85	36.91	28.50	35.00
" 30.....	36.33	38.48	36.66	38.87
Feb. 6.....	30.25	39.70	32.33	41.19
" 13.....	31.40	39.70	32.25	39.00
" 20.....	32.00	36.00	32.25	37.00
" 27.....	30.00	37.00	32.25	36.00
March 6.....	24.08	35.50	24.16	34.50
" 13.....	29.91	33.50	28.83	33.00
" 20.....	28.33	33.25	27.16	33.00
" 27.....	28.50	36.00	28.08	33.00
April 3.....	28.50	37.91	28.83	36.33
" 10.....	29.31	39.33	28.00	37.00
" 17.....	27.33	39.58	27.50	38.00
" 24.....	25.25	35.66	25.00	36.50
May 1.....	24.33	33.08	25.33	33.00
" 8.....	24.10	34.05	25.00	33.20
" 15.....	24.58	35.50	25.66	34.16
" 22.....	25.00	36.30	25.00	35.16
" 29.....	26.50	36.60	26.50	37.33

WEEKLY EGG AVERAGES.

Week Ending	Cents per dozen for Extras.		Cents per dozen for Extras.	
	San Francisco	Los Angeles	San Francisco	Los Angeles
Jan. 9.....	31.41	37.91	32.00	38.16
" 16.....	30.33	41.83	30.75	40.83
" 23.....	34.83	32.50	34.33	33.12
" 30.....	36.33	32.08	36.66	33.01
Feb. 6.....	35.66	34.99	35.50	34.70
" 13.....	28.90	33.30	28.00	31.66
" 20.....	23.66	33.01	20.33	30.75
" 27.....	20.30	29.00	18.50	27.66
March 6.....	18.33	24.75	18.00	24.91
" 13.....	19.50	25.96	18.91	26.08
" 20.....	20.00	25.66	19.08	25.91
" 27.....	21.41	27.16	20.83	28.00
April 3.....	21.75	28.58	21.00	29.25
" 10.....	22.00	29.66	21.00	30.41
" 17.....	21.16	32.33	20.91	32.08
" 24.....	21.83	32.91	22.58	32.83
May 1.....	21.00	32.00	22.58	31.83
" 8.....	21.20	32.75	21.41	32.00
" 15.....	24.58	34.20	20.83	32.50
" 22.....	25.46	33.40	22.50	34.00
" 29.....	25.00	33.80	22.50	33.50

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AT LAST THE PERFECT SILO—THE Star Round; No hoops. No bolts. No experiments. Any one can erect. Close price. Address D. O. Lively, 215 Hobart Bldg., San Francisco.

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TO REDUCE THE HIGH COST OF LIVING, send for our Wholesaler to Consumer Catalog. Smith's Cash Store, 106 Clay St., San Francisco.

SOUTHERN CALIFORNIA farm and fruit growing topics; fine for homeseekers; monthly one year, 25c (coin). "California Homestead," San Diego, Calif.

PEDIGREED RABBITS—Belgian-American Reds, Flemish Giants, White Angoras and Dutch Belts. Write for prices. The Oaks Rabbitry, Cleveland avenue, Santa Rosa, Cal.

WANTED TO BUY—CANARIES—1 Coolidge Place, off Jackson, San Francisco.

WANTED.

WANTED—Young men and women to attend the Western Normal Courses—Normal and Academic. The Normal Course gives an adequate preparation for teaching, at a great saving in time and money. Academic course gives practical finish to education. Write for Bulletin "A," Western Normal, 524 E. Market St., Stockton, Cal.

FARM HAND WANTED to care for live-stock and help on a diversified farm in orchard, alfalfa and grains; must be good teamster and particularly safe stock. Address W. E. Cole, Route 2, St. Helena.

WANTED—To take charge of dairy; will get results; three efficient and improved methods; experience and university training. Box 590, Pacific Rural Press.

COUNTRY LANDS.

STATE, GOVERNMENT AND INDIAN Lands.—Bargains overlooked. Free New Blue Booklet. Joseph Clark, Sacramento.

FOR SALE—640 acres or half section good wheat land, 26 miles east of Calgary, in irrigation block; raised 45 bushels wheat per acre last year; about 250 acres in crop; 350 acres will summer fallow; 25 acres in alfalfa; modern and complete improvements; \$5,000 cash, balance arranged; price per acre, \$60. Box 17, Cheadale, Alberta, Canada.

FOR SALE—One of the best improved 20-acre ranches on the Los Molinos project; buildings all new; price, \$10,000; cash \$4,000, balance on time and terms to suit purchaser. Geo. Boock, Los Molinos, Cal.

DEEP LOAMY RIVER BOTTOM—25 acres alfalfa, 30 wooded pasture; irrigated; big barn; thirty good cows; Vina Ranch bulls used five years. Manuel Vetter, Los Molinos.

175 ACRES, near Princeton, Colusa county. Two years in rice. This season Egyptian corn. Price right. James M. Berry, 118 West Walnut St., Lodi, Cal.

STEVENS COUNTY—Logged-off land where stock-raising and dairying pay. Free booklet. Phoenix Lumber Co., Crop Department, Spokane, Washington.

270 ACRES good grain land; no improvements; five miles to Ryer warehouse; \$45 per acre; terms. Address Owner, Box 403, Merced, Cal.

WANTED to hear from owner of good ranch for sale. State cash price and description. D. F. Bush, Minneapolis, Minn.

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The Greatest Stock.
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Whatever you want we have.

New and second-hand building material of every description. Wire fencing, chicken to cattle. Get our price on Hog and Barb Wire, Lumber, Shingles, Corrugated Iron, Doors, Windows, Plumbing in all its branches.
3 carloads nails, 3 carloads bath tubs bought before advance, 3,000 toilet seats, \$1.35. We are protected against unreasonable prices. Share our profits. See us for estimates.

Special for ONE week:
New 5-ft. bath tub, guaranteed perfect, complete, all fittings, \$23.50.
Flag poles, long, \$3.50.

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1501-1527 Market street, San Francisco.

Special Livestock Market Report

San Francisco, May 30, 1917.

CATTLE—Prices rule firm in the cattle market as a result of the invasion of the local market by Northern buyers and shipment of beef cattle East. Quotations are stationary, however, though it is unlikely that they will reach a lower level. Elsewhere than in California there is, generally speaking, a sharp advance. The glut of veal calves is easing up and prices have advanced about ½c.

Grass steers, No. 1, weighing 900 to 1200 lbs.8½@9c
do, weighing 1200 to 1400 lbs.8½@9c
do, second quality8½@8½c
do, thin, undesirable7@8c
Grass cows and heifers, No. 17@7½c
do, second quality6½@6¾c
do, common to thin4@6c
do, undesirable4@6c
Hay-fed cattle½c to ¾c higher
Bulls and stags, good6@6½c
do, fair5½@5¾c
do, thin4½@5c
Calves, light weight9½@9¾c
do, Medium8½@8¾c
Heavy7@8c

SHEEP—Owing to the prospect of a short grass season and the difficulty of carrying stock over, the arrivals of sheep in the local market are plentiful. However, there is little perceptible weakness in the price market and quotations remain unchanged.

Yearling lambs12@12½c
Milk lambs12@12½c
Sheep, unshorn wethers11c
do, ewes10c

HOGS—Hogs are being offered less freely this week than last, the receipts not equaling the requirements. Buyers, however, seem unwilling to pay more for offerings and the quotations of last week stand.

Hard, grain fed, 100 to 15012¼@12½c
do, 150 to 30015½@15¾c
do, 300 to 40014½@15c

DRESSED MEATS:

Steers, No. 114c
do, second quality13½c
Cows and heifers12@13c
Calves, as to size, etc.12@14c
Lambs, suckling19@20c
do, yearling19c
Sheep, wethers18c
do, ewes17c
Hogs19c

WOOL—The wool market continues firm all over the United States, though buying is not active except in the Northern States, Oregon, Idaho and Montana still reporting a fair volume of business. Wool men generally are optimistic and are holding for a further advance.

Sacramento Valley, spring clip40@45c
Mendocino55@56c
Cloverdale40@42c
San Joaquin, 8 mos.26c
San Joaquin, year's35@40c
Southern, spring clip28@30c
Southern, 7 mos.22@23c
Imperial Valley, 7 mos.30@35c
Nevada, year's35@40c

THE POTATO SITUATION LOOKS GOOD IN CALIFORNIA.

The condition of the potato market in all distributing centers in California continues good. While the stock is a little easier owing to increased supplies, prices tend to hold the high levels which have prevailed for some months past. The early potatoes in the San Pedro hill region near Los Angeles are now about harvested. This crop is turning out better than was expected. The same is true of the yield in the Colma district of San Mateo county, which is another of the early potato sections. Alameda county potatoes are larger this year than last and the yield correspondingly more abundant. The potatoes in all sections of the State have been late this season, especially in the Santa Clara Valley, owing to unfavorable weather conditions. It is estimated that the Delta acreage is this year about 28,000 acres. Notwithstanding these unexpectedly favorable reports of the potato yield, the market is strong and prices recede but little. Inquiry for supplies is active both for consumption and for seed for late planting.

Los Angeles, May 29, 1917.

CATTLE—The market situation here is much the same as a week ago. Killers while all in the market the past week were not urgent buyers, though paid steady prices for what cattle taken. Feeders are rather independent where they are well provided with feed, being influenced to hold their cattle by the high markets east. Where feed is short feeders are willing sellers at quotations.

Calves continue dull and weak.

Per cwt. f. o. b. Los Angeles:
Beef steers, 1000 to 1100 lbs.\$9.00@9.50
Prime cows and heifers7.00@7.50
Good cows and heifers6.50@7.00
Calves, per cwt8.00@9.00

HOGS—Receipts continue light and made up mostly of half-grown and partly fatted. Heavy well finished hogs scarce and killers bid up prices of all such hogs \$1.00 per cwt. the past week, and failed to get any great number even at this advance. The eastern markets continue so high as to draw hogs now from Arizona and even some shipments have been made from the Imperial Valley east, thus cutting down the supply heretofore available for this market. California alone furnished what hogs coming in the past week.

Per cwt. f. o. b. Los Angeles:
Heavy, averaging 250@300 lbs.\$12.00@12.50
Mixed, 200@250 lbs.13.00@14.00
Light, 175@200 lbs.13.00@14.00

Rough docked 20 pounds, piggy sows 40 pounds and stags 40 per cent.

SHEEP—A steady and rather firm market was had the past week for both sheep and lambs. Killers seemed a little more anxious for supplies, but while bidding a little more freely refused to advance prices.

Per cwt. f. o. b. Los Angeles:
Prime wethers\$ 9.00@10.00
Prime ewes9.50@10.00
Yearlings10.50@11.00
Lambs13.00@14.00

North Portland, Ore., May 28, 1917.

CATTLE—Today's receipts totaled about 700 head, which were mostly all grassers of ordinary to fair quality. There were only a couple of loads of real good beef here. Demand was mostly from Valley butchers, of which there was a long string. Prices for the day were on a good strong basis compared with last week's close. Live killers are all well supplied at present on account of the heavy receipts last week. Best beef steers brought \$9.50 to \$10.00.

HOGS—Hog market was generally steady with a fairly good supply. A few lots of light hogs brought \$15.80 to \$15.75, with four loads of strictly fat 225 pound hogs brought \$15.85 to \$15.90. Pigs were unchanged, bringing \$13.00 to \$14.00.

SHEEP—The sheep market is unchanged. There was only one bunch of valley sheep here today; good spring lambs brought \$13.50 with shorn ewes at \$10.50.

Which?



Hay 32.00 a ton
Grain 45.00 a ton
\$ 6. to 8. PER Day



INCREASED YIELDS
NOT ONE CENT!

During the Summer

the Samson Sieve-Grip Model S-25 can save you from \$6 to \$8 every day it does not work!

The number of horses replaced by this tractor would cost that much to feed every day, whether working or not.

Start making this saving RIGHT NOW by using a

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For stationary work the motor delivers its power straight to the belt-pulley—not a gear in motion.

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Two Sizes—Models S-25 and R-12

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IN 1915 we introduced the Mogul kerosene tractor in a two-plow size. It met with instant and continued approval, so much so that it has far outsold all other tractors of its rated horse power put together.

We now offer Mogul 10-20, the same popular and efficient type as Mogul 8-16, enlarged, improved, built to draw three plows instead of two. No changes have been made in design except the few indicated by experience, or made necessary by the higher power.

The engine is larger, but it is the same efficient, slow moving, kerosene-burning type. The transmission is changed to give two forward speeds instead of one. Mogul 10-20 travels 1.8 and 2.5 miles per hour. The same simple, safe chain drive is used, the same good force feed mechanical oiler. In all essentials Mogul 10-20 is the reliable, dependable, economical Mogul tractor you have heard so much about from your neighbors, or know so well by experience.

Booklets and folders with full descriptions of the new Mogul 10-20 are now ready and will be sent by return mail on request. When you write for them, address

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July 1, 2, 16, 17, 24, 25, 31.
August 1, 14, 15, 28, 29.
September 4, 5.

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Chicago	80.00
Minneapolis, St. Paul	84.45
Washington, D. C., Baltimore.....	116.00
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THE PACIFIC RURAL PRESS

SAN FRANCISCO

JUNE 9, 1917.

LOS ANGELES

Necessity of Bees on Cherries, Plums and Prunes

[Written for Pacific Rural Press.]



MOST remarkable demonstration of the necessity of bees to pollinize cherries, plums and prunes was made this spring in the orchard of R. W. Skinner of Sutter county. Branches from which insects were excluded by coarse mosquito-netting set practically no fruit, while the rest of each tree and those around them are loaded heavier than ever before. It is the first year that bees have been kept in the orchard.

On March 15, before the buds had swelled, Mr. Skinner, with W. F. Bird and W. M. Strange, chose cherry, plum and prune trees in various parts of the 80-acre orchard and sewed the netting around branches on which the fruit buds had been counted. These blossomed full, along with their neighboring branches and trees. On May 18 these branches were cut off in the presence of Sutter County Horticultural Commissioner H. P. Stabler, along with branches adjoining them, and taken to the latter's office, where we saw them. The branches not covered were all heavily loaded, similarly to the rest of the orchard, which we saw later. Some trees had fully 400 pounds of cherries on them.

A Bing cherry limb 8 feet long was covered with mosquito netting for 7 feet, leaving the lower foot uncovered. It was loaded with fruit up to the net, while there were only three cherries on the 7 feet, on which over 150 fruit buds had been counted. A Royal Anne branch 5 feet long had 70 buds when covered with netting, March 15, but not a cherry was set.

A French prune branch 2 feet long from a four-year tree, having been netted, set just one prune, while an adjoining branch had set 16 prunes on one foot of two-year wood and one prune on the one-year wood. The whole tree had a tremendous load. A Tragedy limb 2 feet long, and much branched, had 80 buds under the net, but set only two plums. The rest of the tree was loaded, one limb having 23 plums in a foot near the tip and another having 26 plums in ten inches.

A Robe de Sargent had 130 buds under the net and set two prunes, while the limb next to it hung with prunes as thick as they could stick and averaging $\frac{3}{4}$ inch long. A Black Oregon branch had 45 buds in 3 feet when covered, March 15. It set two cherries, although this variety is recognized as a splendid pollinizer. The rest of the Black Oregons were full of cherries.

BEES CREDITED FOR HEAVY CROP.

An upright growing strain of Royal Annes nine years old had not borne until this year, when practically all limbs fruited except a branch 4 feet long enclosed in a net, where there was not a cherry, though it had 90 buds.

Though crops are this year generally good in that vicinity, bees are given credit for most of the heavy setting. Most everybody or his neighbor got some bees last spring, so that the country was well supplied with them. Yet we could see a noticeably lighter crop in a neighboring orchard, for, as Mr. Skinner says, bees prefer to work as near home as possible. Four-year French prunes had never fruited heavily before, nor had the upright Royal Annes.



The illustration above shows a fruit branch from which the pollenizing bees had been excluded by coarse mosquito netting.

BEES ON 80-ACRE ORCHARD.

One hundred and thirteen stands of bees were placed in two lines lengthwise of the orchard, about 24 rows from each edge. The lines run east and west because prevailing winds are from north or south. Bees fly against the wind, so they may return with it when loaded. The stands were placed where the earliest morning sun would strike them.

Mr. Skinner suggests a rough estimate of the work cut out for his bees. There are 2800 per pound and three to five pounds per stand. Generally 10,000 bees are figured per stand. Thus 1,130,000 bees had the orchard for pasture. If one Tragedy plum sets out of ten blossoms, a crop of 3000 plums per tree indicates 30,000 blossoms. Cherries might have ten or twenty times that many. Imperials have perhaps 125,000 blossoms per tree. And so on. Assuming 30,000 blossoms per tree for the 80 acres of perhaps 6400 trees, the million bees would have 192,000,000 blossoms to visit if they didn't go out of the orchard.

Summer Fruit Budding

[Written for Pacific Rural Press.]

Budding one variety of fruit onto another has been done all the way from March 31 to October by

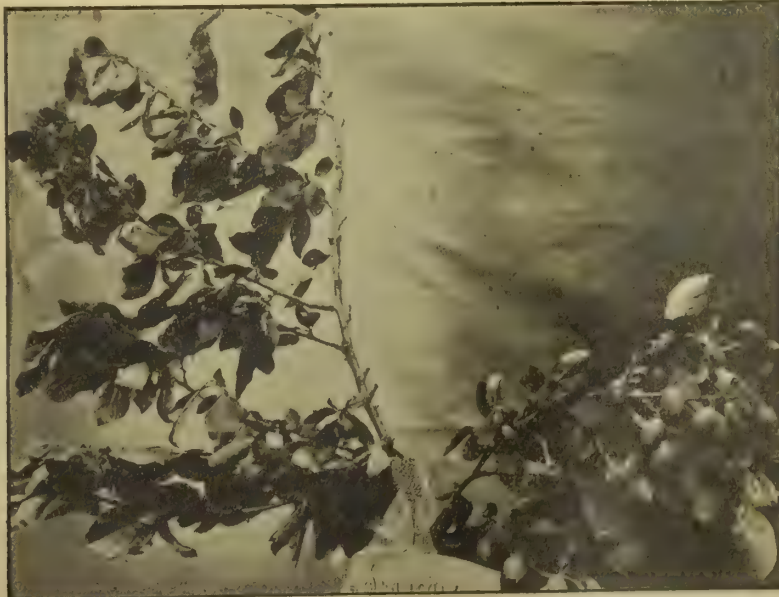
R. Burton of Vaca Valley, who has long been known as one of the leading plant breeders in California. He buds his new seedlings onto older trees in order to hurry up their fruiting to see what has been developed and to test his new varieties. The best time, says he, is during August, because buds put in earlier may be overgrown by the older wood to a certain extent. Still, he showed us a Formosa bud, put in about April 8, which had grown three inches by May 8.

A branch, to be budded, should have sap flowing freely enough so the bark will peel clean from the wood easily. To get such branches close to the crown of a tree that is to be worked over by budding, cut back the limbs (preferably in winter, and leaving one limb to take the sap for a year). New sprouts will grow from the stubs if they are not killed or weakened by sunburn, which should be prevented by immediate application of white-wash.

To get plump buds, pinch off the end of a desirable shoot on which there are dormant buds in the leaf axils. If shoots have already started from a deciduous fruit bud, it is of little value for propagation. On an apricot, for instance, to get suitable buds it will be necessary to cut off the branch below the upper spray of laterals. In a day or two after pinching tips or cutting off such a spray the dormant buds will commence to swell. When this is noticeable,

and the buds are plump but not yet broken, do your budding. Dormant buds just starting on old bark are all right for propagation.

Cut the twig with several buds on it and do not allow it to dry or its bark to shrivel. Do not cut the buds from it until ready to insert them under the bark of the stock. Then make a vertical cut with a sharp knife (budding knife preferred) about $1\frac{1}{2}$ inches long at a smooth place on the bark of the stock and proceed in the usual manner.



This cut shows the result of the experiment. The blossoms of the branch on the left, which had been enclosed, set practically no fruit, while adjacent branches to which the bees had free access bore more fruit than usual, as illustrated by branch on right. This small orchard experiment, which any grower can make for his own satisfaction, supports the large demonstration made in the Santa Clara Valley by the University experts last year and reported in these columns last January.

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EDITORIALS

PROLOGUE.

WEARYING not a little of the heavy, five-act agricultural tragedies which we have recently fallen into the habit of presenting in these columns, and in the course of which we have been howling forebodings which made the ululations of Cassandra, the grouch-queen of ancient tragedy, sound like ragtime syncopations—we turn this week to a run of one-act dramas which, for the sake of continuity, which should thread all proper editorial discourse, we shall tandem along this theme: Things Which Are Coming Our Way.

HOW TO DO REAL ESTATE.

GVERNOR STEPHENS has signed the Land Settlement Act passed by the Legislature, as noted in our issue of May 5, and has thus assured the operation of the plan for righteous subdivision and settlement of farming lands in this State devised by Dr. Elwood Mead and his colleagues of the Commission on Land Settlement and Rural Credits appointed by ex-Governor Johnson. It is in fact a blue-sky law on selling farming land, with the very important difference that it does not tell sharks and shysters what they shall not do (as is the common method with blue-sky laws), but is designed to show honorable and well-meaning subdividers what they can—in fact, what they ought to do, for the success of their clients and the good of the State. As this undertaking has become a part of the statute law of California by the patriotic act of Governor Stephens, and as some of our readers, in the rush of things peaceful and war-like, may not definitely remember what it is all about, we reproduce a rough outline of its provisions, which we set forth in our issue of May 5:

The State will embark in an entirely new enterprise by which it is hoped to encourage the settlement of small, improved farms by qualified persons of moderate means. The administration of the act is to be carried out by an unsalaried board of five members and an appropriation of \$260,000 will be placed at the disposal of the board to purchase 10,000 acres of unimproved lands selected for good farming quality. The board is authorized to make necessary improvements and to subdivide the tracts and sell them to selected settlers, on loans with amortizing payments extending over a period not to exceed forty years, and with the right to repay the loan any time after five years. Unless the applicant is prepared to pay half the purchase price of his allotment, he would be required to apply to the Federal Farm Loan Bank at Berkeley for 50 per cent of the appraised value of the land and 20 per cent of the value of the improvements, and the State will lend him additional money for his outfit, as he may require. It is calculated that the \$260,000 advanced by the State will be returned within fifty years, with interest at the rate of 4 per cent.

Thus the State will advance fairness, honesty and humanity in farming land transactions and be repaid with interest for its investment in the enterprise. And this anticipated outcome, of course, will matter not so much that the next generation will get our money back into its pocket,

but that it will have the demonstration in its heart and brain that honesty is the best policy in land business as in all other. And now it will be the interesting joy of all of us to see how this theoretically noble undertaking will work out. Nothing can be expected immediately, for it will take time to embody it in transactions. An administrative board must be selected by the Governor: this board must find itself in practical operation: land must be selected and bought: subdivision and fitness for planting must be provided, etc. Some months must elapse before the State can announce that it is ready to listen to the desires of customers. And while this is developing it is fortunate to be assured that there is one thing involved in this State enterprise which will begin to operate at once and will work in daylight and in darkness from this moment onward. It is the principle of it: the nobility of its humane purposes: the soundness of its economic motive and method: the real sublimity of its simple religious faith that to be good one must do good and help his fellow men thereto.

THE APOTHEOSIS OF THE REAL ESTATE.

AND NOW, while it goes forward to demonstrate by its own enterprise how farm-land settlement can be most successfully done with honest motive and method, it is important to know that the State has also spread a blue sky over legitimate and honorable private land dealing in California. This also has been secured through the last Legislature and Governor Stephens. This is the way of it:

The new law provides that no real estate broker or salesman may do business and collect commissions for his services in California unless he holds a State license, which must be issued by an appointed commissioner. Each broker and salesman must make application to the commissioner for a license, beginning July 27. The commissioner shall investigate applicant's reputation for business integrity and, if he finds this reputation to be questionable, he may refuse the application. Should charges of dishonest dealing be filed with the commissioner against a broker or salesman holding a license and be substantiated by the commissioner's investigation, the latter may cancel the license and the dealer cannot renew it for two years.

We do not at this moment know whether the law can be made to cover misrepresentation of the quality and capacity of land and imposition thereby or whether it simply rules out bunco dealings and gross forms of swindling. It is, however, encouraging to know that whatever measure of protection for the unwary this new law provides has been long sought by reputable real estate men. It is said that they "have been working for several years to secure legislation of this character which will insure the honesty of the real estate business in this State and protect honorable dealers from the annoyance of irresponsible and dishonest dealers and protect the real estate business from the stigma attaching to the practices of this class of dealers." So far, so good—surely. Much encouragement also comes from the rumor that the execution of this new law may be entrusted to Corporation Commissioner Carnahan, because we are quite sure that he will not be content merely with licensing all people who are not personally impeached, but will look carefully into the character of representations they make and the quality of the landscape which they offer for farming. With this cleansing of the real estate business and with the setting up of a reasonable State policy as a standard for subdividing which private land-handlers must unavoidably emulate, it cannot well be doubted that the outlook for fair and profitable investment in California farming lands is greatly improved. Although it may be possible neither for law nor public policy to part a fool investor from his folly, it is possible that by years of upright dealing we may outlive our present ill-repute as a State which cuts bait for suckers, and gain a good name as a State in which good men are placed on good land with a chance of making good by good work and farming wisdom. And, of course, when California comes this summer, as the law provides, to give the world a voucher for the integrity of her real estate, their business will expand and rise to a new level. To a world steeped in distrust of land dealings ever since

Dido spun her web of thongs around all the corner lots in Carthage, there will be great relief in the assurance that buying real estate in California can no longer be a skin game! And there will be freer investment accordingly.

MEN AND MONEY.

ACCORDING to all accounts current as we write on "Registration Day," the nation is springing forward to declare its contribution of men for patriotic service. More than ten million men in the third decade of their lives are answering the call to enroll themselves for the nation's choosing. There is also a great outpouring of private money for public use in the buying of the bonds which the Government offers as security for the funds it needs. The sale of these bonds is being promoted by all agencies and those who are not called upon to help in the selling should surely help in the buying, either in large or small ways, as their means permit. It is a patriotic service: it manifests one's faith in the cause for which a great peace-loving and peaceable nation goes to war as the only way to demonstrate that faith and to insure it. Therefore, everyone having spare money should buy bonds, as he can afford, patriotically. And it is an inspiring thought, also patriotic in its way of demonstrating confidence in one's country, that investment in bonds requires no sacrifice except, possibly, of immediate indulgence in something which, on the whole, one may be better without. For the buying of our Government bonds is an investment both secure and profitable and therefore fit to be made from a financial point of view. Three and one-half per cent on property which pays no taxes and involves no risk is surely a good investment. A bond is therefore desirable for accumulated funds from which one needs regular returns: it is also desirable to "lay by for a rainy day" because it grows as it lies and is always saleable for what it costs or more. For some or all these reasons everyone who can is buying bonds, doing his share of national duty and getting a good thing. Therefore, we advise all our readers to buy bonds—a big one if you can, a little one if you must. If you don't like bonds on principle and believe in paying as you go, buy one for the baby. He may be mighty glad you did some day!

THE FARMER'S VOICE IS HEARD.

THE VOICE of the producer, concerning the conditions which must be assured to make largely increased production safe and practicable, is now being heard. As we have previously suggested, it was not asked for as it should have been, but it has lifted itself—which is, in a way, all the more creditable and more promising. Last Saturday a large and representative delegation of the organized farmers of the Dakotas, Montana, Minnesota and Wisconsin appeared before President Wilson, the members of Congress and the various executive departments in Washington and declared that they approved the administration's food program and the appointment of Herbert Hoover as food administrator. It should be understood that these five States of the Northwest are, of all the country, the most solidly organized for co-operative production and sale of products. California has greater special fruit distributing organizations of producers than any other State, but California does not take organization as broadly and fundamentally as do these States of the Northwest nor are California's organizations so strictly and independently under agricultural influence in spirit and purpose. We are stating this fact without discussion of details simply to warrant the claim that this Northwest delegation is broadly representative of the country at large, which for lack of such organization lifts not its voice. California's chief productions and conditions are different and therefore less representative of the whole country, although the principles for which the Northwest contends are also important to us, though in less degree, and perhaps less directly. In the matter of the great staples the delegation declared itself, as noted in telegraphic outline, as follows:

The delegation urged the Government to take over all terminal storage facilities, all elevators

and all warehouses and thus destroy food and cotton speculation. They made statement of the actual cost of raising wheat, showing that the farmers have not been receiving high prices for their wheat and that many times they have raised wheat at a loss. They expressed the desire that if the Government takes charge of the food situation it will guarantee producers a certain price, just as manufacturers of munitions are allowed to set prices. If they are to put in extra crops, they said, the cost of doing so would be high, labor would have to be paid almost double wages and the cost of seed and other necessities had also risen. Farming machinery, they said, has risen approximately 125 per cent in the last three years. They urged promotion of agricultural co-operation as a public policy and suggested establishment of co-operative buying organizations. They called attention to the fact that the cost of production is going up and that this should be taken into consideration in price fixing.

Doubtless the delegation made many more points for national consideration which the telegraph did not catch, but those noted are enough to dem-

onstrate that the farmers' interests attach themselves to the most fundamental needs of the country and that, whether one agrees with their views or not, it is important that those who are to really do the nation's work in food production should be urged to state authoritatively the conditions under which they must operate and the surety they need that the results of their efforts shall neither be lost nor rendered vain of intended purpose. Aside from the intrinsic value of full accord between the food producers and the chief executive of the nation in the unique situation in which the country finds itself, it is fortunate for the ease of enforcement of saving policies that such accord exists. With such strong purposes and powers approaching each other from opposite sources it is dangerous to intrude greed and self-interest between. Real national interests, and nation-saving if it comes to that, will be assured if the producers and the President remain in cordial, sympathetic conference.

and is often called "sour sap in the top." The treatment is cutting back to good wood, bearing normal leaves. The preventive is believed to be a thorough whitewashing, with a spray reaching all parts of the top of the tree, after the fall pruning is done. Trees thus treated seem to have escaped injury. There may, however, be "little leaves" from other causes. The matter is not fully understood.

Failure of Vine Scion-Buds.

To the Editor: I have grafted Thompson seedless on Feherzagos vines and I lost 50 per cent of the grafts because the buds rotted, although they attached themselves to the stock. What is the cause of that? Would you advise me to saw the stumps in December and graft them over in March? I think the sap floods the scions too much and gets sour.—A. F. P., Fowler.

It would seem that the scions were not well cared for and the buds rotted before the scions were used. This might be due to burying in soil which held too much water or were otherwise kept too wet. Scion buds are sometimes destroyed by cut worms after grafting. We can only guess at the cause, but believe the buds were injured before grafting. It is not desirable to saw off so long before grafting unless you wish to get the heavy work out of the way. In that case, make a fresh amputation about 24 hours before grafting. This is usually long enough to allow the excess of sap to flow out.

Leaf-Eating Beetles on Feijoa.

To the Editor: What is the name and relative capacity of the enclosed bugs? They seem to be holding a convention on a feijoa bush, and dining on the leaves, which were nearly all gone when I discovered them. They are strangers to me, as I've never seen them bothering anything else. I bagged the whole convention.—W. F. A., Thermal.

We have not the name of the little beast at this moment. They belong clearly to the otiorhynchidae, which is calling them as hard a name as necessary for their first offense known to us. They are relatives of Fuller's rose beetle and of similar form and aspect, but only about one-half as large. They can be jarred from a plant into a kerosene pan or they can be poisoned by spraying the foliage with neutral lead arsenate—three pounds to 50 gallons of water.

Leaf Trouble of Pecan.

To the Editor: I send leaves from a pecan tree that is beginning already to show effects of something that will later in the season dry the leaves all over the tree, and cause the tree to put out many tiny leaves in bunches. It also affects the bark of the tree to shrivel it. I tried to describe the condition to you last winter, but had no leaves to send. You thought at the time it might be dryness, but could it be so early in the season?—C. E. D., Reedley.

The leaves have been carefully examined and show no sign of local parasitic invasion. The foliage fails later in the season because of some condition of soil or air which upsets the normal physiological functioning of the plant. What this is we do not know. It seems analogous to the "little leaf" disease of trees and vines, for which definite cause has not yet been demonstrated and of which there may be several causes, producing ill-health manifestations upon the foliage.

Beans for Fowls.

To the Editor: What food value has blackeye beans for chickens? My chickens like them.—G. O. B., Modesto.

Your fowls must be from Boston, for our observation is that chickens usually wink at beans, unless cracked or otherwise disguised. They are a good, strong feed for growth or eggs, but should be fed with more starchy grains and not used in excess.

California Weather Record

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau at San Francisco for the week ending at 5 p. m., June 5, 1917:

Stations—	Past Week.	Rainfall Data.		Temperature Data.	
		To Date.	Normal To Date.	Max'm.	Min'm.
Eureka .....	.02	31.30	45.24	54	44
Red Bluff .....	...	39.24	24.67	88	54
Sacramento .....	...	12.94	19.99	86	48
San Francisco .....	...	15.78	22.15	84	46
San Jose .....	...	12.61	16.74	78	44
Fresno .....	...	7.25	9.64	90	50
San Luis Obispo .....	.02	23.02	20.47	72	44
Los Angeles .....	...	15.06	15.57	74	50
San Diego .....	...	10.11	10.01	64	54

By
the Editor

QUERIES AND REPLIES

Inquirer Must
Give Full Name
and Address

Gypsum for Beans.

To the Editor: I am going to take off a barley crop from a 20-acre piece in a few days and expect to thoroughly flood and plant to blackeyes. The ground is leased, so I can only figure this year's crop. Will an application of gypsum help the beans? The soil is sandy loam, and gypsum is very generally used locally on alfalfa. If the same is practical for beans, how much, when and how should it be used?—Reader, Winton.

If the land has not had much gypsum recently the effect on beans will probably be just like what local experience shows it to be in the stimulation of alfalfa. The plant will be spurred on to quicker and more vigorous growth—if there is moisture enough present to enable the gypsum to work. Beyond that, of course, there are several questions: Will more growth of the plant mean more beans; if so, will the more beans be worth more than the cost of the gypsum, etc? That depends upon what you get for the beans or pay for the gypsum. If all these work right, you may get a turn on the landlord, for the function of gypsum is not only to furnish lime, but to make other plant food in the soil ready to be taken up by the first crop—which presumably leaves less for the next, etc. Scatter the gypsum at planting or on the plowed land before harrowing. Five hundred pounds per acre will do.

Who Can Choke Foxtail?

To the Editor: For some years I have had my prune ranch plowed late in the spring in order to get the most benefit from the burr clover, and now foxtail and poverty grass have become very thick. What cover crops can I put in to choke these out?—J. J. B., San Jose.

We know of nothing which can get a "strangle-bolt" on foxtail but poverty grass. Some years ago California farmers rejoiced when they found poverty grass (which is a species of *Bromus*) running out foxtail, but they recalled their jubilation when they found that the strong intruder was worse than foxtail because of less feeding value—even when both are young and succulent. You will have to return to earlier plowing so as to catch both plants before they ripen seed and then clean the land by frequent shallow cultivation, as was your former practice. For a cover crop you should sow burr clover or vetch as soon as the ground is deeply moistened in the fall and get all the growth you can up to the time of an earlier spring plowing. It is a mistake, not only for weed seed-growing but for losing moisture, to let the land lie too late for the sake of a little more cover crop.

Capital for Tenant Farmers.

To the Editor: Fully half of the bean acreage in San Joaquin and Stanislaus Counties, as well as two-thirds of the beet crop, is being farmed by tenants. There is absolutely no way these people can secure loans for financing their operations regardless of their ability as farmers unless they tie themselves up by contract for their prospective crop at a price which would be ridiculous if it were not so serious. If the government needs foodstuffs so badly and if landowners themselves

will not or cannot farm their land it seems to me important that some wizard of finance devise some way whereby the man who has to rent land can be properly financed without being subjected to the pawnbroker methods of the buyers.—J. C. L., Ripon.

This is an important matter which the Council of Defense and local bankers are addressing themselves to. In some localities the bankers are acting in securing funds from the Reserve Banks for this purpose upon adequate personal responsibility. Tenant growers needing help should get together and tap the patriotism of the local bankers, for irrigation must come through their ditches. There is no likelihood of a direct shower of funds from above.

Do Not Over-Irrigate Potatoes.

To the Editor: My potato vines are tall, vigorous and in full bloom—many potatoes almost full grown. We have been using them for three weeks. I am advised to irrigate them again. I insist on no more irrigating. They have been wet three times already and some are taking second growth. Please tell me what's what.—J. C. M., O'Neals.

Stop irrigating until you get them in the kettle. They have already had more water than is necessary or desirable.

A Bad Case of Cutworms.

To the Editor: We are having our first experience at gardening, and the land we are using is new, and badly infested with cut worms. There are millions of them, and we are having the time of our lives fighting them. We spray, use poisoned bran, dig them out of their holes and crush them, and resort to every remedy. The first time we used the Paris green spray, it seemed to have killed the foliage of the young plants. Is this usual, or do we apply the spray too often?—H. J., Big Bar.

You might send to the National Council of Defense for the latest model of submarine-chaser. Otherwise, you are surely up against it for a little while longer. The worms will, however, soon submerge and go into summer quarters in earthen cocoons, and you can get a lot of them by plowing up the ground deeply and letting dry heat get at them until the early rains. In spraying, you should have used lead arsenate instead of Paris green, which contained more free arsenic than your plants could endure.

Sour Sap in the Top.

To the Editor: I have about 100 plum trees of different kinds and the leaves on most of the trees are small and turn yellow, on some of the trees. Part of the limbs will appear all right—large leaves and some fruit—and the rest will have small leaves. The disease gets worse each succeeding year. What can be done for it? Will spraying in early spring help them?—I. O. K., Fresno.

This is apparently a phase of the trouble discussed by Prof. R. E. Smith on the first page of our issue of April 21, with special reference to apricots. It is not a disease, but is apparently the effect of low temperature after the sap has risen

Boys Helped Fruit Harvests

[Written for Pacific Rural Press by Supt. J. L. Montgomery, Preston School of Industry, Ione.]

"The boys have been very satisfactory help, and I don't know how we could manage to get all the berries on this place picked without them. We want them to pick for us if there is any chance; for they have been the best help we ever had on the place."—H. H. Kelley, Sebastopol.

"H. H. Kelley has told me that you can bring the boys to the berry fields again this summer. This is good news to us and we will hope to make it a profitable season for the boys."—W. M. Hotte, manager Gold Ridge Orchards Co., Sebastopol.

The extracts quoted above from letters to the Preston School of Industry testify to the desirability of using boys in fruit harvests.

For two seasons, one of ten weeks and one of thirteen weeks, we sent fifty boys from Preston to the ranch of the Gold Ridge Orchards Company at Sebastopol, Sonoma county, to harvest their berries, Logans and Lawtons. In the season of 1914 our boys made a gross earning of \$1500. The best picker earned \$59, and the average was between \$20 and \$25. In 1915 we sent fifty-five boys for thirteen weeks, and the gross earnings were \$1675. We harvested the crop from twenty acres of Loganberries and sixty-five acres of Lawtons. The gross tonnage was about one hundred tons. Most of the berries were picked for the canneries.

CAMP MANAGEMENT.

They established Camp Preston in a grove of trees belonging to the Gold Ridge Orchards Company. The supplies were furnished from the commissary of the institution, some of them being sent by freight. Bread, for example, was sent by parcels post daily, baked by the boys at the institution. The only expense the boys were put to was that of transportation to and from the fields. The gross earnings of the boy, with his transportation deducted, were

placed to his credit as a "nest egg."

A majority of these boys have placed their earnings in a local bank, drawing interest. Others sent money home to their parents, who were in need. Some of our boys have accumulated over \$100 in a savings account.

Our camp was located about five miles from the camp of the Boys' and Girls' Aid Society. The captain of Company E, Wesley Sibole, and wife, were in charge of our camp, the boys doing their own cooking and taking care of the general camp duties. The work in the fields was supervised by some of the boys who, by virtue of their military positions, were placed in command of small groups.

The trip to and from the institution, which is located at Ione, Amador county, was by motor truck to Stockton, and a specially chartered steamer from Stockton to Petaluma, and via electric car to Sebastopol. The berry season meant money to the boys, and much hard work; but at the same time they had a part of each day set aside for recreation, and on numerous occasions were taken on trips to the beach. The camp had a swimming pool and a baseball diamond, and was well equipped, sanitary and well ordered.

SAN JOAQUIN GRAPE HARVEST.

Last year, 1916, a shortage of labor developed in our own vicinity, and this same group of boys was sent into San Joaquin county to harvest grapes. From time to time our boys have been sent out to assist various farm communities when they were unable to secure help to harvest their crops. The boys were thankful to the Gold Ridge Orchards people for the manner in which their camp was arranged and the various outings that were given them during their stay.

SUMMER-PRUNE BLACKBERRIES FOR FRUIT.

Before Lawton blackberry stalks of this season's growth are six feet tall late in June, it is absolutely necessary in the Sebastopol district of Sonoma county to top the vines, according to Manager F. B. Bill of the Sebastopol Berry Growers, Inc. Pruning shears or sheep shears are generally used. This forces out laterals, which are allowed to grow 18 to 30 inches long in a normal season; though many were tipped at 12 to 18 inches last year, which was especially dry. In the following season, these laterals send out fruit shoots which bear fruit at their tips and in their leaf axils. Barren shoots get ahead of the others early in the game and might well be pulled off.

LET TRAGEDIES RIPEN ON TREE.

Let Tragedies get pretty blue all over, so they are sweet and eatable before picking, says C. S. Hixson of Butte county, whose Tragedies generally top the market. If picked too soon, they shrivel and lack flavor and tenderness. They stand shipment well, even when ripe. In picking and packing, handle as little as possible, in order to leave the bloom on.

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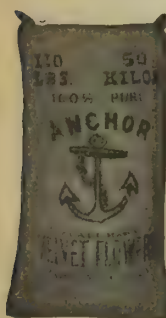
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San Francisco, Cal.



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Here and There in the Fruit Business

Atomic Sulphur for Grape Mildew.

After using atomic sulphur early in the season for three years on grapes for mildew, E. E. Morse of San Joaquin county is enthusiastic about it. He had just finished spraying 120 acres on May 25. It remains effective four or five weeks early in the season, according to the Morses, being ready to vaporize at the same temperature at which mildew spores germinate, which is about 85 degrees F. Last summer Harry Fee of the same county sprayed with atomic sulphur about June 1, and its smell could be noticed when the Tokays were packed.

Dry sulphur is generally used after the first spraying with atomic, due to the lower cost of the former and to the fact that that it would be hard to get a big spray rig among the vines then.

Plum Thinning.

The time to thin plums is when they stop their first growth to harden the pits. They stand still for a while, then start to grow again, says C. J. Uhl of Vaca Valley. He started about May 8 last season. H. A. Bassford says not to thin plums till after frost is over, which is generally about April 20. Leave small plums about an inch apart and large varieties two to two and a half inches apart. Pick off ill-shaped ones. It often happens that plums intended to be left wilt a few days after thinning, due to their stems having been partially loosened in pulling off the rest. Such a plum very likely does not mature.

FLORIDA SOUR ORANGE SEED-BED TREES

ONE YEAR OLD.

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RHUBARB

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J. B. WAGNER

"Rhubarb Specialist"

PASADENA,

CALIF.

Soap Suds for Curl Leaf.

To the Editor—I wish to say that I have checked and even killed curly leaf on peaches in full leaf by spraying with soap suds. At first I just threw my wash suds on the trees. Now I use a small sprayer and add atomic sulphur to the mixture. It takes several applications to kill it. I use two tablespoons of lye to one boiler of water, heat nearly to boiling point, and skim off the scum that will rise to the top, as our water is hard. Then add one bar of soap. I use it cold after taking it from my washing machine. Of course one could use it clean, but I make it answer two purposes.

Mrs. A. M. S.

San Juan Bautista.

Successful Walnut Budding.

Last season R. Burton of Vacaville found why he had failed with walnut budding in previous years. He had been in the habit of cutting buds without preparing them. Last season he cut off the leaf at the bud to be used, two or three weeks before cutting the bud. This permitted the leaf stem to dry up so no air could get through the cut end, and the bud could not dry out through the leaf stem. It made the buds plumper, too; and two-thirds grew of those he budded last September.

Humboldt Strawberries.

Where does this man profit? T. H. James of Humboldt county paid \$4.50 per 1000 for nine-ounce strawberry baskets last year and expects to pay \$6 this year. He pays \$10 per 1000 for picking the berries. Freight at 30c per 100 pounds costs about \$3.19 per 1000 baskets (including chests). These costs will total this year \$19.19 per 1000 baskets or 1.9 cents per basket. Add to this the rent, commissions for selling and cost of production. Then see if he shouldn't get 6 cents.

Makes Borders With Disk.

Borders made for orchard irrigation by plowing them in the upland red ground owned by Frank Watson of Butte county wouldn't hold water. Now he makes fine, tight, clodless borders by running the disk along the center between rows three times.

Weed Cutter for Lawtons.

Don't neglect a last cultivation of Lawton blackberries this month, preferably with a weed cutter, to loosen any caking of the soil and to cut the sprouts, which will bother the pickers in slightly cultivated ranches.

Save those dollars



Reduce the cost of clearing land.

If you have been using ordinary dynamites for blasting stumps, try either of the Giant Farm Powders—Eureka Stumping if the soil is dry or Giant Stumping if it is wet. These improved explosives go further and get the stumps out cleaner. They will save you dollars on every acre, because they are made especially to meet Western conditions.

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"Most satisfactory," says John Zurr, Santa Rosa, Cal.

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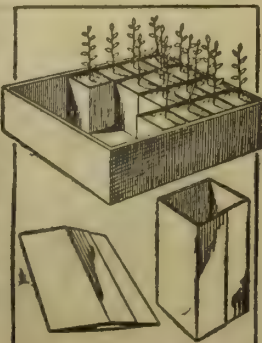
that will keep Squirrels, Rabbits and Gophers from barking your trees and give perfect protection from hot sun, sandstorms, barking in cultivation, etc. Tell us your pest and we will tell you what kind of a wrap to use. We make a number of kinds and can save every tree for you from pests.

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These pots are bottomless. This allows you to plant pot and plant, never disturbing your plant nor stopping its growth in transplanting a single hour.

For starting early vegetables, such as Tomatoes, Cabbage, Eggplant, Cauliflower, Cucumbers, Cantaloupes and Squash; also for propagating Rose Cuttings, Geraniums, Eucalyptus and Conifers. It's the only practical pot on the market today for propagating work. Write us for samples of either Pots or Protectors. Tell us which you are interested in.

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935 E. Central Ave., Redlands, Cal.



Beating the Average White Bean Yield

[Written for Pacific Rural Press.]

Two reasons stand out why Rustin Kramer gets better average yields of Lady Washington beans than his neighbors of Sutter Basin in the Sacramento Valley. One is the persistent cultivations by which the ground is worked fine and vegetation kept down from the time when winter floods recede (any time from February to May) until planting time, about June 1. The other is the separate corner for seed in which he plants eight or ten sacks from another district about every four or five years; and the careful recleaning the seed gets every year before planting. These preparations assure a good stand, moisture retained for the beans and not stolen by weeds, and much less trouble is weeding. Mr. Kramer has been growing beans for twenty years; and he has grown only the large whites, because he does not want volunteer colored beans to reduce his grade or to mix his seed.

Many people plant whites early in May; but Mr. Kramer waits at least until June 1. Then they are not in bloom until late August. Those planted earlier are abloom in July and early August, when hot winds are likely to blast the blossoms. Then a second growth comes and continues too late, setting beans which do not ripen.

EXTRA FINE CULTIVATION.

So soon as the water recedes from the field and it begins to get foul with weeds, Mr. Kramer has it plowed, generally four or five inches deep, but once a foot deep. The flood leaves one-fourth to one-half inch of silt over the land every year, so it is never artificially fertilized; and irrigation is not practiced, the land being bordered on two sides by the Sacramento river levee.

After plowing, the field is harrowed and rolled; lies idle two weeks for more weeds to sprout, and is then harrowed and rolled. Two

weeks later it is double-disked deep, harrowed and rolled. This spring, on May 18, he was just finishing a clod-mashing which followed disk-ing and harrowing. Another plowing was to come about June 1, and the beans were to be planted the day after plowing.

PLANTING BEANS.

Planting beans too thick makes them grow tall and spindling and prevents the lateral growth which bears the pods. A spindly vine may have a dozen pods, while a well-branched vine will be loaded.

Thirty to thirty-five pounds of Lady Washingtons are enough per acre, planted two or three inches apart in rows thirty-two inches apart. Special plates for beans could be put into a corn planter satisfactorily, but Mr. Kramer has a regular bean planter. To test out the speed of seeding, the best way is to run the planter on hard ground a few rods. Beans do not break in the planter, regardless of speed, if the holes in the plates are big enough to admit an entire bean.

CULTIVATION AND HARVESTING.

Cultivation with a two-horse shovel cultivator about three weeks after planting is followed by a crow-foot weeder, which leaves the ground level and clean. When vines begin to shoot runners, hand weeding and hoeing commence. Half of the weeds must be pulled, being close to the vines; but this is not much of a job, because of the long, frequent cultivation before planting.

Harvesting commences about the middle or last of September, according to the weather. Last year it was September 20 when the last pods were "beginning to dry pretty yellow." Harvesting too green takes longer for them to cure in the winnow and the beans are not plump, but flat and unmaturing. A bean thresher is used after the beans have cured.

What Is the Matter with the Farmer?

[Written for Pacific Rural Press by C. Carr Baum, Edendale, Cal.]

To the Editor: Just a few words in answer to Mr. Chas. Blom's article in the Press of May 26th, entitled, "What Is the Matter With the Farmer?" Many have spent a lifetime trying to answer this question, but I think the answer is to be had by those who will consider some of the things that are helping to educate the farmer.

We have ably published farm papers by men who really have the best interests of agriculture at heart. The telephone, the automobile, better roads, farm schools, government and state bulletins on important subjects, and last but not least the different farmers' organizations.

All of these agencies are helping to solve the question asked by Mr. Blom. It is necessary in all great movements to start at the bottom and work up, and the farmer was on the very bottom rung of the ladder. Thanks to the agencies at work, he is climbing faster every year and the day of an organization to embrace all farmers is fast approaching. It is necessary for every farmer to realize for himself that he cannot stand aloof from his fellow worker. In union there is strength.

Personally, I belong to the Farmers Union, California Peach Growers, Inc, the California Prune and Apricot Growers Association, and a National Farm Loan Association. If my farming required any other joining on my part, I would be ready and willing to help with my time and money.

Let every man who has the bet-

terment of farmers and farm conditions at heart put his shoulder to the wheel, and when enough push hard enough the big wheel of a

united farmers' association will turn, and around this wheel all those who till the soil will move as one man with one purpose.

Mr. Ranch Owner! Mr. Truck Gardener! Mr. Farmer!

Are you awake to the opportunities that lie all around you?
Do you realize that today, now, is the best time to grasp your opportunities?
Have you studied your ground to the best of your ability?

Are you losing valuable space, spending valuable time planting crops, only to see them dry up, burn up before your very eyes for lack of "rain"?
Why not be your own "rain-maker"? It is easy. "How," you ask. "IRRI-GATE." Whether you own hundreds of acres, one acre, or even less, you can have water as you need it, a thorough soaking or a few drops, by simply turning a valve and letting your pipe carry the water just where you want it. This is not an expensive process, not nearly as expensive as it is to spend hours of back-breaking toil only to see your crops wither and die for lack of water.

Do not experiment with "Irrigation Pipe," as so many have, but write or go to a firm that has made the subject of "Irrigation" a thorough study; who have spent thousands of dollars in devising a perfect pipe for the purpose. Let their thoroughly competent corps of special pipe engineers tell you what you require and what not to install. They will tell you the truth, for the reputation of their company is back of them and they cannot, dare not misrepresent their product. They have been in business over a quarter of a century and cannot betray the confidence of their customers.

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GOPHER TRAP**

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WESTERN
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You can get a Homestead of 160 acres FREE and other lands at remarkably low prices. During many years Canadian wheat fields have averaged 20 bushels to the acre—many yields as high as 45 bushels to acre. Wonderful crops also of Oats, Barley and Flax.

Mixed Farming as profitable an industry as grain raising. The excellent grasses full of nutrition are the only food required for beef or dairy purposes. Good schools, churches, markets convenient, climate excellent.

There is now an extra demand for farm laborers to replace the many young men who have volunteered for service in war. The government is urging farmers to put extra acreage into grain. Write for literature and particulars as to reduced railway rates to Supt. of Immigration, Ottawa, Canada, or

GILBERT ROCHE, Canadian Government Agent
Canadian Gov't Exhibit, San Diego, Calif.

Field and Garden Suggestions

[Written for Pacific Rural Press.]

Who Will Help Get This Grain?

To the Editor: In the heavy rain of last week much grain lodged badly in this section. Barley is in the soft dough stage and heads quite heavy on the stem so it is hardly likely that it will raise much. In my own field, in places where quite rank, as much as an acre or two went down almost solid; other places only in spots. How can I handle this so as to cut without losing much grain? Do not believe a binder can raise it more than enough to clip off heads, too short for binding. I lost much last year in same way.—W. H. W., Turlock, Cal.

[The heads will rise somewhat and we should expect to get more of them with a header than with any other outfit. If we had no header we would feed it off with sheep or hogs. Can any reader make a better suggestion?—Editors.]

Careful Summer Fallow.

Now or sooner is the time to be working for next year's grain crop.

Good summer fallow was responsible for one of the best little pieces of barley noted on a Sacramento Valley trip last spring. It was four acres, worked by Ed Norton of Glenn county. Ground was plowed a good six inches deep late in the spring, harrowed right away, and a

clod crusher run over it. Then it was spike-toothed twice, and no weeds grew on it all summer.

Clean seed was recleaned by Mr. Norton, so it weighed 110 pounds per sack. A hundred pounds of this was broad-casted per acre about December 15, and spike-toothed twice. It made a beautiful, heavy, uniform stand three feet tall when seen in early May. The heads were about three inches long. No irrigation or fertilization was given, though it had been hog pasture the season before following.

Harvesting Onions.

The Italian Red onions planted last September and transplanted about New Year's by J. A. Harvey of Butte county are ready to harvest June 15 to July 1. In the growing season the tops would break if bent sharply at the collar, but about harvest time they get "floppy around the collar like a rag." Then the tops are bent down, and when they are pretty dry the onions are pulled by hand, cultivation having kept the ground soft. They are left in fifty to sixty pound piles to cure until the tops are perfectly dry. If the sun is very hot, protect the onions in the piles by keeping the tops over them.

Did They Interpollinate?

For two years in succession W. Hanson of Nordhoff has tried to get a stand of white beans on his hillside land, but with little success till season before last, when he grew a few pink beans for his own use. In places where the pink beans had grown near the white ones they both did well, but where the whites stood alone only half a crop was gathered. This set Mr. Hanson to thinking, so he did it this way: Two rows of whites, then two rows of pinks, and last season he not only tested out a good experiment, but had a bumper crop of both whites and pinks.

Ants on Egg Plant.

To the Editor: I wish to say in reply to W. S. C. of Lindsay, in regard to ants eating egg plants, that I have had the same trouble, and saved my plants by sprinkling with Buhach. Be sure to get plenty of the dust near the roots and on the blossoms. Get Buhach at drug store. It will have to be applied after each irrigation or oftener, as ants appear.

MRS. C. E. BURNETT, Tulare.

Honey Sections Held Tightly.

To hold the honey sections firm in the supers, J. Risse of Tehama county has a thin board beside them which is held tightly against the sections by springs. Pull against the springs with one hand when taking out the sections with the other.

The farmers of the country should subscribe liberally to the Liberty Loan Bonds. They get the safest investment in the world and their money supplies their best customer the funds to purchase their products. This is political economy the wisdom of which is plain to everyone.



Shingles that last as long as the house

California Redwood shingles defy the attacks of sun, rain and changes of temperature. They resist wet and dry rot, and when properly laid make a permanently tight roof.

Since Redwood contains a *natural preservative*, Redwood shingles in their natural state will last a lifetime. If stained or painted occasionally, they will last as long as the house.

And since Redwood contains no pitch, it is hard to ignite, burns very slowly and is easily extinguished.

California Redwood

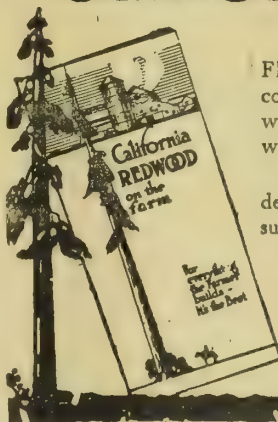
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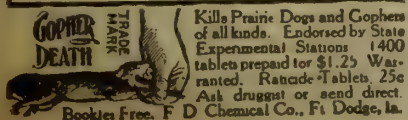
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We are the pioneers in this business—equipped to make the best possible goods at a fair price. We make appliances for every kind of irrigation. The advice of our experts is yours for the asking. Write today for our booklet on Irrigation—or for any specific information you may require.

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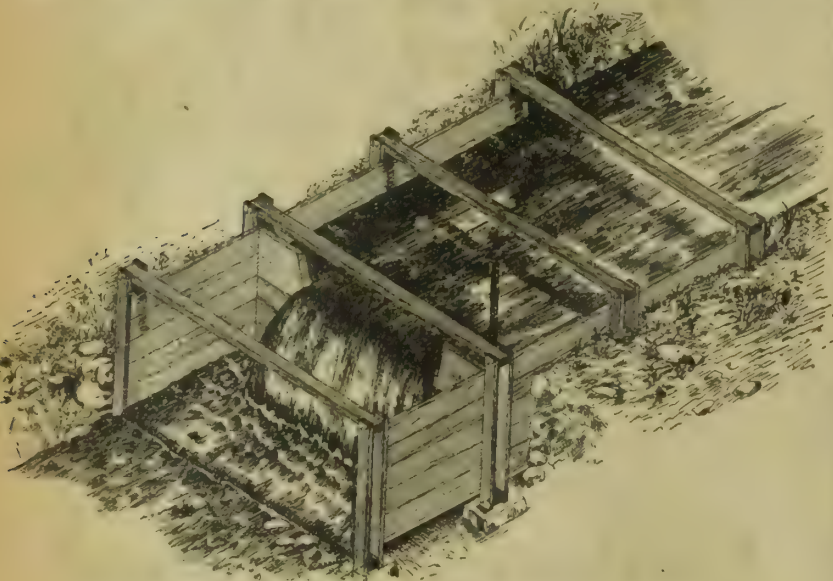
Users of tractors, engines, pumping plants, motor trucks, automobiles, electric motors, and other mechanical farm power are invited to make this department an exchange of their experiences and troubles.

WATER MEASUREMENT FOR IRRIGATION.

A subscriber has asked the Pacific Rural Press for information as to the size, pressure required and other detail for standard irrigation boxes for measuring water.

The illustration printed herewith shows how such a box should be

stream side. There are a large number of forms of weirs. The Cipoletti Weir, in general use, has a thin horizontal crest, the sides of the weir notch, sloping back from the vertical at an angle equal to one inch in horizontal for every four inches in vertical. For each additional inch in depth, the weir notch widens on each side one-



Weir Box in Operation.

made and how it is placed. The operator, with an ordinary rule, measures the depth of water flowing through the weir notch.

The term "weir" is properly used only for structures designed to allow the water to flow over the crest with a considerable fall on the down

fourth of an inch, or a total addition of width of one-half inch.

When the weir box is placed, care should be taken to have the bottom of the notch or crest level. An ordinary carpenter's spirit level may be used for this purpose. When the crest is horizontal, one end of the spirit level is placed on the center of the crest; and when level, the other end will mark the point for the zero of the weir gauge. In rough work, a nail may be driven part way into the side of the box, the top of the nail being level with the crest of the weir. A thin plate of brass is to be preferred to a nail. In other cases gauges are inserted on the sides of the flumes and properly marked in tenths of feet or inches. At other times a post one to two inches square is placed in the center of the box and several feet upstream from the weir board. The top of this post is level with the crest. To measure the flow, find its depth above the post or on the gauge and refer to the table in Wickson's California Fruits to get the cubic feet per second or gallons per minute.

One miner's inch equals 0.1496 gallons per second, 8.976 gallons per minute, 538.56 gallons per hour, 12,925.44 gallons per day; 0.02 cubic foot per second, 1.2 cubic feet per minute, 72 cubic feet per hour. One acre-inch of water (that is, one inch in depth over an acre of surface) equals 27,152 gallons or 3,630

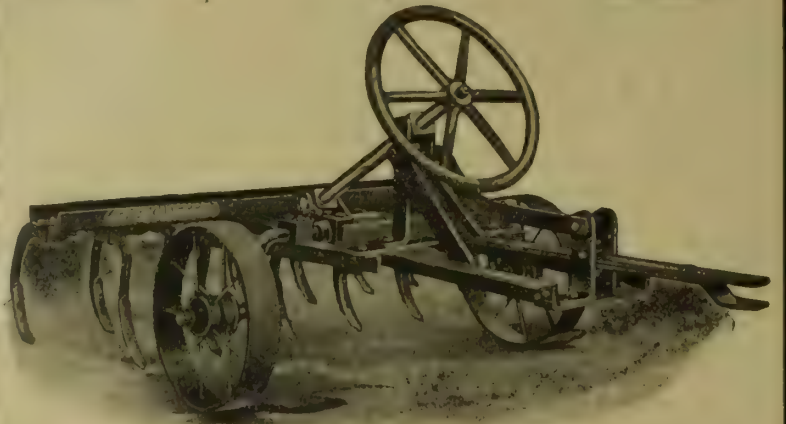


KILLEFER
QUALITY

HEAVY DUTY CULTIVATOR No. 3



KILLEFER
EFFICIENCY



This latest model of Tractor Cultivator was built to meet the demand of owners of the smaller size Orchard Tractors.

Built on the lines of our well-known and popular Monarch Cultivator with levers and rear wheel eliminated, but provided with hand wheel screw lift, making it a perfect one man cultivator.

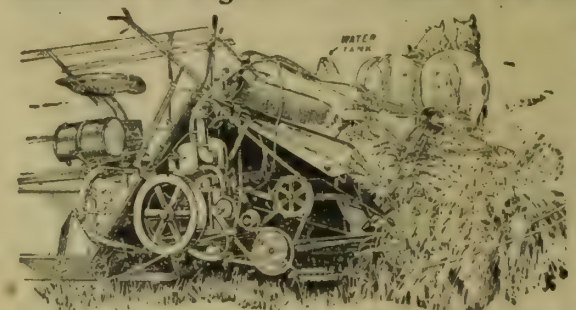
The material used in this cultivator is of the same high grade as used in the make of all of the Killefer implements.

GET YOUR ORDER IN EARLY

The Killefer Manufacturing Co.

2209-21 Santa Fe Ave. Box 156 Arcade P. O. Los Angeles, Cal.

Cushman Farm Engines Used on Binders Will Save You Money



Binders require less horse-team, work easier, cutting greater acreage. Will save grain on the corners. Get down or lodged grain. Heavy crops have no terrors for a Cushman.

It is An All-Purpose Engine Will fit any grain, rice or corn binder.

IT WILL DO MORE KINDS OF WORK THAN ANY FARM ENGINE MADE BUILT LIGHT—BUILT RIGHT—GUARANTEED

Has wide range of speed—300 to 950 R. P. M.—and will operate wood saw, pumps, washing machines, cream separators, ensilage cutters, sprayers, threshers, battery rollers, grain grinders electric generators, hoists, power blacksmiths' tools, concrete mixers, etc., to best capacity. Will furnish power to mowers, reapers, manure spreaders, etc.

BUY A CUSHMAN THAT YOU CAN WORK EVERY DAY A 4 H. P. will drive 3-inch centrifugal, an 8 H. P. will drive 5-inch centrifugal with 20-foot head on 6½ gallons of distillate in 10 hours. See your dealer or write for information to

THOS R. BROWN, Factory Representative, Stockton, Cal.

BEAN THRESHERS THE TWO STANDARDS

Built Especially for California Conditions



Guaranteed by "The House of ARNOTT" Ask The Grower Who Owns One Write for Folder, Specifications, Prices Etc.



ARNOTT & CO.

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Past the Experimental Stage Eleven different models, with or without Engine mounted complete Ranging in Price from \$210 to \$1,000 All Repair Parts Carried



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WOODIN & LITTLE

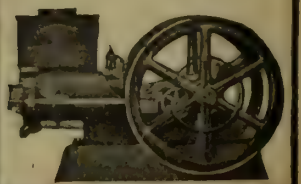
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33 TO 41 FREMONT ST. SAN FRANCISCO, CAL. PUMPS FOR EVERY SERVICE AND USE

FOR IRRIGATION—Power, Belt, Electricity, Air, Vacuum, Ship, Spray, Wine, Oil, Mines, Steam, Water Works, Wind Mills, Road Sprinkling, Rams, Hand, Deep and Shallow Well Pumps, Goulds Celebrated Triplex Pumps.

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Pipe, Pipe Fittings, Brass Goods, Tanks, Wind Mills.



Send for our large No. 36 Catalogue Mailed Free.

GASOLINE ENGINES

Inquire of your Local Dealer for full particulars.

**real
refinery
gasoline**

**- not a
mixture**

STANDARD OIL
COMPANY
(California)



cubic feet, and one miner's inch will supply this quantity in about 50.4 hours. Thus a simple calculation shows that a little stream of five miner's inches will supply enough water to cover an acre 2.3 inches deep in about 23 hours—a fair amount for one irrigation of soil of average character if it has not been allowed to become too dry before the application. In fact this is an average amount actually used for an irrigation of shallow-rooted plants like most field and garden crops.

HORSEPOWER PLUNGER PUMP.

[Written for Pacific Rural Press.]

A horsepower attachment for a common plunger pump may be seen on a little ranch in Butte county. A 20-foot sawhorse was made of a 4x12 timber set flatwise on four legs 4x4 inches by seven feet long. It was simply set on the ground with the end to the pump. The legs were well braced. From the ground vertically through the center of the 4x12 timber is a two-inch iron rod. On it about 2½ feet from the ground is clamped a 10-foot sweep for a horse to pull, and a shorter 2x4 to lead the horse.

On the top end of the rod and above the timber, is a horizontal wheel 32 inches across and cogged to fit a pinion on a horizontal 1¼-inch rod which runs along the timber and projects over the pump. To hold the cogs in mesh, a little wheel is held by a bent and twisted strapiron to roll on the rim of the big wheel over the pinion as the big wheel is turned.

With the horizontal rod for its axis, a 30-inch wheel hangs over the pump. A bar with several holes in it is fastened to the wheel, so a bolt through one of the holes turns with the wheel in a circle of the right size to make the stroke of the plunger. A rod from this bolt to the plunger operates the latter.

BEETS NEED FREQUENT IRRIGATION.

[Written for Pacific Rural Press.]

The difference between a poor crop of small stock-beets and a good big one on the same land next year in an irrigated district, was made by use of a 7½-h. p. motor and a 3½-inch pump in the house-well, for E. Q. McClure, then of Stanislaus county. Ditch water came every five weeks, so that in 1915 the beets wilted down twice between irrigations. In 1916, by irrigating from the pump, a good crop of stock feed was obtained from the same piece.

LAY THE DUST AROUND PACKING HOUSE.

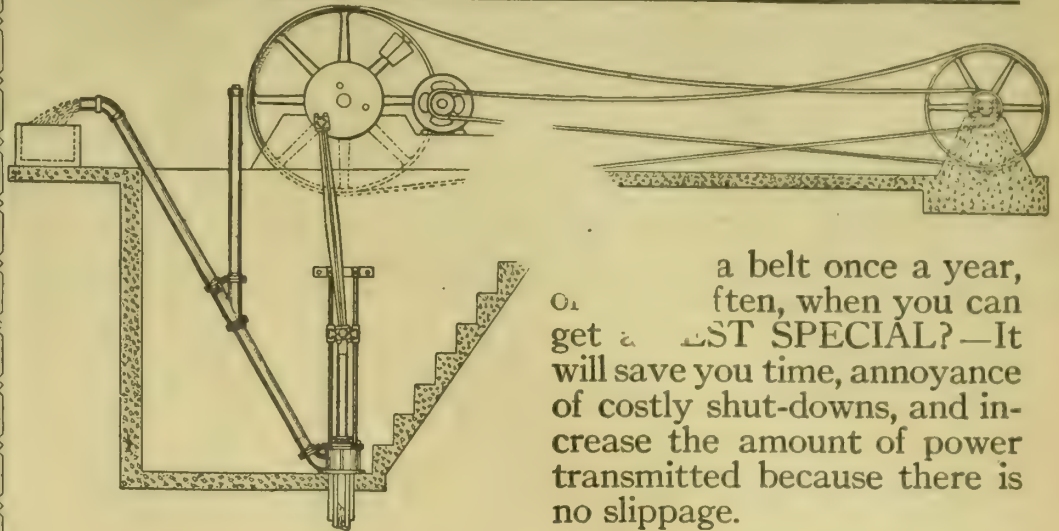
[Written for Pacific Rural Press.]

In dusty weather it is hard to pack cherries, plums, and other fruit clean so it will open attractive at the East. To avoid dusty fruit, H. A. Bassford of Solano county sprinkles water around the packing house on his ranch. A 5,000-gallon tank on a tower beside the packing house furnishes the pressure. It is filled by a 2-h. p. gas engine operating a common plunger pump.

When buying a tractor, see that it is strong, simple and light, that the motor is well enclosed, the tractor adapted to belt work, will turn in small space, is economical and the company in business to stay.

TEST SPECIAL BELTING

A money-back-belt — no arguments — no quibbling



a belt once a year, often, when you can get a **TEST SPECIAL**?—It will save you time, annoyance of costly shut-downs, and increase the amount of power transmitted because there is no slippage.

A GOOD belt will last for many years—**TEST SPECIAL** surely will—money back if it doesn't.

No other belt has ever approached **TEST SPECIAL** in point of service—no other belt likely ever will—the reason—it is honestly made—most belts are "near belts."

Write to us about your belt troubles—make a rough diagram or drawing of your belt as now installed, if you can do so, otherwise, tell the story as fully as possible.

We'll promptly reply and tell you how to get the best results. You don't have to buy a **TEST SPECIAL** in order to get our help—you'll be sure to buy one some time, when you know how much money it will save you.

Fill Out This Coupon—Mail It TODAY

New York Belting and Packing Co.
519 Mission St., San Francisco —Dept. **A-2**
Send me samples of Belting that you will guarantee to give satisfactory service on my work and quote prices delivered at

.....Station.

Horse Power	Diameter in Inches
{ Elec. Motor.....	{ Driving Pulley.....
{ Steam Engine.....	{ Driven Pulley.....
{ Gas Engine.....	

Kind of Drive
Cross.....
Straight.....
Perpendicular.....
Width of Belt..... Ply.....
Distance between centers of Pulleys.....
Rev. per minute of Driving Pulley.....
Kind of Machinery Driven.....
My dealer's name.....
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Address.....

A pocket memo, booklet giving speed and power tables will be sent FREE to all who mail this coupon.

New York Belting and Packing Company
519 Mission Street : : San Francisco

Home Office: New York City. Branches in all principal cities

Plowing

with a crooked stick—with oxen or with horses—were only steps up to the time-saving **TRACTOR**.

We're living rapidly—the demand is greater every day for food—it's the farmer's bit to produce what he can.

He has the soil, climate, water and seed—time is a factor—save each hour—it's too valuable to waste.

Use a Yuba Ball Tread Tractor to make the most of the opportunity—for you and for your country.

Write for catalogue—telling us the number of acres you have.

DEPT. A-19

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MANUFACTURING CO.
433 CALIFORNIA STREET
SAN FRANCISCO, CAL.

Growers, Attention!

You can secure
Increased Production
By Using

"WAPCO" BRAND CANVAS IRRIGATING HOSE

Economical to Handle

Made by

W. A. PLUMMER MFG. CO., San Francisco

Sold by Leading Merchants

If Your Dealer Cannot Supply You, Write Us for Information

General Agricultural Review

Field Notes.

California's crop of Irish potatoes will nearly treble last year's yield.

This year more than 60,000 acres in San Joaquin county are said to be devoted to beans.

Cold weather in April and May hurt the cotton crop severely through the entire South.

California's alfalfa crop this season is estimated at 6,125,000 tons, valued at \$61,250,000.

Oats and barley around the Pomona section look good. None is cut for grain, all going to hay.

Acreage under cantaloupe cultivation in the Imperial Valley exceeds that of last year by over 5,000 acres.

The harvest of the 1917 American wheat crop began in Texas May 22, three days earlier than normal.

It is estimated by Farm Adviser Hulemann that the potato acreage in Glenn county is five times that of previous years.

State Horticultural Commissioner G. H. Hecke says the recent cool snap will increase California's cereal crop by about 20 per cent.

Out of the 12,000 acres planted to rice in Yuba county this year, 9,000 acres have been put in by the Fleishhacker interests of San Francisco.

Wheat is said to be a light crop in the Livermore Valley and elsewhere in that vicinity. Barley, on the other hand, is a good crop in that section.

Despite forebodings of a short grain crop because of lack of rain this winter, indications now are for one of the biggest grain crops in the history of the Oakdale section.

There will be 1,000,000 cases of asparagus from the lower reaches of the Sacramento Valley ready for the market when the present season closes, or 250,000 cases more than last year, it is reported.

J. H. Belger of San Leandro says tomatoes and other vegetable crops give promise of being good yields in and around San Leandro. There is a sufficient quantity of moisture in the ground to insure satisfactory growth.

Five thousand acres of the rice crop of Glenn county have signed up at a meeting of the rice growers in Willows, and nearly every grower in the county signified that he was willing to join the Pacific Rice Growers' Association.

The potato crop of Riverside county will be at least 300 per cent above normal this year, according to a report issued by the committee on food supplies and resources of the State Council of Defense at the University of California.

Farmers in the various agricultural districts of Alaska will have as much ground under cultivation as possible this year. Intensive farming is possible in Alaska, owing to the long days and the rapid growth of root vegetables and berries.

A letter from a correspondent near Modesto states that alfalfa is being cut the second time, and grain-hay harvesting is nearly completed. Prices on first cutting of alfalfa in the field range from \$8 to \$10. Buyers are trying to contract tomatoes at \$10 f.o.b. Ripon. Some peaches have been contracted at \$25 for freestones and \$45 for clings.

Deciduous Fruits.

The Hanford Cannery contemplates a record pack.

This year the cherry season is 17 days later than last at Newcastle.

Shippers in the Watsonville district are sending in raspberries and loganberries.

Practically all of the apricot crop in the Banning-Beaumont district has been contracted at \$50 a ton, and some buyers are now offering \$60.

The outlook for apples in the Pajaro Valley is fine and the dryers contemplate handling immense quantities of fruit that may be held for lack of shipping facilities.

Veteran commission men of San Francisco declare that there will be no shortage in any of the staple vegetables and fruits this year, except possibly in apricots and cherries.

Santa Clara county will have the greatest prune year ever known in her history according to J. W. Chilton, local packer, who predicts that the crop will be 112,000,000 pounds.

A branch from one bud inserted on a Royal apricot tree by R. Burton of Vacaville, has a dozen different kinds of leaves and three or four kinds of fruit, some fuzzy and some smooth.

The Alameda County Retail Grocers' Association and the Central California Berry Growers' Organization have decided that there shall be no rise in prices of berries on Saturday mornings, as heretofore.

Contra Costa county will have a full normal crop of prunes. Sonoma county will produce above 60 per cent of a normal crop. Frost damage there is being overcome by larger sizes and new acreage. Napa county will yield a full crop, according to Henry Wheatley, one of the large orchardists.

The outlook for a normal crop of all fruits never was better in San Bernardino county than at the present time. Peaches and apricots are being thinned to make room on the trees for the fruit to grow. So far it looks like a 100 per cent crop for apples, pears, grapes, olives, oranges, lemons and grapefruit, says John P. Cay, Horticultural Commissioner of San Bernardino county.

Citrus and Semi-Tropical.

Initial shipments of new-crop figs received in the San Francisco wholesale market from Indio, Cal., sold at 40 cents a pound.

A large olive packing plant will be built in Lindsay this summer. Besides the processing of olives the plant will be equipped to turn out oil.

The Glendora Citrus Association closed the season last week for Washington navels with the shipments of 822 cars, or 328,538 packed boxes, bringing growers about \$445,000.

Professor L. B. Scott, pomologist in charge of the subtropical fruit investigations of the Department of Agriculture, says that there are 140 varieties of avocado grown in Orange county.

The Glendora Heights Orange and Lemon Association finished its season for navels last week, handling 250 cars, or approximately 100,000 packed boxes, worth to growers about \$140,000.

The fig growers of Fresno county who organized recently have sold their holdings of 230 tons of the 1917 crop to local packers. The Calimyrnas brought 11½ cents, and the Adriatics 7½ cents a pound.

Firms who purchase citrus by-products are requested to list their names and needs with the Bureau of Chemistry of the United States Department of Agriculture, located at 142 South Anderson St., Los Angeles.

The Ashley fruit standardization act, drawn as a result of conferences of fruit growers and bringing citrus fruits under standardization regulation, has become a law. It provides that oranges must be substantially colored upon the trees or must pass the eight-to-one test.

The San Antonio Fruit Exchange of Pomona reached high mark for the shipping season last week when it sold 222 cars of navels in the Eastern markets in four days for \$187,000, an average of \$850 per car. The orange growers in the ex-



Back Leg Hinged Metal to Metal.

Buy for Permanence

SECURITY ORCHARD LADDERS

(of course the first cost is more)

No mortises at step-joints. Stile machine-

wrapped with steel at every step.

Extra strength where needed without excessive weight.

Half of California's Citrus Crop is picked from these straight-grained Douglas fir ladders.

The great Northwest sends down for hundreds of SECURITY LADDERS each season for apple and pear growers' use.

Here is a ladder so rigid that even a "green hand" will not hesitate to reach out and up for fruit. No picker will have to waste time moving this ladder so much, because "SECURITY LADDERS" are safe under all conditions.

The steel brackets that hold the steps (flat) make step-changing quick and easy. The ladder loses none of its stability.

SECURITY LADDERS will soon save their entire cost in your orchard.

Some of the California dealers listed below have sold SECURITY LADDERS for 10 years—many of them for 5 years—and all of them continue to pay the higher first-cost because SECURITY construction has been thoroughly approved by fruit-growers.

Northern California Dealers

Anderson	J. P. Burbank Co.	Penryn	All dealers.
Auburn	G. E. Lukens & Sons.	Placerville	All dealers.
Chico	Farm Equipment Co.	Ryde	W. M. Brown.
Corning	C. W. Million.	Sacramento	Emigh-Winchell
Courtland	C. A. La Montagne.		Hardware Co.
Esparto	Wyatt Bros.	Santa Rosa	Ketterlin Bros.
Gridley	Christ. Mayer.	Sebastopol	Sebastopol Berry
Healdsburg	Gunn & Ferguson.		Growers, Inc.
Hood	La Grave & Harrison	Sonoma	F. Duhring.
Isleton	Gardiner Co.	Suisun	All dealers.
Kelseyville	P. Q. Robison & Sons	Ukiah	Ukiah Farmers' Club,
Lakeport	R. C. Kinleyside.		Inc.
Lincoln	All dealers.	Upper Lake	E. P. Sailor.
Live Oak	Norman King.	Vacaville	All dealers.
Lodi	Beckman, Welch &	Vineburg	John Batto & Sons,
	Thompson Co.		Inc.
Loomis	All dealers.	Walnut Grove	Alex Brown.
Napa	H. Shwarz Co.	Winters	All dealers.
Newcastle	All dealers.	Yuba City	Starr & Bremer.
Oroville	Ophir Hardware Co.		

Central California Dealers

Bakersfield	A. Weill.	Parlier	Eymann Hardware
Ceres	Ceres Hdw. & Imple-		Co.
	ment Co.	Porterville	All dealers.
Fowler	J. S. Manley Co.	Reedley	Reedley Hardware
Hanford	Hanford Hdw. Co.		Co.
King River	Coleman & Elliot.	San Jose	Garden City Imple-
Kingsburg	Olson Bros.		ment & Vehicle Co.
Lemon Cove	W. H. Moffett & Son.	Selma	Kutner-Goldstein Co.
Lindsay	Ostrander-Race	Strathmore	Bigham & Browning.
	Hardware Co.	Turlock	Hedman-Johnson,
Madera	Madera Hardware		Inc.
	Co.	Visalia	Cross-Horlock Co.
Merced	Merced Hardware	Watsonville	Pajaro Valley Mer-
	Co.		cantile Co.
Oakdale	Nightingale-Sivley Co.		

Southern California Dealers

Alta Loma	Franklin Roth.	Ontario	Drew Carriage Co.
Banning	C. S. Holcomb.	Piru	Ventura Co. Co-op.
Carpinteria	Hickey Bros. Co.		Assn.
Corona	Corona Hardware Co.	Redlands	E. M. Cope Com'l Co.
	Glass Bros.		Russ Lumber & Mill
Cucamonga	Williams-Lucas Co.		Co.
Escondido	Robertson & Cassou.	Riverside	Riverside Hardware
Fillmore	Ventura Co. Co-oper-		Co.
	ative Assn.	San Bernardino	Geo. M. Cooley Co.
Glendora	Fox-Woodsum Lum-	Santa Paula	Butcher Hardware
	ber Co.		Co.
Hemet	L. B. Gibbel.		Santa Paula Hard-
Lankershim	Thos. H. Brown.		ware Co.
Lemon Grove	Sonka Bros.	Upland	Mehl Hardware Co.
Monrovia	Myrtle Hardware Co.	Ventura	E. W. Duval.
Nordhoff	Hickey Bros. Co.		

If your town is not listed above write me and I will call upon you personally

J. B. Patterson, Manufacturer

82 Franklin Street

Oakland, California

change, which is composed of seven associations in Pomona, Lordsburg, Claremont and Walnut, have received \$2,356,502 already this season, and it is expected that at least \$1,000,000 more will be received from the sale of late navels and Valencia's.

Record Fruit Crop in California.

Reports received by State Commissioner George H. Hecke from the horticultural commissioners of the forty-five producing counties of California, showing fruit conditions on June 1st, promise the largest crop setting on the trees in years. A shortage is noted in some localities in a few varieties, while other sections show above the average, and the new acreage coming into bearing should offset the losses. The weather for the month of May, while cooler than usual, has benefited the grain crop and has not proved injurious to the fruit crop, except in one county.

A few comparative figures, as follows, indicate a big increase this year: Almonds are tied with last year's report, indicating 59 per cent for June 1. Apricots showed 40 per cent last year and 65 per cent this year. Peaches 68 per cent in 1916 and 86 per cent in 1917. Pears 63 per cent in 1916, 89 per cent in 1917. Prunes 52 per cent last year and 77 per cent this year. Other fruits of the State show about the same ratio.

No Los Angeles Fair.

The Los Angeles District Fair, preparation for which has been going on for the past three weeks, and the willingness of breeders to cooperate to their fullest extent, has been declared off for this year by the board of directors. With so much war preparations going on and the attracting of the masses from the more peaceful pursuits to war's alarms, it was feared would be sufficient to interfere with the fair's success. Then, too, the ground to be used, it was feared, would be needed for military purposes. Hence the decision to abandon the fair for this fall.

Grasshopper Poison.

On open land, where grasshoppers are abundant and waiting for their wings to migrate to planted areas, they may be poisoned. T. D. Urbahn of the U. S. Dept. of Agriculture recommends the following poison: Mix a pound of Paris green thoroughly with four gallons of water and two quarts of cheap blackstrap molasses. Add half a dozen lemons ground fine in a meat grinder. Slowly pour this mixture over 25 pounds of bran and stir thoroughly to a uniform mixture. White arsenic is about as good as Paris green. Oranges or a little salt may replace the lemons. Alfalfa meal or rice meal may replace the bran. Broadcast this on hill land by hand or with an end-gate grain-seeder. Spread finely, for all lumps are wasted and a menace to stock. The above amount is enough for five acres.

Grasshoppers feed ravenously late in the afternoon. The poison is most effective if spread early in the afternoon. If alfalfa, mow alternate checks to concentrate the grasshoppers, then poison them.

Always be careful not to poison livestock and poultry.

Big Fruit Shipments.

Authorities in fruit shipping estimate that, if the grape prospects hold up, the total deciduous fruit to be sent out of the State this year will approximate 20,000 cars, as against 18,000 cars last year, which was the record breaker at that time. The season is about two weeks late; the Eastern market has toned up wonderfully, so that good prices are anticipated.

Good Barley Crop.

Prospects for barley have gained steadily during the past month owing to the cool weather. Harvesting in the central part of the State will commence next week. The crop is estimated to yield from 400,000 to 500,000 tons, as compared with 450,000 tons last year.

More than \$1,000,000 worth of raisins were purchased last year from California growers for the soldiers of the allies.

Imperial's Rapid Advance.

The following interesting resume gives the value of the gross agricultural production of Imperial Valley since 1910:

	(No cultivation)
1910.....	\$ 5,000,000
1911.....	12,000,000
1912.....	15,000,000
1913.....	20,000,000
1914.....	20,000,000
1915.....	20,000,000
1916.....	20,000,000
1917 (Estimated).....	30,000,000

If it hasn't this Red Woven Label

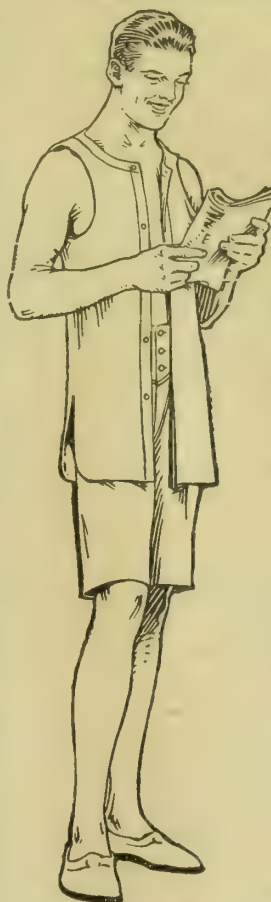
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BEST RETAIL TRADE

(Trade Mark Reg. U. S. Pat. Off. and Foreign Countries)

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FORM the habit of looking for the B.V.D. Label. A Summer of comfort is worth a few seconds of time.

In our own modernly equipped Cotton Mills at Lexington, N. C., the fabric from which these Loose Fitting B. V. D. Undergarments are made, is woven from specially selected cotton. This assures durability in wear and wash.

In our own B. V. D. Factories the garments are skilfully cut, evenly stitched and accurately finished to fit and to be cool and comfortable all day long.

B. V. D. Coat Cut Undershirts and Knee Length Drawers, 50 cents the Garment.
B. V. D. Closed Crotch Union Suits (Pat. U. S. A.) \$1.00 the Suit.

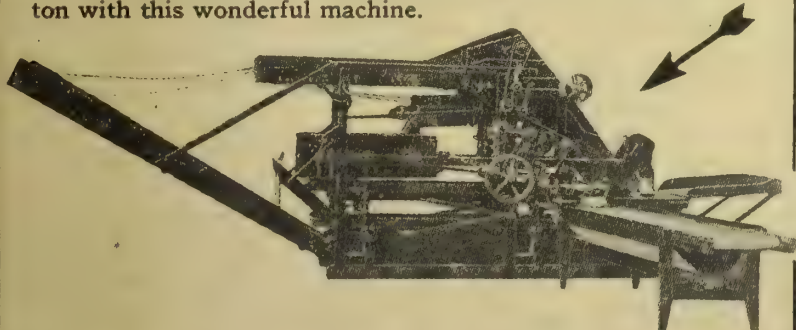
The B. V. D. Company,
New York.



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The B.V.D. Company

Mr. Almond Grower:

You can reduce the cost of your own hulling fully 80 per cent, and hull your neighbors' almonds at a profit of \$20.00 per ton with this wonderful machine.



The Read Almond Huller and Separator

will hull and separate almonds—quick and clean—at a cost of only \$5.00 A-TON.

The hand method costs from \$25 to \$32 a ton.

No wonder one owner says, "it would be impossible to do without it."

Let us send you our literature describing it, and telling what other owners say about it. Would ask that you get your order in early, so that you will not be disappointed in delivery, as we are behind in filling orders in all our departments, and will be for some time to come.

Write now while you think of it. Address,

Schmeiser Manufacturing Co.
12 Mechanic Street Davis, California

The Little Wonder Tractor

ATTACHMENT FOR AUTOMOBILES

This tractor attached to any automobile makes the most economical means of doing your work on the ranch. It is light, but strong, and has plenty of traction for ordinary working conditions. 40 x 11 wheels. Gear ratio, 11 1/2 to 1.

\$150.00

F. O. B. Los Angeles



Wm. Gregory & Sons

602 N. Main Street
Los Angeles, Cal.

Agents:—We have some good territory open for this fast seller.

Pig Production and Patriotism.

[Abstract of a paper read at the meeting of the California Swine Breeders' Association at Davis, California, May 30, by F. L. Washburn, President Western Meat Co.]

The unprecedented advance in live hog values has been fully justified by the high prices of grain, the high cost of labor, etc., which, in turn, have justified high values of the most extensively used hog products, viz: hams, bacon and lard. During the period of the advance, buying has been very heavy, both on the part of dealers and consumers. Apparently the wave of domestic buying has run its course to some extent, and on the Pacific Coast, reaction may set in, as high prices seem to be lessening consumption. In fact, the Chicago market of last Monday showed considerable decline, the average cost at Chicago being 15.35, with Missouri River markets on a proportionately low basis. The Western Meat Company is now paying 15½¢ at South San Francisco for hogs of 150 to 300 pounds range, with a premium of 15 cents per cwt. on the live weight for each 1 per cent of yield in excess of 77 per cent. However, we regret to say that the premiums we have paid, especially during the last sixty days, have been few and far between.

UNFINISHED STOCK LEAVING CALIFORNIA.

One of the discouraging features of late has been the comparatively heavy movement out of California of small unfinished hogs and of surplus breeding stock to Northern and Eastern points. These hogs, I dare say, have been purchased at anywhere from 8 to 10¢ per pound, and those fortunate enough to be able to put these hogs into marketable condition will, without doubt, be amply rewarded; for the corn fed to these hogs in the East is the highest priced corn on record and will cost more than barley in California. The exceedingly high price of grain is doubtless responsible for this exodus of hogs; but now that the price of barley has shown a decline, and the new California barley crop is about to become available, it would seem that our hog owners should do everything pos-

sible to keep their young stock as well as their brood sows within the state, as the gains from 2c barley, with the proper supplementary feeds, can hardly help but be profitable. We therefore strongly recommend that all hog raisers who intend feeding stock for the market provide sufficient feed to really put a good finish on the stock which they expect to sell.

GOOD HOGS COMMAND A PREMIUM.

It has been said that there is no inducement to turn out good hogs in California, as the packers pay just as much for the poor hogs as for good ones. We believe that our premium system should largely overcome this objection, and most assuredly so in all cases where we can come into direct touch with the producer. Perhaps some of you have seen the advertising copy which our company has been running in some of the newspapers, and farming periodicals, in which we state that our best grade of hams and bacon, the Mayrose brand, is produced from specially selected hogs, which are grown and finished in California.

Our general sales manager says that it took courage to go before the public and frankly tell them that the grade of our hams and bacon which we had decided to make our top grade, is selected from choice California-grown and fed hogs, instead of from Eastern hogs. It did take courage to do this, and we still have it—viz: the courage of our firm conviction, that the California grain-fed hog makes every bit as good pork as his Eastern corn-fed brother.

GIVE THE CALIFORNIA PIG A CHANCE.

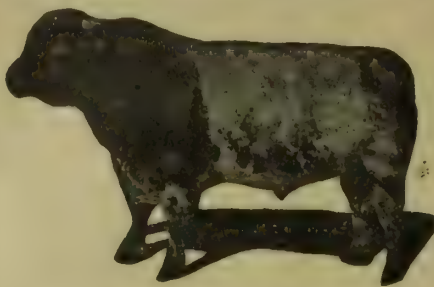
Our slogan in connection with the Mayrose ham and bacon advertising, "Give the California pig a chance," has been fairly well received by dealers and consumers, and we need hardly add here that we look to you hog producers to be the backbone of our support in your own communities. For the success of Mayrose hams and bacon, is primarily the hog raiser's success, as he is the first man to receive the profits made from the marketing of good California hogs under our Mayrose brand.

While we cannot tell an alfalfa finished hog until after he is dead, there is certainly no trouble whatever in doing so at that time; and we will make it our business to see that no cuts from such inferior hogs steal their way into the selected stock which we consider of sufficiently high quality for our Mayrose brand. We look to the hog producers of California to help disabuse the minds of our own people of the old legend that California hams and bacon are inferior to those produced east of the Rocky Mountains. You can do this in no more effective way than by producing hogs which will yield the kind of pork that will prove, by the infallible test of the frying pan, that it is actually as good as the Eastern product.

Eastern hams and bacon in large quantities, continue to reach the

Hillcrest Stock Farm

Shorthorn Cattle, Shropshire and Merino Sheep



King Lancaster, sired by King Edward, grand champion bull State Fairs, 1900-1911.

Shorthorn Bulls for Sale, sired by such noted bulls as King Lancaster, Knights Perfection, Greenwood Knight and Greenwood King. Nearly all offsprings of the famous King Edward.

These Bulls are conceded to be the best offering ever made from the Hillcrest Stock Farm.

For Particulars Apply

T. S. GLIDE

Proprietor
Davis, California

BASSETT'S POLAND CHINAS



For many years at widely separated show rings, under many different judges of varying type ideals, my Poland Chinas have been consistent prize-winners. My herd is large and I cull closely. The animals sent out as breeders are the very tops of a large number. I KNOW that my kind of Poland China is a profitable farmer's hog, for I send carloads of them to the packer every year—uniform in size, high in quality, quickly and economically matured and finished.

Young stock, \$30 Up.
M. BASSETT,
Box 1, Hanford, Cal.

GRAND CHAMPION SOW,
P. P. L. E., 1915; Sacramento, 1916.

SHORTHORNS

Herd headed by Count Glory (426932), Grand Champion California State Fair, 1916. Our herd comprises more Scotch females than any herd on the Coast.

STOCK FOR SALE AT ALL TIMES.

CARRUTHERS FARMS, MAYFIELD, CAL.

City address, Hearst Building, San Francisco, Cal.

Telephone Sutter 1311

BERKSHIRES

This herd won the premier exhibitors' banner at the Panama-Pacific Exposition. This herd contains one of the greatest collections of brood sows in the world. Strong in the blood of Rival's Champions Best.

BULLS = Shorthorns = HEIFERS

REGISTERED AND TUBERCULIN TESTED.

Animals of either sex ready to deliver in car lots or singly.

H. L. & E. H. MURPHY, Perkins, Cal

ORMONDALE SHORTHORNS

Are all heavy boned, and of Scotch and Scotch-topped breeding.

Suited for either the range grower or breeder.

EVERY ANIMAL POSITIVELY GUARANTEED.

Whether you buy or not, visit our ranch, 7 miles from Palo Alto on Woodside Road. We welcome inspection. Prices and pedigrees on application.

SHORTHORN CATTLE ORMONDALE CO. R. D. No. 1
DUROC-JERSEY SWINE REDWOOD CITY, CAL.

REGISTERED SHORTHORNS

REGISTERED BERKSHIRES

HOPLAND STOCK FARM

Hopland, Cal.

RANGE BULLS, BOARS AND GILTS

San Francisco Office,

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Hauser's Digester Tankage

GIVES GREATEST VALUE FOR LEAST MONEY.

IT MAKES THEM FAT.

Hauser Packing Co. Los Angeles

DIGESTER TANKAGE

Send for Sensible folder on feeding hogs

WESTERN MEAT COMPANY

Animal Food Dept.

704 Townsend St.,

San Francisco

Pacific Coast; although we are glad to say that there has been a marked reduction in the amount of hams

Dealers
in
PAPER

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DON'T CUT OUT A Shoe Boil, Capped Hock or Bursitis

FOR

ABSORBINE
TRADE MARK REG. U.S. PAT. OFF.

will reduce them and leave no blemishes. Stops lameness promptly. Does not blister or remove the hair, and horse can be worked. \$2 a bottle delivered. Book 6 M free.

ABSORBINE, JR., for mankind, the antiseptic Uniment for Boils, Bruises, Sores, Swellings, Varicose Veins, Allays Pain and Inflammation. Price \$1 and \$2 a bottle at druggists or delivered. Will tell you more if you write.

W. F. YOUNG, P.D.F., 86 Temple St., Springfield, Mass.

TAM WORTHS

(The Bacon Hog)
Largest Herd in the State

DUROC-JERSEYS

Mature Stock and Weanlings of both sexes. Sure to please.

SWINELAND FARM,

W. O. Pearson, Prop. Woodland, Cal.

REDWOOD TANKS.



35 years in this business. I sell direct to the consumer. You act as your own agent and save 20%. Tanks from 300 gallons to 10,000 gallons in stock. A stock tank 3x2 ft., \$10. For hot climates get my patent tank. Reference: Farmers & Merchants Bank of Stockton. Phone 2957.

B. F. WILSON, Stockton, Cal.

and bacon, and especially of lard, coming here from Eastern packing centers.

A BRAND DESIGNED TO RAISE CALIFORNIA QUALITY.

"More and better hogs,"—with a strong accent on better,—is fully as logical a slogan at this time as when you first heard it, as we still have a long road to travel before we can begin to compare our average quality with that of Eastern packing centers. The mere fact that we are able to select from the general run of our killing a limited quantity of hams and bacon suitable for our Mayrose brand, is ample proof that it can be done.

Since prices on live hogs have advanced, the demand for fresh pork has been practically nil, and Californians will never become extensive consumers of fresh pork until there is more uniformity in the quality from which to produce fresh pork cuts.

It may interest you to know that our hog receipts for the first four months of the current year exceeded those of the same period of last year by 14 per cent, and that they include nothing but California-raised hogs, with the exception of a very few from western Nevada.

PERCENTAGE OF CONDEMNATIONS EXCEEDINGLY LOW.

I have a report covering the condemned carcasses, and parts of carcasses, for the week ending May 19th, at South San Francisco, and you will be surely interested in knowing that out of a total killing of 3,144 hogs, 86 were condemned, 37 of them for sterilization and 49 wholly condemned for inedible grease and fertilizer. This condemnation is only a small fraction less than 3 per cent. During the same period, our losses in condemned cattle were only 2½ per cent. In our sheep killing for the same period, our losses by condemnation were practically nil, being only two carcasses out of more than 5,000 head. It is interesting to note that the percentages of hogs and cattle condemned for tuberculosis run very close together, it being generally conceded that tuberculosis in hogs is directly traceable to the heavy percentage of tubercular dairy stock.

HOG RAISING BOTH PATRIOTIC AND PROFITABLE.

Now that we are under obligations to supply our allies across the sea with such enormous quantities of provisions of all kinds, it is opportune to say that in no other way can the meat production of the country be increased as rapidly as by concentrating on the raising and proper fattening of hogs. It requires from two and a half to three years to produce a prime heavy steer, besides requiring a comparatively heavy investment in land and breeding stock. On the contrary, a hog, when properly fed, can be made to weigh from 200 to 250 pounds in from six to nine months; and bacon, as an army ration, will go further than any other meat product in nutritive and sustaining properties. We, therefore, assure you that the raising of hogs, and particularly of good hogs, is just as patriotic and important an American duty as the production of food in any other form.

SAVING THE PIGS.

At present prices of pork no farmer can afford to so neglect his hogs as to allow any unnecessary loss of young pigs. We have been watching the way a farmer with lots of other farm work has been caring for three brood sows the past month, and hardly a week has passed that he doesn't lose two or more pigs. The reason is that he allows all of his sows to run together, and as there is a difference in the ages of the different litters, the biggest ones get most of the milk from all three sows and the smaller ones do not get enough nourishment to grow. Half a day's work in fixing some fences would overcome this loss and the younger pigs would thrive better.

Shorthorns

Paicines Ranch Co.

Offers for summer and fall delivery both registered and unregistered weanling bull and heifer calves.

For prices and particulars apply to

DAVID J. STOLLERY

320 Sharon Bldg.

San Francisco, California

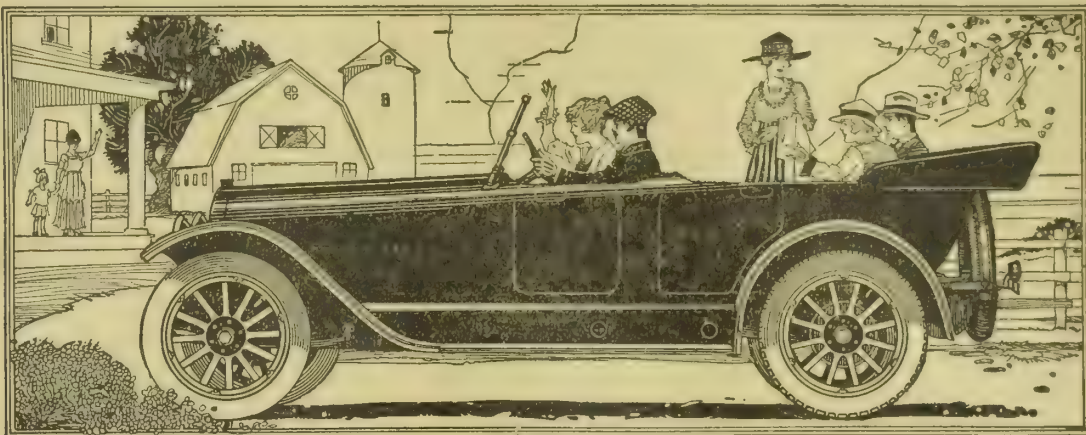


TO SACRAMENTO

Fast electric trains leave San Francisco every 2 hours during the day. One way fare \$2.50. Week end round trip \$3.35. Sunday round trip \$2.50. Convenient and comfortable electric train service from Bay Cities to Sacramento Valley points, including Woodland, Marysville, Oroville, Colusa, Gridley and Chico.

Oakland, Antioch & Eastern Railway

San Francisco Depot, Key Route Ferry. Phone Sutter 2339.



This Rugged Car Has Twice the Needed Strength

John W. Bate, in the past three years, has doubled our margins of safety. Now every important part in Mitchells has 100 per cent over-strength.

This means better steel. It means larger parts. In these times it means much added cost. But it also means a lifetime car. It means a safe, economical car. A car which has proved that it can run 200,000 miles. That means 40 years of ordinary service.

Millions in Extras

There are also 31 features in Mitchells which nearly all cars omit. Things like a power tire pump, for instance.

There is 24 per cent greater luxury than in any other car in its class.

These extras will cost us on this year's output about \$4,000,000. That is, for this over-strength, these extra features and this added beauty.

All Free to You

But all this added value costs you no extra price. Note that Mitchell prices, for either size, are below most fine-car prices.

We save in our factory cost. This mam-

moth plant has been built and equipped to produce this one type economically. John W. Bate, the efficiency expert, has cut our factory cost in two. Even the Mitchell bodies are built here, under these up-to-date methods.

That saving pays for these extras. We save all waste, and spend that saving on a superlative car.

Please see that car. See how it differs from other cars you know. Note its many unique attractions. You should know these things before you buy a car.

If you do not know the nearest Mitchell dealer, ask us for his name.

MITCHELL MOTORS COMPANY, Inc.
Racine, Wis., U. S. A.

Mitchell

—a roomy, 7-passenger Six, with 127-inch wheelbase and a highly developed 48-horsepower motor.

\$1460

F. O. B. Racine

Mitchell
SIXES

Mitchell Junior

—a 5-passenger Six on similar lines, with 120-inch wheelbase and a 40-horsepower motor. ¼-inch smaller bore.

\$1195

F. O. B. Racine

Four-Passenger Roadster, \$1495—Sedan, \$2175—Cabriolet, \$1895—Coupe, \$1995—Also Town Car and Limousine.

Live Stock and Dairy Notes

Livestock breeders all over the State are invited to send on postal cards, notes regarding their sales, State and County Fair intentions, new stock, etc.

The Dairy.

N. H. Locke Company recently sold to R. E. Watson, Modesto, a fine Jersey bull, Lily's Governor Valet of L.

The bulls admitted to the Guernsey Herd Register now number 43,625 and the cows 72,614, a total of 116,239.

The Nicolaisen Cheese Company has leased the stock and appurtenances of the John R. Denman ranch near Petaluma and also a ranch owned by Denman at Two Rock.

The holdings of butter in cold storage in Los Angeles May 10, 1917, were 76,518 pounds against 16,728 pounds the same date last year, an increase of 59,850 pounds.

There was in cold storage in Los Angeles May 17, 1917, 95,508 pounds of butter against 46,332 pounds the same date last year, an increase of 49,276 pounds.

Directors of the Chicago Butter and Egg Board have prohibited further trading in futures, giving as a reason their desire to help the government as patriotic citizens.

The American National Livestock Association has passed resolutions to co-operate most effectively with the President of the United States and Congress in the movement to increase production.

Former Governor George A. Carlson of Colorado, who has been touring the State lecturing on "Preparedness," milked the famous Tilly Alcarra at the Morris & Sons dairy ranch, near Woodland, recently.

Mr. J. W. Clise of Redmond, Wash., writes that he has filled an order for a carload of 25 young Ayrshire bulls, and the same number of Ayrshire heifers. These were shipped to another State taking possession of an untired and promising field for Ayrshires.

W. M. Colbert & Sons of Corning recently bought, through McLouth of Orland the purebred Jersey bull that has been heading John A. Lee's herd in Kentucky. This bull's mother averaged 45 pounds milk daily for 125 days, with a high mark of 57 pounds. Her milk tested 5.3 on the average.

The high scores on cheese at the California educational butter and cheese scoring contest, held at Fresno May 2, were as follows: Cheddar—Arthur Schoenrock, White & Terry Cheese Factory, Galt, 93½; California (Granular), Ray Weedmark, University Farm, Davis, 93; Jack, C. Basciarini, 92½.

Cold storage holdings of butter on May 9, 1917, as reported to the U. S. Department of Agriculture, are as follows: The 211 storages that reported holdings on May 1 of this year and last show a present stock of 2,433,144 pounds as compared with 1,081,913 pounds last year, representing a considerable increase.

Colonel Harris Weinstock, State Market Director, proposes making California the greatest dairy center in the world. The survey just made shows that the production of dairy products in California for 1916 amounted to \$40,310,105; the consumption to \$37,774,694, leaving a surplus for exportation of \$2,535,411.

Because Swiss cattle owners are not able to obtain oil cakes from Spain and America and the import of other fodder has also been practically cut off, the milk production has been enormously reduced. Butter has become so scarce that no family can obtain more than half a

pound per week, and the prices have increased from three to four hundred per cent.

Estimates of losses of livestock during 1917 expressed in percentage of total supply, based upon reports of agents and correspondents of the Bureau of Crop Estimates, United States Department of Agriculture, are as follows up to April 1: Horses and mules, losses from disease 1.69; Cattle all ages, losses from disease 1.94, losses from exposure 1.45; sheep, losses from disease 2.17, losses from exposure 3.28; lambs, losses from disease and exposure 6.03; swine all ages, losses from disease 4.87.

Belladia 31909, owned by Walter H. Dupee, Edgemoor Farm, Santee, Cal., has completed a record of 19631.9 pounds of milk and 934.05 pounds of butterfat in one year. This performance entitles her to seventh place in the aged cow group of the Class Leaders in the production of butterfat, and fifth place in the production of milk. Another good Pacific Coast record has been made on this farm. Imp. Mildred II. of les Godaines 55120 A. R. 4111 has recently finished a test of 14890.9 pounds of milk and 702.24 pounds of butterfat. She was first prize four-year-old cow at the Panama-Pacific Exposition in 1915, and was bred by Charles R. Molesworth, Island of Guernsey. Her sire is Imp. Old Paddy 16903 an Advanced Register son of Governor of the Chene 1297 P. S. and Imp. Gistana II 21338. Her dam is Petite of Park Farm 2920 F. S.

Beef Cattle.

Walter Fry, supervisor in charge of Sequoia National Park, says there will be 25 per cent more cattle grazed in the park this year than last.

Fires in the forests, the grass and brush lands and the grain fields, such as occur annually in our California dry season, cause a loss of grain, of forage for cattle and which enlist the co-operation of every loyal citizen to prevent.

The Pacific Coast Hereford Breeders completed their organization at the University Farm, Davis, last week. Constitution and by-laws were adopted. An initiation fee of \$10 and yearly due of \$5 were established and the following officers elected: President, H. H. Gable, Esparto; vice-president, W. D. Duke, Likely; secretary, W. R. Madden, Dixon.

Brawley is to have a stock yards. Seven acres near the Southern Pacific tracks are being enclosed and laid off in pens for holding and feeding livestock waiting for shipment and stock scales put in for weighing. Accommodations will be had for 1,000 hogs. The yards will be under the management of R. N. Miller, who is financing the enterprise.

Swine and Swinemen.

Frederick Johnson, Napa, reports Duroc sale as follows: Bred sow to Dr. Spencer, Sacramento; boar to L. R. Adams, Trinity county.

Haden Smith reports sale of yearling boar to Chas. Van Bonivelt, Orland, and a bred gilt to Chas. Van Orsdel of Orland.

Sheep.

Sheep and lambs are getting to be more plentiful in the proper killing condition, according to meat dealers.

Owing to the wretched weather conditions in Scotland the mortality amongst lambs has not been so great for fifty years before.

The sheep cheese industry of western Yolo county is growing rapidly and the demand for the product is showing a steady increase, according to the Santa Rosa Republican.

The price paid in April by the United States government for woolen fabrics was 50 per cent higher than paid for the same material in December, 1916. The government is taking practically all the wool that is produced and converting it into cloth for soldiers' uniforms and blankets.

Horses.

The popularity of the Percheron sire, has steadily increased in spite of the competition of other breeds. The breed that has won high favor with American farmers after 60 years of trial.

At the meeting of draft horse men held at Davis last week, a resolution was passed asking for the enforcement of the Stallion Registration law. It was the consensus of opinion that the purebred draft horse industry presented a fine opportunity for breeders at this time. The association will aid in the holding of horse shows over the state this fall.

Livestock Miscellaneous.

The largest number of sheep grazed on any single National Forest is 315,740, finding pasturage on the Humboldt in Nevada, while the largest number of cattle—75,818 head—is found on the Tonto in Arizona.

The land holdings of the Henry Miller (Miller & Lux) estate in Merced, Fresno, Madera and Stanislaus counties, and the personal property in Merced county, aggregates an appraised value of between \$9,000,000 and \$10,000,000.

On February 20, 1917, a special census was taken of the livestock in the Kingdom of Denmark. The number of horses and colts is set at 538,000, as against 515,000 at the same period last year. There were 2,453,000 head of cattle, as compared with 2,290,000 the previous year. The number of swine is reported as 1,981,000, while in the spring of 1916 the total was 1,983,000. Sheep and lambs totaled 270,000, as against 254,000 last year.

Interesting Holstein Meeting.

A meeting of Holstein breeders was held at Chico Tuesday evening, at which three important ideas were brought to the front.

Vanderlyn Stowe made the announcement that lands of the Stanford ranch at Vina would be placed under irrigation, houses and other improvements built to be rented out for a term of years to tenants. While the Stanford trustees feel they cannot at this time sell off parts of the ranch, yet by securing tenants for small tracts they will be making places for many people to get a start on the land.

E. H. Van Norman of the State Farm impressed the breeders with the necessity of co-operative association action in getting purebred bulls into the hands of new breeders and young breeders. Also that constructive breeding means more than getting a seven-day test. The cow that can produce the most milk and but-

terfat in 365 days is the cow that pays when feed is high.

State Veterinarian Charles Keane read an address, taking up the question of tuberculosis-free herds. This movement has been under way in twelve other States for several years. The doctor is anxious to hear from breeders upon this subject. He stated there were several purebred and hundreds of grade herds in California that are tuberculosis free, and would be eligible to be included in such register. His idea is to have two classes, one of older animals and one junior class, that would be certified free from tuberculosis. The advantages are many, especially to the purebreds—one being that if cattle were sold they could be moved from their locality without testing and delay.

Calif. Jersey Breeders' Association Meeting.

The meeting at Davis of the California Jersey Breeders' Association occurred May 30. Vice-president D. F. Conant filled the chair. Mr. E. L. Brewer, field agent state of Washington, American Jersey Cattle Club, spoke on the "Feeding of Register of Merit Cows." Dean H. E. Van Norman, of the University Farm School, talked on different topics of the day; Prof. Gordon H. True, on the "Importance of Official Records"; Prof. F. W. Woll, on the "Dairy Cow Competition and Testing"; Mr. E. C. Voorhies, on "Fair Conditions"; Mr. Guy H. Miller, on "Exhibiting at the Fairs"; Mr. J. M. Roberts, field agent in California, on the "Organization of Community Breeders' Associations and Their Relation to the State Organization."

Meeting of California Swine Breeders.

At the meeting of the California Swine Breeders at Davis last week C. C. Cunningham was unanimously re-elected president, Prof. Thompson secretary and treasurer, and W. W. Everett was elected vice-president. The following additional directors were elected: A. D. McCarty, W. S. Guilford, H. L. Murphy, C. M. Slocum, R. H. Whitten and Mark Bassett. It was decided to hold a donation sale of hogs in order to raise funds for the association. The following committee was appointed to get up the sale: H. E. Richardson, Wm. Pearson, R. L. Robinson, Geo. Murphy, Wm. Bernstein, Maurice Rucker and C. L. Tubbs.

Vina Ranch Sale Opens Well.

The first day of the Vina Ranch sale of Holsteins, held June 5, was quite successful and at this writing the other two days promise to be equally as good. A crowd of about two hundred were in attendance and the bidding lively. Ten heifer calves were sold for a total of \$905; 44 heifers totaled \$8,595; 26 cows sold for \$6,210; 20 bulls, mostly under one year, brought \$1,750.

The highest price paid on this first day of the sale was for a cow, bid in by G. H. Umbesen of San Francisco, who paid \$625. The cow will be placed on Mr. Umbesen's ranch at Anderson.

Our Spring Pigs Are Mighty Good Buys

We have for sale a limited number of specially selected spring pigs, sired by Mayhews Leader 6th, a son of the \$3,000 Grand Champion of the World, Grand Leader 2nd.

These pigs are well developed and are excellent value at their prices. All are cholera immune. The guarantee of Anchorage Farm is behind every pig.

Write today for full information to

ANCHORAGE FARM,
ORLAND, CALIFORNIA.

Home of STAR LEADER,
Premier Berkshire Boar of the
Pacific Coast.



RHOADES & RHOADES

Expert Live Stock Auctioneers.

Purebred Stock Sales a Specialty

Sales Conducted in All Parts of Calif.

Ben A. Rhoades, Auctioneer

1501-3-5 So. Main St., Los Angeles, Cal.

THE SACRAMENTO HOLSTEIN SALE.

There was a light attendance of breeders and dairymen at the Sacramento Holstein sale and some of the cattle showed effects of the high price of feed, not being in condition to bring the best prices in the auction ring. The general average for 64 head was \$235. Bulls averaged \$264. Cows and heifers, \$230. The top price, \$1,400, was paid by Gion W. Gibson for a yearling heifer consigned by Bridgford Company. The highest price bull was Manteca Gelsche Segis Lyons, consigned by the Henderson Company, and bid in at \$460 by C. C. Lester, Gilroy. Rhoades & Rhoades were auctioneers. An excellent free lunch was served. The following were the buyers: Gion W. Gibson, Williams; Gotshall and Magruder, Ripon; J. H. Phillips, Fresno; W. F. Calhoun, Healdsburg; Napa Hospital; Boneta Stock Farm, Woodbridge; J. K. Yoakum, Woodlake; Geo. P. Robinson and E. J. Weldon, Sacramento; Geo. Kounias, Modesto; R. C. Geulkim and A. C. Holly, Dixon; C. C. Lester, Gilroy; H. E. Cornwell, Modesto, and Kaiser Bros., Ceres.

The consignment of the Bridgford Company consisting of nine heifers and two bulls brought \$4,875, an average of \$443 per head. Spring Farm Cornucopia Ormsby, who topped the sale at \$1,400, is probably the best bred animal that ever went through a sales ring in California. Her dam, put on test immediately after arriving in California from the East, made a record of 31.87 pounds, while her sire's dam is a former world's champion, with a record of 44.18 pounds. At the close of the sale Gotshall and Magruder secured this heifer from Gion W. Gibson, the successful bidder, giving him a substantial profit on his bargain. Another splendid heifer of the Bridgford consignment, sired by King Korndyke Sadie Vale, went to Gotshall and Magruder for \$600. They bought in all nine head, including the bull Pride Fayne Valdessa, a grandson of King Hengeveld Aagie Fayne, and of the world's record cow Finderne Pride Johanna Rue, consigned by Palo Alto Stock Farm.

Another large buyer at the sale was J. E. Scholefield, manager of the Boneta Stock Farm, who is establishing a purebred herd at Woodbridge. He secured 15 females and a young son of Judge Lyons, consigned by Henderson Company.

George C. Kounias of Modesto bought three head, including the young bull Toyon King Korndyke Soldine, a grandson of King Pontiac Segis Korndyke and out of a dam with a record of 33.28 pounds.

W. H. Calhoun, who is building up a fine dairy herd at Healdsburg, secured a son of Prince Gelsche Walker out of a 25 pound dam consigned by the Bridgford Company.

Kaiser Bros., who are establishing a purebred herd at Ceres, bought eight head.

LIVESTOCK DIRECTORY.

Rates in this directory, 3c per word each issue; or if carried weekly for one year, 2 1/2c per word.

SWINE.

Poland-Chinas.

MAKE BIG MONEY with our famous Whitten Ranch Big Type Poland-Chinas. Prolific breeders and profitable feeders. Grow rapidly, fatten quickly. Top the market at 225 lbs. in six months. Make greatest profit for feed consumed. Prices reasonable; satisfaction guaranteed. Send for free illustrated book, "Hogs for Profit." Finest ever issued. Packed with valuable information; tells how to become successful. Ranch in Tulare county, but address owner, R. H. Whitten, 610A Security Building, Los Angeles.

FOR SALE—Nice lot of young purebred Poland-Chinas; young boars ready for service; nice lot of young gilts soon ready to breed; weanlings of either sex; sired by Joker, Iowa Wonder and Sunnydale's Chief. For prices and further information write Geo. A. Smith, Corcoran, California.

BOARS of serviceable age all sold. We have a few choice gilts bred to John Henry, an exceedingly choice boar. Also have a fine lot of fall pigs, either sex. Bar N Ranch, E. A. Noyes & Son, props., Sutter, Calif.

REGISTERED POLAND-CHINAS—Young boars ready for service. Weanling pigs, both sexes. Prices attractive for quick sales. J. H. Cook, Paradise, Cal.

CRAWSHAW'S CALIFORNIA CHINAS are prolific and profitable. Can fill your order for weanlings, either sex, for \$15.00 each. J. A. Crawshaw, Hanford, Cal.

LAKEVIEW STOCK FARM POLAND-CHINAS are money-makers. Satisfaction or money refunded. Geo. V. Beckman & Sons, Lodi, Cal.

NOW BOOKING ORDERS for spring pigs, either sex, from my prize-winning, large type Poland-China hogs. H. I. Marsh, Modesto, Cal.

POLAND-CHINAS—Big type combined with quality. Choice bred sows, gilts, boars. W. L. Irenwhit, Box 524, Hanford, Cal.

REGISTERED POLAND-CHINA SWINE—Prize winners. Finest stock in the state. 300 up. M. Bassett, Hanford, Cal.

POLAND-CHINA HOGS—Large type. 200 lbs. in 6 months. 1 guarantee to please you. U. L. Luna, Lumbury, Modesto, Cal.

BIG-TYPE POLAND-CHINAS—Stock from the best herds of the Middle West. N. Hauck, Alton, Humboldt county, Cal.

REGISTERED POLAND-CHINAS and Duroc-Jerseys. Cholera immune for life. T. H. Beckman, Lodi, Cal.

POLAND-CHINAS—Three extra fine boars, one large and two medium type. W. Bernstein, Hanford, Cal.

POLAND-CHINAS—Large type. The Browning Stock Farm. W. H. Browning, Woodland, Cal.

POLAND-CHINAS—A few gilts left at \$15 each. Edward A. Hall, R. F. D. 1, Watsonville, Cal.

REGISTERED POLAND-CHINAS—J. H. Hansborough, Route 4, Modesto, Cal.

BEAUVAS RANCH herd of registered Poland-Chinas. W. J. Hanna, Gilroy.

Berkshires.

GRAPEWILD FARM BERKSHIRES—World's Fair Grand Champion Grand Leader 2nd heads our herd, not only himself a champion, but the sire of Champions. At the 1916 California State fair his daughters won first in all of the senior sow classes, including the Grand Champion Sow. At the 1916 Oregon State Fair a Grand Leader sow was Junior Champion. We are offering a number of choice boars of exceptional breeding and are also booking orders for fall pigs. A. B. Humphrey, Escalon, San Joaquin Co., Cal.

BERKSHIRES sired by Mayhew's Leader 10th, one of outstanding sows of Champion, Grand Leader 2nd. Weaned pigs, \$15 each. They are dandies. Heavy boned kind that will grow into large hogs. Dallas Bache, Hollister, Cal.

REGISTERED BERKSHIRES—Progeny of Improver B. Young stock now ready for sale. Start your herd with breed and strain of established reputation for California conditions. Geo. G. Meckfessel, Berlin, Cal.

BERKSHIRES—I have one of the best herds on the Pacific Coast, including Grand Champion Sow, Reserve Grand Champion Boar under one year, Third Aged Boar, etc. Frank A. Brush, Santa Rosa, Cal.

EFFICIENCY FIRST BERKSHIRES—Ten firsts, all champions Nevada State Fair, 1916. Laurel Champion and Grand Leader breeding; any age. Joseph Wilson, Jr., Mason, Nevada.

IMMUNIZED NORMANDY BERKSHIRES—Good type. Breeding stock, any age, for sale at all times. Cast iron guarantee. Arlington Smith, Visalia, Cal.

ROSE CREST BERKSHIRES—Rivals Champion Best Boar. Open and bred gilts. Service boars. F. L. Hall, Ferris, Cal.

CARRUTHERS FARMS BERKSHIRES—Cholera immune. Second annual sale August 2, 1917. Mayfield, Cal.

REGISTERED BERKSHIRES—Young stock for sale sired by a first prize son of Laurel Champion; prices right. Imperial Stock Farm, Morgan Hill, Cal.

MODEL HERD BERKSHIRES—Bred for size and quality. Weanlings and gilts. J. L. Gish, Laws, Cal.

HOPLAND STOCK FARM—Registered Berkshires. Prices on application. Hopland, Cal.

REGISTERED BERKSHIRES—Geo. M. York, Modesto, Cal.

BERKSHIRES—Fair Oaks Ranch, Willits, Cal.

Duroc-Jerseys.

FIRST PRIZE HERD—Comprising the three most noted families of the breed: Golden Model, Crimson Wonder and Colonel. Offering line bred show winners and show prospects in each family as good as can be found in United States. Also weaned pigs. Seeing is believing. It will pay you to investigate this offer. Haden Smith, Woodland.

RANCHO RUBIO DUROCS—Only a few September gilts left. One coking good fall boar by Orion Model, son of the last International Grand Champion. Place your orders now for weaned boar pigs. Best I ever raised. Elmer Lamb, Ceres, Cal.

DUROC-JERSEY WEANLINGS—Either sex; World's Grand Champion stock, registered, \$25 each. This is your opportunity to get started right. Rosenberg Co., Haywards, Cal.

REGISTERED DUROC-JERSEYS—Service boars from prize-winning stock are money-makers. They grow faster. New England California Corporation, Ripon, Cal.

DUROC-JERSEYS—Herd boars. E. N.'s Colonel and Tulare Boy. Sweepstakes winner at Fresno, 1915. Choice breeding stock. J. P. Walker, Visalia.

MOST MONEY IN DUROC-JERSEYS—Bred sows and weanlings, either sex, at all times. Delta Farm and Live Stock Co., Colton, Cal.

REGISTERED DUROCS of guaranteed breeding. All ages. Weaned pigs, \$10. H. E. Boudier & Son, Napa.

HEAVY BONED DUROCS—A few service boars for sale. Ormondale Co., Route 1, Redwood City, Cal.

REGISTERED DUROCS—Crimson Wonder stock. Young stock, both sexes. L. D. Collins, Denair, Cal.

REGISTERED DUROC-JERSEY SWINE—Both sexes. Big-boned type. B. F. Kendall, Hardwick.

REGISTERED DUROC-JERSEYS—S. S. Southworth, Napa.

CROLEY'S BALANCED HOG FEED—The cheapest feed to fatten hogs. Write Geo. H. Croley Co., Inc., Live Stock Supplies, 631-637 Brannan st., San Francisco.

WINTON DUROC-JERSEY FARM, Winton, Cal.—High-class purebred hogs, both sexes, any age.

BIG-TYPE DUROCS—Quick maturing. Easy keeping. Frederick M. Johnson, Napa, Cal.

DOS HERMANOS REGISTERED DUROCS—Duveneck & Pickersgill, Ukiah, Cal.

DUROC-JERSEY REGISTERED HOGS—River Bend Farm, St. Helena, Cal.

REGISTERED DUROCS—Either sex at all times. W. P. Harkey, Gridley, Cal.

THE DEVILBESS HERD of large type Durocs. J. M. DeVillbess, Patterson, Calif.

Yorkshires.

LARGE YORKSHIRES—The ideal hog for the progressive farmer. Young stock for sale. A. L. Tubbs Co., Calistoga, Cal.

LARGE YORKSHIRES—A few choice young boars and gilts for sale. Riverina Farm, Modesto, Cal.

Chester Whites.

THE BILLIKEN HERD of Chester Whites—Every rancher, every fruit grower, every one who can possibly do so, should keep at least one brood sow; we must increase our meat supply. I am offering some bred gilts and sows at very reasonable prices to help this along. 2 young tested sows to farrow in July; 6 spring gilts to farrow in September; 18 fall gilts to farrow in October; boars ready for service; weaned pigs, both sexes, ready for delivery. Write for special price lists and circulars. C. B. Cunningham, Mills, California.

REGISTERED IMPROVED CHESTER WHITES—Grizzly Bear Ranch, East Auburn, Cal.

Essex.

LITTLE BLACK ESSEX—New crop nearly ripe. A few fine youngsters left. L. W. Millsap, Yolo, Cal.

Hampshires.

BELA VISTA HAMPSHIRE—Service boars and bred or open gilts. J. W. Henderson, First National, Berkeley.

Tamworths.

BEAVER LODGE TAMWORTH—Service boars. Write for prices and pedigrees. A. G. Lane, Amsterdam, Cal.

DAIRY CATTLE.

Holsteins.

PRINCE GELSCHKE AAGIE WALKER, the pure-bred registered Holstein bull, weighing nearly 2000 lbs. at the age of 3 years. He is sired by Prince Gelschke Walker, the famous bull that sold for \$12,500, and whose daughters, Miss Valley Mead De Kol Walker, Lady Hisky Walker, and others, are the champions of California at the present time in their respective ages, producing from 34 to 36 lbs. butter in seven days. As we have sold out our dairy cows, we are prepared to sacrifice this young giant for a very small sum. For details write The Beckstead Mercantile Co., Fallon, Nevada.

FOR SALE—From 1 to 70 extra fine, straight well-marked, light-colored, registered Holstein heifers, from 8 to 20 months old. Those old enough are being bred to a first-prize son of Prince Gelschke Walker, whose dam has a high yearly record. Some of these heifers are sired by bulls whose dams have from 35 to 37 pound records. They carry the very best blood of the breed and are good enough for any herd anywhere. Prices to fit any pocketbook. Geo. A. Smith, Corcoran, Cal.

GRANDSONS OF HENGVELD DE KOL and out of A. B. O. cows for sale. Prices reasonable. Write for pedigrees. Many years of constructive breeding has made my herd one of the prominent ones of the San Joaquin Valley. R. F. Guerin, Visalia, Cal.

REGISTERED HOLSTEINS—Grandsons of King Segis and of world's record cow Creamella Vale. Will build up the production and value of your herd. Write or call and see them. F. H. Stenzel, San Lorenzo, Cal.

FOR SALE—Two registered cows, one with record of 24.59. Sister to other one made 23.10 as a two-year-old. Both bred to a 30-lb. sire. Geo. Kounias, Modesto.

TULARE GUERNSEY AND HOLSTEIN Farm is offering young bulls of both breeds. Excellent breeding. Prices reasonable. W. J. Higdon, Tulare, Cal.

THE MCCLLOUD RIVER LUMBER CO., McCloud, Cal.—High-class thoroughbred Holstein bulls for sale. Write for prices and pedigrees.

J. H. HALLAN, WOODLAND, CAL.—Breeder of Registered Holsteins. Sold out at present. Watch for announcement on King Valdessa.

PACKWOOD FARM HOLSTEINS—Fine young bulls of serviceable age out of tested A. B. O. cows. W. F. Mitchell, Visalia.

TWO SERVICEABLE SONS of Colantha Sir Pontiac Aagie for sale. Moorland Farm, K. W. Abbott, Milpitas, Cal.

THE HENDERSON CO.—Breeders and Importers. Registered Holsteins. Sacramento Bank Bldg., Sacramento.

BREEDERS OF REGISTERED HOLSTEIN cattle and Berkshire pigs. Whittier State School, Whittier, Cal.

REGISTERED HOLSTEINS—A. W. Morris & Sons, Corp., Importers and Breeders, Woodland, Cal.

CREAMCUP HERD—Registered Holsteins; Pontiac bull calves. M. Holdridge, Modesto, Cal.

REGISTERED HOLSTEIN BULLS, \$50 to \$150. Glorietta Stock Farm, Woodland, Cal.

BREEDERS OF REGISTERED HOLSTEIN Cattle—McAlister & Sons, Chico, Cal.

GOTSCHALL & MAGRUDER—Breeders of Registered Holstein-Friesians. Ripon, Cal.

CHOICE HOLSTEIN bulls for sale. No females. Milbrae Dairy, Milbrae, Cal.

REGISTERED HOLSTEIN BULLS for sale. C. L. Morse, Route B, Modesto, Cal.

REGISTERED HOLSTEIN-FRIESIAN CATTLE—J. M. Campbell, Escalon, Cal.

REGISTERED HOLSTEIN BULLS for sale. Sunnybrook Ranch, Willits, Cal.

REGISTERED HOLSTEIN CATTLE—E. E. Freeman, Route B, Modesto, Cal.

BREEDER OF HOLSTEIN-FRIESIAN CATTLE—Dr. Ben Stetson, Napa, Cal.

A. R. O. HERD OF HOLSTEINS—Alex Whaley, Tulare, Calif.

Jerseys.

N. H. LOCKE CO., LOCKEFORD, CAL.—Jerseys. Bull No. 432, born Dec. 2, 1915; sire, King's Vale; dam, Derrien's Lassie of L. She produced 604.6 lbs. fat in 351 days at 4 years. Price, \$200. Bull No. 491, Oct. 20, 1916. King's Vale-Sunshine of L. 56.9 lbs. fat third month. Price, \$100. Records made under dairy conditions at a profit. Service bulls and bull calves with profitable production backing. Prices, \$50 and up. Poland-Chinas boar Big Wonder, over 400 lbs., a good breeder, \$50. Chester White Swine—Boars and gilts.

BREEDER OF REGISTERED JERSEY CATTLE—Duroc Swine. Young stock for sale. W. J. Hackett, Ceres, Cal.

JERSEY BULLS from Register of Merit cows. C. D. Hayworth, Modesto, Cal.

VENADERA HERD OF JERSEYS offers calves from Register of Merit cows with official yearly records. Write for list of bulls. Guy H. Miller, Route 1, Modesto, Cal.

JERSEY BULLS—Sons of Gertie's Lad and Gertie's Son's Victor. A. A. Jenkins, Tulare, Cal.

YOUNG REGISTERED JERSEY BULL Calves at reasonable prices. O. J. Ames, Oakdale.

CHOICE REGISTERED JERSEY FEMALES—Fresh and Springers. Breeding and individuality the very best. McLeuth, Orland, Cal.

REGISTERED JERSEYS—Young bulls and bull calves. T. B. Purvine, Petaluma, Cal.

Guernseys.

PACIFIC GUERNSEY HERD—Cattle selected from the best imported and Advanced Register Stock. Now offering choice bulls. C. S. Rasmussen, Lodi, Cal.

EDGEMOOR FARM GUERNSEYS—First in the show ring and in official records. Few animals of either sex for sale. Edgemoor Farm, Santee, Cal.

REGISTERED GUERNSEY BULL—No 24342 from A. R. and imported stock. Write for prices and pedigree. A. G. Lane, Amsterdam, Cal.

BELLA VISTA GUERNSEYS—Males from A. R. dams, \$125 and up. J. W. Henderson, First National, Berkeley.

FOR SALE—Guernsey bull, 8 months old; Lord Kitchener and Violet's Pride of Iowa blood. F. A. Zane, Redwood City, R. F. D.

Ayrshires.

PLEASANT VALLEY AYRSHIRE FARM—Registered bulls for sale. Write for prices. Sullivan Investment Co., 1942 Folsom street, San Francisco.

AYRSHIRES—Registered—75 head. All ages. Young stock for sale. Le Baron Estate Co., Valley Ford, Cal.

FAIRVIEW AYRSHIRES AND DURHAMS—Bred for quality. Choice young stock. Geo. Fay, Sheridan, Nevada.

AYRSHIRES—Registered; all ages. E. B. McFarland, 412 Claus Spreckels Bldg., San Francisco.

BEEF CATTLE.

SCOTCH AND SCOTCH-TOPPED SHORTHORNS—We have the largest herd of straight Scotch cows in California. Foundation stock of both sexes for sale; also a choice lot of range bulls. Barco Ranch, Hollister, Cal.

D. O. LIVELY STOCK FARM, INC., 210 Hobart Bldg., San Francisco, breeders of Hereford cattle. A few choice heifers for sale. We buy and sell livestock on commission. Farm at Mayfield, Cal.

REGISTERED YEARLING SHORTHORN Bulls—Heavy-boned, thick-necked Scotch and Scotch-topped breeding. Ormondale Co., Route 1, Redwood City, Cal.

BREEDERS OF REGISTERED SHORTHORNS—Milk strain. Choice young stock for sale. John Lynch Ranch, Box 321, Petaluma.

REGISTERED AND UNREGISTERED—Shorthorn bulls for sale. Pacemes Ranch Co., 320 Shrapnel Bldg., San Francisco.

SPRINGDALE STOCK FARM—Choice Shorthorns, bred for size and quality. W. C. Short, Reno, Nevada.

INNISFAIR DAIRY SHORTHORNS—Registered young bulls for sale. Alexander & Kellogg, Suisun, Cal.

HOPLAND STOCK FARM—Registered Shorthorns. Prices on application. Hopland, Cal.

REGISTERED HEREFORDS—H. H. Gable, Diamond G Ranch, Esparto, Cal.

SIMON NEWMAN CO., Breeders of Registered Herefords, Newman, Cal.

GEORGE WATTERSON—Breeder registered Herefords. Bishop, Cal.

SHORTHORNS—Carruthers Farms, Mayfield, Cal.

SHORTHORNS—Fair Oaks Ranch, Willits, Cal.

SHEEP AND GOATS.

D. E. KELLIHER, importer and breeder of Hampshire sheep, Eugene, California, offers for sale a choice lot of Hampshire Ram Lambs, sired by Walnut Hall and Butterfield; rams purchased at Salt Lake, August, 1916; lambs ready for delivery after July 15, 1917. Inspection and correspondence invited.

F. A. MECHAM ESTATE, Petaluma, Cal.—Breeders and Importers of Shropshire, Rambouillet and American Merinos, both sexes. Also Red Polled cattle. Take electric car at Petaluma or Santa Rosa for Live Oak Ranch.

KAUFKE BROS., WOODLAND, CAL.—Breeders and Importers of Hampshire sheep.

DOBSETS AND ROMNEYS—Dorset ram lambs for sale. John E. Marble, Los Angeles.

BISHOP BROS., SAN RAMON, CAL.—Breeders and Importers Shropshires.

CHAS. KIMBLE—Breeder and Importer of Rambouillets. Hanford, Cal.

HORSES AND MULES.

HORSES—For sale, 3 and 4-year-old Percherons. Broke and matched, \$250 to \$300 per span. S. L. Skaggs, Madera, Cal.

REGISTERED PERCHERONS—Herd stud, first prize, Reserve Champion, P. P. I. E., 1915. John Matley, Reno, Nevada.

REGISTERED SHIRES—Black Hawk Stock Farm, Importers and Breeders. Easton & Ward, proprietors, Burlingame, Cal.

MISCELLANEOUS.

FOR SALE—Dairy of choice cows, two to four years old. Full blood unregistered Holstein and Jerseys, all milking. Also full blood Holstein bull, weight 2,000. R. S. Burrough, Cloverdale, Cal.

CROLEY'S BALANCED DAIRY FEED—The cheap milk producer. Write for Catalogue. The best California calf raiser Geo. H. Croley Co., Inc., 631-637 Brannan st., San Francisco.

BUTTE CITY RANCH—Shorthorns, Shropshires, Cholera Immune Berkshires and Ponies. Special offerings of sows, pigs and bulls. Butte City Ranch, Box P, Butte City, Glenn Co., Cal.

FEED, FREE RANGE, State Government land, any amount. Booklet free. Joseph Clark, Sacramento.

EIGHT JERSEY-HOLSTEINS—Tuberculin tested; \$75 each; average four gallons daily. W. J. Gormley, 409 N. Stockton st., Stockton.

Safe Scaffolding for Silo Builders.

[Written for Pacific Rural Press.]

Silo building promises to be more general this year than ever before in California; and with the increased activity comes a multitude of questions concerning modes of construction.

A stave silo on the J. S. Gibson Company's ranch at Williams was enlarged and the staging hung for the lining of a new resaw and studded silo in a way that merits commendation.

After the studding for the new silo had been raised, and secured by guy ropes and braces, two heavy timbers were placed across the top plate rail. Heavy rope blocks and tackle were suspended from these timbers to a round platform that was substantially nailed together, two tackles being suspended from each timber. This arrangement allowed the lowering or raising of the platform at will.

Work was started some distance from the ground by running a temporary course of resaw around the studding to support the studding and

other courses were added several feet apart higher up. When these had been nailed in place the staging was lowered to the foundation and the nailing of the two permanent courses of resaw and a course of tarred paper was started, the staging being raised as the work progressed. Besides effecting a saving in lumber over the ordinary cumbersome staging used, the outfit provides a safe and convenient floor for the workmen.

The addition to the stave silo was also made of studding and resaw, an iron hoop encircling the studding at the joint of the two structures. A notch at the end of each studding allowed it to rest on top of the staves bringing the inside of the studding flush with the inside of the staves, so that the resaw and paper could be carried well down over the joint to prevent leakage. As completed, both silos are 40 feet high, and have given entire satisfaction the past winter in furnishing feed to the purebred Holstein herd which is maintained on the ranch.

Systematic Calf-Feeding.

[Written for Pacific Rural Press.]

There is some system to the way Superintendent McCord of Ennis & Williamson's 120-cow dairy ranch in Riverside county raises their calves. They are graduated from one pen to another as they reach proper age. Each pen where milk is fed has stanchions under a shed roof convenient to milking barn and separator.

Calves are taken from their mothers at two days old and fed their mother's milk for a week. They get

all they will drink at first, but this is never over two quarts per feed. After several feeds look out for over-indulgence. Never give over three quarts per feed, until three months old, and never over a gallon after that. They get whole milk until three weeks old, then are gradually tapered off to separator milk in about two weeks in another pen.

Having graduated from the tapering-off pen, the calves get a two-o'clock feed daily of about three gallons dry wheat bran per ten calves, besides separator milk twice a day for each, and all the alfalfa hay and salt they need. Before they get out of this pen, they are getting a gallon of milk per feed, but are tapered off, so in the next pen they get no milk. There for a while they get four gallons bran per ten calves and all the alfalfa hay they want. The next pen consists of young stock whose feed consists of all the alfalfa hay they want and about one and a half pounds beet pulp once a day until about a year old. Then they are fed nothing but hay until they freshen.

SELECTING A 300-POUND HERD.

Unless you can breed them yourself it is no easy job to secure a herd of grade cows that will produce an average of 300 pounds of butterfat in a year and it was only through the Stanislaus Cow Testing Association that L. L. Long of Modesto was able to do so.

Mr. Long bought 46 head of grade cows last year to put on his alfalfa ranch purchasing mostly heifers before they freshened, but from herds that had been entered in the cow-testing association.

Of the lot 12 had to be sold because of low production as shown by the cow tester's report, the balance finishing their first year's work with an average of over 300 pounds of fat to their credit.

Keep cows, being dried up, in good flesh.

CUTTER'S BLACKLEG PILLS

"California's Favorite" for nearly 20 years

For the Prevention of Blackleg in calves and young cattle

Their superiority is due to nearly 20 years of specializing in "Vaccines and Serums only."

Year in and Year Out they give better satisfaction than any other vaccine made, and the cost of a few cents per dose is cheap insurance against a disease that always takes the fattest and best.

Single Pills may be used for ordinary and range stock.

Double Pills should be used for pure bred and high grade stock.

Use any Injector, but Cutter's simplest and strongest.

Prices:

10 dose pkge. Single pills \$1.00
50 dose pkge. Single pills 4.00
10 dose pkge. Double Pills 1.50
50 dose pkge. Double Pills 6.00
Cutter's Pill Injector.... 1.50

Insist on Cutter's. If unobtainable, order direct.

Write for new booklet, "The Control of Blackleg." It tells about Anti-Blackleg Serum which cures Blackleg and may be used simultaneously with vaccine to combat outbreaks and safely protect valuable stock.

The Cutter Laboratory, Berkeley, Calif.

The Cutter Laboratory of Illinois, Chicago
Eastern Agent

The De Laval Line

Superior Dairy Equipment

THE IDEAL GREEN FEED SILO

Every dollar you put into an IDEAL now will bring you big returns next Winter.

Feeding your cows on silage is just like turning them out to pasture.

Put up an Ideal Silo and watch your profits grow. An Ideal will pay its entire cost the first year and last from twenty to thirty years.

THE ACME FEED CUTTER AND SILO FILLER

With Alfalfa Meal Attachment and Molasses Mixer

If molasses is mixed with cut feed more of it is eaten and better results obtained both in beef and milk production.



ALPHA GASOLINE AND DISTILLATE ENGINES

Hopper Cooled or Closed Jacket. Stationary, Portable—Semi-Portable.

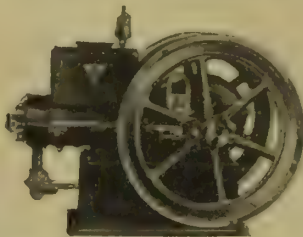
Sizes 1½ to 28 H. P.

Equipped with a high-class built-in magneto—Batteries, Coils and ignition troubles eliminated. Alpha Engines start on the Magneto without Cranking.

Easiest starting engine in the market.

Long Life—Reliable Service.

Catalogs and full particulars gladly furnished to anyone interested in First Class Dairy Equipment.



DE LAVAL DAIRY SUPPLY CO.

61 BEALE ST., SAN FRANCISCO, CAL.

Keep Your Hogs Healthy

ROWES AUTOMATIC HOG OILER does the trick. It is on guard all the time. The cheapest insurance against parasites and disease.



Milk and Cream Coolers.

Milk Cans.

Cheese and Butter Salt.

Gasoline Engines.

Pumps.

Diabolo Separators.

Feed Carriers.

Litter Carriers.

Stanchions.

Cheese Making Supplies.

Boilers.

Pacific Dairy Machinery Co.

56 CLAY STREET

SAN FRANCISCO

Do You Want Long Distance Backing?

We have a son of the California State Champion three-year-old for sale. Born October, 1915; Sired by PRINCE ALCATRA KORNDYKE, whose dam is TILLY ALCATRA.

The Dam of this young bull is not a fifty-lb. cow, but she has to her credit 21,208 lbs. milk and 800 lbs. butter in one year, which is the largest record ever made in California by a Junior three-year-old.

If you are in the market for a bull, it will pay you to visit our ranch and see what we have to offer—at prices that will surprise you.

Look over our consignment at Sacramento May 31

J. S. GIBSON CO., Box 97, Williams, Cal.

"THE NAME GIBSON INSURES QUALITY."

Grain and Silage from "Gyp" Corn.

In exceptional years like the present one it behooves all feeders of livestock to conserve every available ton of feeding stuff and at the same time produce as much marketable grain as possible on his land.

Although the experience of J. E. Bennett of Keyes, Stanislaus county, in 1916, with Egyptian corn and a silo was not enjoyed in a year of such high prices as the present, it is suggestive of what may be done in conservation work this year on many dairies.

When he planted his five acres of "Gyp" corn that year it was with the idea of harvesting the grain alone, but when he saw the good forage that was going to be plowed under after harvest he decided to erect a silo and make silage from the entire field.

As the corn neared ripening time, neighbors told him it would be foolish to silo all of the good grain, so he harvested the larger heads and left the smaller, immature heads on the stalks. The total yield of grain secured in this manner was 12 sacks or a trifle over 24 sacks to the acre.

The field was then cut and run through the silo, the yield being 65 tons of silage from the five acres. At first the cows did not relish the silage, and after repeated attempts to feed it, Mr. Bennett finally secured a barrel of cane molasses, diluting it with water and poured it over the silage. Then the cows ate it readily and the entire siloful was fed out in this manner, it requiring the use of two and a half barrels of molasses for the 65 tons of silage.

Remodeling a Dairy Barn.

In 1916 C. D. Hayworth of Modesto decided to remodel his combination hay and milking barn by the installation of steel stanchions and a well-drained concrete floor, along one side of the hay mow.

The floor dimensions were planned for his herd of registered Jerseys, the depth of the stall being

four feet, eight inches long, the gutter eighteen inches wide and the runway back of the gutter about five feet wide. A one-inch drop was provided from the manger to the gutter and an equal slope was left from the outside wall to the gutter, the entire floor draining to the center, where an open concrete trough carries the liquids outside of the building and along the side wall, furnishing a carrier for the rain water from the eaves on that side of the building.

At the end of the barn the open trough runs into a small concrete basin or settling vat, which overflows into an underground tile that carries the liquids to the irrigation ditch. By means of the settling vat the solids that are washed down the gutter can be shoveled out regularly and in this manner the tile kept from clogging.

Before installing his James stanchions, Mr. Hayworth had always used home-made wooden stanchions, but to his mind there is no comparison between the two types, as the patented kind allow the cows so much more freedom and comfort.

CALF-RAISING POINTERS.

[Written for Pacific Rural Press.]

When B. M. Brown moved onto his present ranch in Tehama county the press of work led him to neglect his twelve or fifteen calves. They got scours, lost their appetites, and became thin. He lost one and took notice. He gave them salts, calf meal, dry quarters, and boiled milk. Something in the combination made them pick up right lively.

One calf he decided to kill. But two tablespoonfuls of salts on alternate days and boiled milk every day brought it through all right.

A double handful of mids was found fine to keep up calves' appetites when changing from whole milk to skimmed milk.



MORE CREAM LESS LABOR

Through Using a

NEW DE LAVAL CREAM SEPARATOR

Patriotic duty as well as dollars-and-cents self-interest now demands of every cow owner the saving of every ounce of cream and butter-fat. Likewise the saving of time that is possible through a cream separator of ample capacity, that is easily turned and always in order.

There was never a summer in the history of the country when both these considerations were of as great importance to the nation as well as to the individual producer of cream and butter.

Under present circumstances, a modern De Laval Cream Separator will save its cost every few weeks. Every cow owner owes it to himself and his fellow countrymen to effect this saving.

This is true whether you have no separator or have an inferior or half-worn-out machine, even if it be an old De Laval model.

It is important to remember, too, that if you cannot pay cash for a new De Laval machine, you can buy one on such liberal terms that it will actually pay for itself while you are using it.

Why not see the nearest De Laval agent at once?

If you do not know him, write to the nearest office for new catalog or any desired information.

Every New De Laval is equipped with a Bell Speed-Indicator

DE LAVAL DAIRY SUPPLY CO.

LARGEST DAIRY SUPPLY HOUSE ON THE PACIFIC COAST

Alpha Gasoline and Distillate Engines, Ideal Green Feed Silos, Acme Ensilage Cutters and Blowers, Irrigation Equipment, Centrifugal and Deep Well Pumps and Alpha Spraying Outfits. Send for Special Catalog.

61 BEALE STREET, SAN FRANCISCO

50,000 BRANCHES AND LOCAL AGENCIES THE WORLD OVER

"HEADQUARTERS" FOR WOOD PIPE AND TANKS

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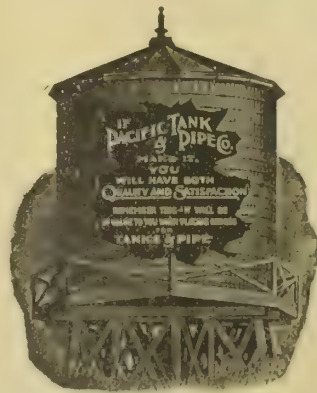
WOOD STAVE PIPE

IRRIGATION PIPE

MACHINE BANDED PIPE

SEWER PIPE

WATER PIPE



WRITE FOR ILLUSTRATED CATALOG

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CRITICS' AND CUDDLERS' CORNER

Subscribers are welcome to praise or to condemn (in letters of not over 200 words) anything which appears in the reading columns of this journal. Contributors to this department may drive and counter-attack each other as they see fit without endorsement or response on our part.—Editors.

Averages Count, in Marketing.

To the Editor: In March Pacific Rural Press, page 358, you had an interesting table of figures as the result of orange sales in various markets of the East, shipments from Folsom. And in the May 12 issue was a caustic criticism, in a sort of an aftermath way, which was somewhat personal to Fair Oaks Fruit Co. or the California Fruit Growers' Exchange.

Fairoaks Fruit Co. had nothing to do with the Folsom shipments of the first article.

Both articles are founded upon facts, but do not state all the truth, therefore are misleading (perhaps not intentionally so).

Using the exact figures and dates of shipments referred to by your correspondent, we cite sales of Fair Oaks Fruit Co. cars in Eastern markets on corresponding dates in November and December, 1916:

	Folsom Car.	Fairoaks Fruit Co. Car.
Nov. 18	\$3.07 1/2	\$3.60
27	2.00	2.75
"	2.25	2.80
28	2.75	2.85
Dec. 5	2.15	2.50
7	1.67	2.10
10	1.90	2.35
17	1.95	2.25
18	2.65	2.00
19	1.50	2.15

With one exception, the sales of California Fruit Growers' Exchange, for Fair Oaks Fruit Co., as noted above, were materially higher than the ones referred to by your correspondent, and it surely follows, that if the grower had delivered his crop for that pool, instead of later, the swan-song might have a more pleasing tune.

Growers ought to select the marketing facility most satisfactory to them, and then co-operate with it through thick and thin. It is averages that count, and all agencies strive to obtain the best possible. The Exchange idea worked out in a pooling system is mutual indemnity against serious individual losses.—W. W. Hinsey, Fair Oaks.

Kaiser Peace Lord?

To the Editor: I wish to make a vigorous counter-attack on the letter of Reader of Angels Camp which appeared in your issue of April 28, in which he holds up the Kaiser as a great "peace lord." It is popularly supposed that the Kaiser has fallen far short of that lofty ideal, and that Wm. Jennings Bryan has him backed off the boards for peace. In our forty years' knowledge of the Kaiser we never heard of him taking any peace prizes; on the contrary he appeared as an exponent of the mailed fist and an apostle of the whetted sword. His conduct certainly has not commended him to lovers of peace. Had Reader discussed bees, beans, and barley it would have been more to the point in an agricultural journal, instead of butting in with praise of our nation's greatest enemy. (The paragraph was written before war was declared and delayed in printing.—Editor)

Evidently he wearies of residing in a bellicose country like ours where a majority of Congress and public opinion can plunge the nation into war, and might well make a better citizen of that dearly beloved Kaiser's land, where three or four men dominate the destiny of their people. We also are strong for truth.—Citizen, Indio, Calif.

Danger in Increasing Production.

To the Editor: On one hand the farmer is being urged to utilize every foot of his ground for crops to help food supply and on the other he is handicapped with shortage of help to harvest and care for that same crop. Some well meaning persons suggest we pay better wages. If we knew we could make enough for expenses and taxes and

a little left to live on, after all our hard work, we wouldn't care how much wages we paid.

I don't believe any business man would take up a business where he couldn't break even, yet they ask us to do this. We are told what we shall pay and what we shall receive for our products. I think we should have the say one way at least. We may be compelled to confine ourselves to raising enough for our own needs and turning the rest into a hog pasture, to be able to handle it. I don't believe Uncle Sam will ask us to work at a loss. Some one, who is honest enough, had better get busy and regulate prices.—An Orchardist, San Juan Bautista.

Caustic for Dehorning Kids.

To the Editor: Can kids be dehorned by using caustic?—P. C. H., Selma.

Yes, as you would dehorn a calf.

VETERINARY QUERIES

[Answered by Dr. H. B. Wintringham, Petaluma, Cal.]

[Subscribers wishing an immediate reply should send money order for \$1.00. No charge for questions answered through this department. Name and address of subscriber must accompany each query.]

Calf With Hair Falling Off.

To the Editor: I have a calf whose hair is all coming from its back, legs and around the head. It seems otherwise in good health. Gets warm skim milk and calf meal three times a day and runs on alfalfa, and has clean bedding ground. Can you advise me what to do for it? How long should calves get milk when they are to be kept for beef, considering that they have good pasture?—M. E. S., Kellogg.

Bathe every seven days with the lime-sulphur dip as prescribed by the government. Feed milk up to the time of slaughter for veal.

This Mare Is a Bleeder.

To the Editor: I have a black mare, of a rather nervous temperament. She had a hemorrhage a few days ago. A train passed us on the highway and she got very

excited. She made a roaring in her lungs, then the blood gushed from her nostrils. Is this anything serious?—J. E. B., Turlock.

Your mare is a bleeder, and I can offer no specific remedy. Try giving one half ounce of Fowler's Solution twice a day.

Pigs Have Leg and Eye Troubles.

To the Editor: I have a pig that walks on its knees, and its hind feet touches its front feet. It seems to be sore on the shoulders and under the throat. I have some other pigs that foam runs from their eyes and they get sore and can't see out of them. Please advise.—J. R., Elmira.

Give sick pig 4 oz. Epsom salts. Treat eyes with saturated solution Boric Acid daily and examine for a foreign body which should be removed.



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Poultry for Profit

[Written for Pacific Rural Press by Susan Swaysgood, Pomona.]

MILK-FED BROILERS.

In feeding for milk-fed broilers the chickens should be in fair condition to start with, because they will only stand the confinement and concentrated food just so long. In cool weather or in a good building they will stand 17 to 20 days, but in warm weather usually two weeks is all you can hold the appetite up. Just as soon as the appetite fails they are done for. May as well sell or turn them loose.

If you can buy oat flour, ground oats with the husks removed, do so; it makes the whitest and firmest meat. If you cannot get that, mix one quart shorts, two parts white middlings or low grade flour, and five parts coarse corn-meal; a little salt may be added for flavor. Now take a quantity that you think the chickens can eat at one meal and mix with good thick buttermilk into a liquid that will just pour out of your bucket. The feed must of course be put outside the coops, which should have slats and be up from the ground. Feed twice a day and don't overfeed at first, keep them a little hungry, no water is given, no green feed nor anything but just this buttermilk mash, and don't make the mistake of mixing too stiff. The last four or five days add a little melted tallow to the feed.

MERCURIAL SALVES.

In your book, "California Poultry Practice," you mention a mercurial salve as a preventive for lice. In a couple of weeks I expect to buy a number of six-weeks old pullets, would you advise the use of this salve on them, if not what would you suggest? Please answer through the Press.—Mrs. J. P.

Yes, it is all right to use as directed in book on all stock except breeding stock. It is not advisable to use it on any kind of breeding stock or on chicks under six weeks and do not rub too hard. If the chicks are clean when they arrive I would defer using the salve until they are a little older, or make it much more reduced in strength than for grown fowls. This same lady says "I have had such good results from using 'Benetol' for diarrhea in fowls, that I thought it might help someone else. I put five or six drops of full strength Benetol into a small capsule and give it the fowl every other day for a week and they all recovered quickly." Now I will say that I have used Benetol for human ills, have seen it used for indigestion with very good results and have no doubt at all but that it will answer just as well for poultry. All drug stores sell Benetol in 25 cent bottles.

Purebred and Commercial

[Written for the Pacific Rural Press by Harry Mortenson, Susan.]

POULTRYMEN'S MEETING AT DAVIS.

Dean H. E. Van Norman welcomed a small but interested gathering of poultrymen at the University Farm on May 30. Through some misunderstanding and on account of the press of work at home, a number of members of the State Poultry Breeders Association and the Ameri-

can Poultry Association were unable to attend. The University Farm is making good. Being an experiment station as well as a school of instruction, many a hard nut is cracked. It is almost impossible as well as expensive for the average poultry breeder to try out the different methods of poultry production, and for this reason the State supports an institution like the Davis Farm.

The short course this year is to be limited to 40 students. The facilities of the plant can accommodate no more. Those 40 men and women, who are fortunate enough to attend this year, will never regret it. The Farm will teach them how to rear chicks successfully and how to handle them afterwards, as well as additional information that cannot be measured in dollars and cents.

One of the points brought out by Prof. Dougherty in his address was the fact that it will be necessary to increase the egg yield to more than 115 eggs per year; that number being required to make both ends meet when feed is worth 4 cents per pound. It might be well to mention that the average egg yield in California today is 87 eggs per year. It is up to the farmers and commercial

poultrymen to raise this standard in order to remain in the business. We must hatch from good, known, pure-bred stock. Do not buy your chicks indiscriminately. Such a method is expensive in the long run. Either raise your own or get them from reliable breeders. See that the little fellows are hatched right and give them proper care. Cooperation was strongly urged.

HIGH-PRICE EGGS GOING INTO STORAGE.

A prominent poultryman of Sacramento informed us the other day that he was getting 38 cents for a lot of eggs that are being put in storage. If a profit is expected after the eggs are stored for four or five months they should bring 50 cents per dozen. Such being the case, what will fresh eggs bring about Christmas time?

BUTTERMILK CURD FOR POULTRY.

We received an inquiry the other day regarding dried buttermilk curd and its comparison to meat scrap. At the present market price of both products the curd is the cheaper and if not spoiled will no doubt be better for the hens.

Poultry Breeders' Directory

BARRED PLYMOUTH ROCKS—COCKERELS—Cockerels—Cockerels—Yes, we have them; also Hens and Pullets—all bred from our Champion Winners at California's leading shows. Also hatching eggs. If it's Barred Rocks you want, get in touch with me right away. Have bred them exclusively for nine years. Send for Catalog. Chas. H. Voden, Box 396, Los Gatos, Cal.

ORDER YOUR BABY CHICKS NOW—for next two weeks. Last chance. White Leghorns, 8 cents; Brown Leghorns, 10 cents; Rhode Island Reds, Black Minorcas, White and Barred Rocks, 12 cents—any quantity, 20 to 500. First class chicks and safe delivery guaranteed. Circular free. Roofden Poultry Ranch and Hatchery, Campbell, Cal.

BABY CHICKS—HATCHING EGGS—White, Brown Leghorns, R. I. Reds, Barred Rocks; sturdy chicks from well-mated fowls; prompt, efficient service. Write for circular. Campbell Poultry Ranch, Campbell, Cal.

S. C. RHODE ISLAND REDS—220-egg record in 12 months; breeding males; eggs at half price. Wm. Larm, 3915 39th ave., Fruitvale, Cal.

KASTMAN'S BRED-TO-LAY Barred Plymouth Rocks—chicks, eggs, cockerels. We organize and trapnest. Fairmead Poultry Farm, Fairmead, California. Box P.

INCUBATORS—For Essex Model Incubators at factory prices, write Geo. H. Croley Co., Inc., Poultry Supplies, 631-637 Brannan st., San Francisco.

CHICKENS, DUCKS, GEESSE, GUINEAS, Pea Powl, Pigeons. Wm. A. French, 645 W. Park st., Stockton, Cal.

WHITE PLYMOUTH ROCKS—Hatching eggs from splendid layers. Mrs. J. B. Tupper, Route A, Ceres, Cal.

BRONZE TURKEYS—Albert M. Hart, Clements, Cal.



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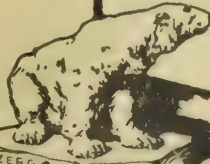
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Mrs. Best's Letter.

LADIES' SUMMER WEAR.

My Dear Friends—One of the garments that has undergone many changes is the middy blouse. We still see the middy of several seasons ago, with the colored collar and cuffs and the lacing at the throat and at the sides, and it makes a very satisfactory garment. It can be worn over a white skirt or over a colored wool, and looks well in either case, but the new middy is very much longer and very much fuller. In fact, some of them seem to start under the arms and go out until at the bottom they are full almost to the point of clumsiness. Many of the white ones are smocked with a colored thread and the collar and cuffs will have the same color, and other white ones have large collars, fancy pockets and a band around the bottom in bright plaids. The colored ones are of bright green, rose or yellow, with fancy collar, cuffs and pockets of cretonne. Not all the models are belted, but it is rather a more graceful style than the loose ones. These colored middies are pretty with white skirts.

The lingerie blouse gives promise of being better style this year than for some time. The new imported voile can hardly be told from Georgetown crepe in appearance, but it is not quite so expensive. Lace is used for trimming, not only on collar and cuffs, but upon the waist also. Clusters of tiny tucks with narrow lace ruffles make the fronts of the blouses beautiful indeed. These waists are said to launder well, but must not be starched, for their beauty is in their softness.

Quite a number of waists are shown with the high neck and small turnover collar, and with these are worn ribbon stocks, but the low-neck waist is more popular. Many women do not care for the low-necked blouse with a tailor suit, and for them there are lace jabots that can be worn with any blouse. They are made of lace, just a collar that fastens at the back of the neck, with a pretty frill of lace in the front, which entirely covers up the bare throat and gives a pretty finish to the suit. While a good tailor suit is the foundation for a suitable street or church costume, it is the accessories that mark the difference between a well-dressed woman and one who is not. The trim, becoming hat, worn with a face veil that keeps the hair from blowing, well-fitted shoes with heels in proper condition, and good looking gloves, go a long way toward making a woman look well dressed.

Some of the new so-called sport suits are combinations of plaids and plain colors, one very pretty one being a blue and brown pleated plaid skirt, with coat of plain blue velour, with the collar and straps on the sleeves of the plaid. So often the coat of a suit outlasts the skirt, and this would be a good season to make a new plaid or striped skirt to wear with an old coat, if it were still in good condition.

Quite the most modish thing in the sport suits for summer are the white gabardine skirts with coats of velvet. One very attractive one was

THE HOME CIRCLE

in a plain box coat, with two large white buttons in front and a large white collar. This was in black, but they are shown in colors as well.

The black and white checks are not as popular as they were, but there are some seen on the streets and worn with an all-black hat they make very good-looking street suits.

Silk handbags continue to be popular, but they have by no means crowded out the leather. For shopping or hard usage nothing takes the place of a leather bag.

ROSABELLA BEST.

ANOTHER POTATO CAKE RECIPE.

Editor Home Circle: Please publish this recipe for potato cake for Mrs. E. M. C. of Modoc Co. One cup butter, 2 cups sugar, 4 eggs, $\frac{1}{2}$ cup ground chocolate, $\frac{1}{2}$ cup sweet milk, 1 cup chopped walnuts, 1 cup warm mashed potato, 2 teaspoons baking powder, 1 teaspoon each of cinnamon, allspice and nutmeg. Flour enough to make a thick batter, bake slowly 1 hour. This makes a large cake and is a good keeper.—Mrs. C. C. S., Fallon, Nev.

BAKER'S ICING.

Two cups of granulated sugar, 1 teaspoon of glucose or corn syrup, 1 cup of water. Boil together without stirring till it forms a thread when dropped from a fork. Take from the fire and let stand until luke warm. Beat until like a soft dough, then knead until thick and creamy. Pack in a covered jar and put in a cool place. When ready to use, take out amount wanted in a bowl, set bowl in hot water until frosting is soft enough to spread, add flavoring and use. If kept covered, this icing will keep indefinitely.

NOVEL TABLE DECORATION.

Cut off the sprouting carrot tops, leaving almost an inch of the vegetable. Fit them into a dish about four inches in diameter, so that the tops will be able to peep through as they are arranged in tiers one above the other. Keep covered with water and in the light for two weeks, and there will be a beautiful fern-like growth that makes a good center piece for the dining table.

Good Health.

[By H. E. Pastor, M. D.]

The Coffee Question.

The writer has been frequently asked whether the use of coffee as a beverage is harmful or harmless. The moment you mention coffee, as also certain other things in the same class, the food faddists are instantly lined up into two hostile camps. Some, as the Arabians themselves, regard it as a gift from heaven, while many of its opponents denounce it as a rank poison. Perhaps there is some basis for the contentions of both sides, depending on whether the beverage is used in moderation or grossly abused. Taking the data as a whole that has been accumulated in respect to its physiological action, it would be difficult to show that its moderate use by people in fairly good health has any injurious effect. On the other hand, its effect on people of weak digestion or enfeebled nervous system may be decidedly harmful. In the quantities generally used the effects of coffee are merely transient. That it has the property of temporarily obviating or relieving mental and physical fatigue is unquestioned. It is unquestionably true also that its excessive use brings in its train such injurious symptoms as headache, nervousness, dizziness and insomnia. The use or non-use of coffee seems to be a question that each individual can best determine for himself. If he finds its use is deleterious to his health he should cut it off his bill of fare. If, on the other hand, he suffers no ill-effects from its use, but finds its action is salutary in promoting digestion and pleasing the palate, there is no reason excepting "H. C. L." why he should abstain from its temperate use.

Garlic in Consumption.

We have received an inquiry as to whether the belief in garlic as a preventive of consumption, or a cure, has any foundation. This belief is current among a large number of people and has some acceptance among medical men, though other members of the medical profession flout the claim. A well-known Irish physician of wide repute, Dr. Wm. C. Minchin, once wrote a book on the subject. He strongly advocated the use of garlic among consumptives, and his views were endorsed to some extent by prominent medical preceptors in London and Vienna medical schools. Dr. Minchin even went so far as to declare that garlic was not only valuable in the pulmonary form of tuberculosis, but was efficacious in tubercular affections of all accessible parts of the body. In the scattered Italian settlements in San Francisco it is stoutly maintained by the Italians themselves that the free use of garlic will give complete relief in most cases of consumption and effectively prevent the spread of its contagion to others. The writer has not personally tried this lay remedy, but sees no reason why it may not be tested out, as it costs little and is entirely inoffensive, except as to odor—and the odor is much more tolerable than the disease.

Don't over-exercise. As a rule, famous athletes are short-lived.

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FORGOT SOMETHING.

He called for a city beautiful;
He shouted it day by day;
He wanted a city where noise was not,
Where the spirit of art should sway;
He wanted a city that should be fair,
Where filth might never be seen,
And forgot, in spite of the zeal he had,
To keep his back yard clean.

NEW BREAD RECIPES.

Rice Bread—One cup lukewarm water or milk, 1 cup uncooked rice, 1½ teaspoons salt, 1 tablespoon sugar, 1 tablespoon shortening, ½ cake compressed yeast, 2 cups wheat flour. Steam the rice with ½ the liquid until it is soft. Put the sugar, salt and fat into the mixing bowl and pour over them the remaining liquid, ½ cup. When the mixture has become lukewarm, add the yeast and ½ cup of flour. Allow this sponge to rise until light. Add the boiled rice, cooled until lukewarm, and the rest of the flour. This dough is so thick that some pressure is required to work in the last of the flour. Let rise until double in bulk, form into a loaf, place in pan and let rise until nearly to the top of the pan, then bake.

Rye Bread—One quart milk, 2 tablespoons sugar, 4 teaspoons salt, 2 tablespoons butter, 1 cake compressed yeast, 3 cups flour (1 cup wheat and the remainder rye). Make just as wheat bread until after the second molding. Then the dough should be placed in a 6-quart bowl lined with a cloth, into which flour has been rubbed. When the dough has risen to the top of the bowl, turn out on a hot inverted dripping pan over which a tablespoon of flour has been sprinkled, and place immediately into a very hot oven. After ten minutes, lower the temperature and bake for one hour.

DOMESTIC HONEY PLANTS.

A large number of domestic honey plants can be grown on the average farm, the most profitable being clover, alfalfa, vetch, soy beans and cow peas. Alfalfa and clover are the most important of these for honey plants, clover being especially good on account of its long blooming season, if sufficiently watered. Sweet clover is a very important honey plant and wherever it grows, will always be found the honey bee. Buckwheat is also a good domestic honey plant, but buckwheat honey is dark in color and has a flavor not liked by everyone. All domestic fruits are good honey plants and the average farm has enough honey plants to support from one to several colonies of bees, producing enough honey for the use of the family.

The smallest thing, well done, becomes artistic.

FORTY VARIETIES OF FERNS

In 4-in. pots now ready, 25 cts. each, \$2.50 per dozen. Am booking orders now for choice varieties of CHEYSANTHEMUMS, commercial, show, single and pompons. Forty varieties of FLEAGONIUMS in 4-inch pots will soon be in bloom, 25 cts. each, \$2.50 per doz. Also a large variety of other stock. Send for catalog.

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Chocolate is an appealing food—perhaps the most delicious of all foods. It is likewise nutritious food—perhaps the most nutritious.

When you buy Ghirardelli's Ground Chocolate you get the grand prize winner, a chocolate of finest quality packed in a hermetically sealed can that holds all the Ghirardelli goodness in and keeps all outside evils out.

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Ghirardelli's Ground Chocolate

Since 1852

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Cook in a cool, comfortable kitchen this summer. An oil cook stove is comparatively inexpensive to buy and it will soon pay for itself in comfort and lower fuel expense. Meals in a jiffy, and a cool kitchen in summer.

Bakes, broils, roasts, toasts. Better cooking because of the steady, evenly-distributed heat. More convenient than a wood or coal stove for all the year 'round cooking, and more economical.

The long blue chimneys prevent all smoke and smell.

In 1, 2, 3 and 4 burner sizes, with or without ovens. Also cabinet models. Ask your dealer today.

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Sash, Doors, Millwork, Roofing,
Hardware, Paints.

Let the Builders' Bargain House save you money on all building materials. Send your building list for Boyd's low estimate or write for our free catalog of a thousand building bargains.

The Frederick Boyd Co.
2209 Westlake Avenue, Seattle

SAN FRANCISCO.

San Francisco, June 6, 1917.

WHEAT.

It now being established that there is enough wheat here for all needs and that there are prospects for a fairly good crop, some declines have taken place and the general tendency of the market is towards lower rather than higher prices. Sonora wheat, re-cleaned.....None offered Northern Club.....None offered California Club, per ctl.....None offered Northern Bluestem.....\$4.90@5.00 Northern Red.....4.75@4.80 Russian Red.....4.65@4.75

BARLEY.

With an average crop in sight, barley has followed wheat towards a lower basis. There is no doubt that expectations of the Government curbing speculation in grains has assisted in easing off this market in sympathy with other grains. Shipping, ctl.....Nominal Brewing.....Nominal Choice feed, ctl.....\$2.25@2.30

OATS.

There has been very little trading in oats during the past week, and white feed shows a very natural decline. White feed, per ctl.....\$2.65@2.70

BEANS.

With light stocks on hand, the market on most lines is quiet though firm at somewhat reduced quotations. There is a considerable acreage yet to be planted in the valleys and dealers in San Francisco are shipping seed beans almost daily. Hayos, per ctl.....\$11.00@11.10 Blackeyes.....9.25@9.50 Cranberry beans.....11.90@12.00 Horse beans.....5.50@6.00 Small whites (south).....16.00@16.25 Large whites.....16.00@16.25 Pinks (south).....11.00@11.30 Limas (south, re-cleaned).....16.00@16.25 Red kidney.....13.00@13.50 Mexican reds.....11.25@11.50 Tepary beans.....None offered Garbanzos.....\$6.25@6.50

CORN.

The situation here is now dominated by the arrivals of Eastern corn. This, however, has not held up to last week's quotations, having declined, for Eastern yellow, to \$3.25@3.30. There is now no Milo maize to be had here. A drop in Egyptian is noted, and it is rather weak even at the present figures. (First-hand price on strictly first-class Eastern Yellow, San Francisco.)

California, sacked.....\$3.25@3.30 Milo Maize.....3.40 Egyptian.....None offered \$3.75@4.00

HAY.

Hay arrivals during the last week were about up to the average of recent weeks, shipments still being confined to the old crop. None of the new crop has yet reached this market, and the demand being rather light there is no particularly urgent call for it. Enough old stock is on hand here to meet all requirements for the time being, and as things now stand it may be several weeks before new hay becomes a factor here. Harvesting is well under way, with good weather throughout the State. Advances concerning the new stock indicate good quality and large yield.

Wheat, No. 1.....\$27.00@28.00 No. 2.....25.50@26.50 Tame oats.....24.00@30.00 Wild oats.....Nominal Barley.....\$25.00@27.00 Alfalfa, new, first cut.....14.00@15.00 Stock hay, new.....10.00@12.00 Straw, per bale.....1.00@1.10

FEEDSTUFFS.

An abundance of fresh feed in the irrigated districts has had the usual bearish tendency on markets. Nearly all lilles have declined sharply, especially rolled barley, which is now quoted \$10 lower than last week's prices. On the other hand, coconut cake or meal has been advanced a dollar. Beet pulp is again on the market, being quoted at \$35 to \$40. (Per ton San Francisco.)

Beet Pulp, per ton.....\$35.00@40.00 Alfalfa meal, per ton.....30.00@32.00 Bran, per ton.....36.00@47.00 Oil cake.....None offered Coconut cake or meal.....\$7.00@8.00 Cracked corn.....22.00@73.00 Middlings.....58.00@60.00 Rolled barley.....47.00@48.00 Tankage.....None offered Rolled oats.....55.00@56.00 Rice middlings.....None offered Rice bran.....\$30.00@33.00 Shorts.....50.00@51.00

POTATOES, ONIONS, ETC.

In spite of the heavy receipts during the week, prices are well maintained. Deltas still hold out at \$4.00@4.50, but there are no Salinas to be had in this market. Onions are also becoming scarce now. The large crop in Southern California has caused that section to practically rule the market for the present, and heavy shipping eastward is taking place from Los Angeles. Onions show a decline in Delta reds to \$1.40@1.60, due to large arrivals. It is reported by dealers and growers that the California onion crop is the heaviest in years and of a surpassing quality. Heavy deliveries of asparagus have not, so far, had a really downward effect on values owing to the eagerness of canners.

Asparagus, per box.....\$1.75@3.00 Peas, per lb.....2@2 1/2c String beans, per lb.....4@7c Wax beans, per lb.....5@6c Hubbard squash, per lb.....None Summer squash, per crate.....50@55c Cucumbers, per box.....\$1.00@1.25 Lettuce, crate.....50@75c Celery, Delta, crate.....\$1.00@1.50 Tomatoes, crate.....Not enough to quote Rhubarb, bay, per box.....75c@1.15 do, San Jose.....\$1.15@1.25 Potatoes, cti, Delta.....4.00@4.50 Salinas.....Cleaned up

THE MARKET REPORTS

Figures Given are Independent and Reliable.
Prices Quoted as Paid to Producers.

Oregon.....\$4.50@4.75 New, per lb.....3 1/2@4 1/2c Sweets, per lb.....None offered Onions, green, per box.....Nominal Delta reds, new, per sack.....\$1.40@1.60 Bermuda (seed), per ctl.....1.40@1.60 Garlic, lb.....1@3c

POULTRY.

No insufficiency can be complained of at the present time, as the local market is flooded with receipts. Under the strain of temporary over-supply, prices have fallen off considerably. Fryers and broilers are down 5c, while young roosters have declined to 30c flat. Turkeys, geese, ducks and Belgian hares are not in any real demand. Squabs remain in good favor at last week's quotations. Turkeys, live, lb.....20@22c do, dressed, large, lb.....22@23c Broilers, 1 1/2 to 2 lbs.....22@23c do, under 1 lb.....22@23c do, 1 1/4 lbs.....23@24c Fryers.....23@30c Hens, extra, per lb., colored.....21@25c Small leghorn.....17@18c Smooth young roosters, per lb. (3 lbs. and over).....30c Old roosters, per lb.....12@14c Geese, per lb.....19@20c Squabs, per lb.....35@40c Ducks.....18@20c Old.....17@18c Belgian Hares (live).....14@15c

BUTTER.

While quotations of extra remained stationary all the week, a weaker feeling developed among dealers on Wednesday. This was due to some apprehension lest the home market would be unable to absorb comfortably the heavy receipts. Considerable shipping has been done of late to New York; but that great center is now quoting at only 4 1/2 cents above San Francisco prices. This renders the exportation thither from San Francisco too hazardous, as the leeway between the two markets is insufficient. Unless some other avenue for export opens, there is a strong probability of a break in the market.

Thurs. Fri. Sat. Mon. Tu. Wed.
Extras.....36 1/2 36 1/2 36 1/2 36 1/2 36 1/2
Prime firsts.....36 36 36 36 36 36

*Registration Day.

EGGS.

Values of extras keep very firm and unyielding, due to the fact that the shippers' demand is taking care of receipts, and also to the fact that some dealers are putting stocks in storage even at the present high ruling prices. Pullets have displayed a tendency to fluctuate during the week, see-sawing between 28 and 29 1/2 cents for extra pullets, while extra firsts ranged from 27 1/2 to 28 cents, on Wednesday.

Thurs. Fri. Sat. Mon. Tu. Wed.
Extras.....33 1/2 33 1/2 33 1/2 33 1/2 33 1/2
Extra 1sts.....33 33 32 1/2 32 1/2
Extra pullets.....28 28 28 1/2 28 1/2
Ex. 1sts pul.....28 27 1/2 27 1/2 28 28

*Registration Day.

CHEESE.

Values of Y. A's declined on Saturday, but remained firm after that date, owing to a brisk business doing on shipments

eastwards and to the Orient of both Y. A's and California flats. Prices of flats firmed up a cent. Jacks are quoted at 18 to 24 cents.

Y. A's.....23 1/2c Fancy Calif. Flats, per lb.....23c Monterey cheese.....18@24c

DECIDUOUS FRUITS.

Bellflower apples are practically off of the market, and Newtowns are a negligible quantity at \$2.00 to \$2.50 per box. Cherries are moving in more freely, though they are none too plentiful. Peaches and apricots have increased in volume enough to be materially lower in value. Figs have cheapened to \$1.00 to \$1.50, due to the influx from the Imperial Valley country.

Apples: Newtown, fancy.....\$2.00@2.50 do, ordinary.....1.25@1.40 Cherries, bulk, per lb.....5@10c Royal Anne, per lb.....8@10c Apricots, per crate.....\$1.25@1.75 Peaches, per crate.....1.50@2.00 Figs, per box.....1.00@1.50

CITRUS FRUITS.

Valencias have commenced to arrive, and the small stocks now on the market rule from \$2.75 to \$3.00. Navels are nearly out and excite little interest, now that berries and other deciduous fruits are available. Lemons, lemons and grapefruit have advanced considerably owing to short supplies.

Oranges: Valencias.....\$2.75@3.00 Navels, fancy, per box.....2.75@3.25 do, Choice.....2.25@2.35 Tangerines.....1.75@2.25 Lemons: Fancy, per box.....\$3.65@4.00 Choice.....3.00@3.75 Standard.....1.50@2.25 Lemonettes.....2.00@2.25 Grapefruit, fancy.....3.00@3.25

DRIED FRUITS.

There is no heavy trading as yet in dried fruits, and the volume of the new crop is being felt out by the trade. Black figs of the 1916 crop are quoted at 8 cents. This season's peaches have advanced a cent. (Net to growers, bulk basis, f. o. b. shipping point.)

Apples, new crop.....9@9 1/2c Apricots, per lb.....16 1/2@16 3/4c Figs, black, 1916.....8c do, 1917.....5 1/2@6 1/2c do, white, 1917.....6@6 1/2c Callimyrna, 1917.....9@10c Prunes, 4-size basis, 1917.....6 1/2@7 1/4c Prunes, 1916.....8 1/4@9c Pears.....8@10c Peaches, 1917.....8 1/2@9 1/2c

BERRIES.

Deliveries are now large enough but less plentiful owing to cool weather. Strawberries find a ready sale at ruling prices of \$5 to \$6 per chest for all varieties save Longworths. Blackberries, raspberries and loganberries have cheapened because of greater supply, while gooseberries have advanced a cent.

Strawberries (per chest).....\$5.00@6.00 Southern.....None Fresno.....None Longworths.....\$6.00@8.00 Blackberries, crate.....1.00@1.15

Special Citrus Market Report

Los Angeles, June 5, 1917.

Shipments of citrus fruits from Southern California from November 1 to June 3: Oranges, 27,153 cars; lemons, 4,824 cars. Same time last year: Oranges, 22,235 cars; lemons, 3,952 cars.

Shipments from Central California from November 1 to June 3: Oranges, 4,094 cars; lemons, 164 cars. Same time last year: Oranges, 5,348 cars; lemons, 140 cars.

There has been a notable improvement in this market the past week. As the navels are being cleaned up and the valencias are moving slowly to market as yet, the Eastern markets took on a decidedly stronger tone and the demand was reported good at most of the Eastern trade centers. Lemons are also reported higher in the East and demand fairly good, notwithstanding the backwardness of the weather. Locally the orange market showed a little more strength in sympathy with the Eastern markets, though prices were only ad-

vanced in special instances. The abundance of berries and other fruits hurt the local sale of oranges. Grape fruit continues slow sale at old prices and lemons are as dull as ever.

AUCTION SALES.

New York, June 4.—Forty-three cars of oranges and three cars of lemons sold. Market on oranges 25c higher. Lemons also higher. Weather fair. Corresponding date last season 27 cars of oranges and one car of lemons sold. Market strong on both oranges and lemons. California navels averaged \$2.75@4.05. Lemons averaged \$2.35@4.15.

Boston, June 4.—Twenty-six cars sold. Market is stronger and higher on both oranges and lemons. California navels averaged \$2.70@3.70. Lemons averaged \$2.65@4.00.

Philadelphia, June 4.—California navels averaged \$1.70@3.50. Lemons averaged \$3.20@4.00.

PEACHES AND APRICOTS IN SOUTHERN CALIFORNIA.

The season is sufficiently advanced to form a fairly definite idea as to the outcome of the peach and apricot crop in Southern California. The crop is somewhat spotted, but the yield promises to be much better than awhile back, and the fruit, it is said, will be of fine quality. Horticultural Commissioner William Wood of Los Angeles county reports a full crop of peaches of good quality. Apricots are spotted, but up in the foothills and in a good many other orchards the yield will be heavy and the total promises a full 75 per cent yield. Horticultural Commissioner C. W. Bears of Santa Barbara county says peaches and apricots never promised better, and he looks for a full yield of both, the outlook now being for a 100 per cent crop. Roy K. Bishop, Horticultural Commissioner of Orange county, says that peach trees are heavily loaded with fruit and there is no disease. Apricots are a heavy crop and in excellent condition, the trees being healthy. In Riverside county the outlook is not so promising. D. D. Sharp, Horticultural Commissioner, estimates the yield of apricots at only 55 per cent and peaches 79 per cent.

Raspberries, per crate.....1.50@1.75 Loganberries, chest.....6.00@7.00 Gooseberries, lb.....5@7c

LOS ANGELES.

Los Angeles, June 5, 1917.

BUTTER.

*Receipts of week ending June 5.....268,330
Receipts of same week last year.....341,180

*Tuesday's receipts short.

Under continued good receipts, sufficient and more than enough for home consumption, and, there being no shipping demand, the market worked a little lower the past week. While the production here on the coast shows no increase, the yield in the Central West is picking up and the Chicago market has broken 3c on extras since a week ago, and New York is 2c off. Stocks of butter here in cold storage, May 31, 1917, were 54,946 pounds heavier than a year ago and gained 14,159 pounds from the week before, showing that the arrivals were slightly in excess of home requirements. San Francisco remained steady throughout the week at 36 1/2c for extras under a steady demand from the East and Northwest.

We quote: California extra creamery.....37c Prime first.....36c First.....35c

Daily quotations:
1917— Wed. Th. Fri. Sat. Mon. Tu.
Extra.....38 38 38 38 37 37
1916—
Extra.....27 27 27 27 27 27

EGGS.

Receipts (railroads) for week ending June 5, 1917, 1,987 cases.
Receipts (railroads) for week ending June 5, 1916, 2,733 cases.

Receipts continue to run lighter than a year ago and with a falling off in the production, and the consuming demand holding up fairly well, and some shipping movement, the market was firm and worked a little higher during the week. Trading on call, however, during the week was light, the high prices checking speculation. In Chicago, under heavier receipts, the market there broke 1/4c lower, while New York reported no change. Stocks in cold storage here, May 31, 1917, were 17,944 cases heavier than the same date last year, and there were taken into cold storage for the week ending May 31, 1,636 cases against 1,285 cases the same week last year, showing that more eggs are going into cold storage this year than last, though prices are 9c higher now than then.

Daily quotations:
1917— Wed. Thu. Fri. Sat. Mon. Tu.
Extra.....34 34 35 35 35 35
Case count.....33 33 34 34 34 34
Pullets.....31 31 31 1/2 31 1/2 32
1916—
Case count.....26 25 25 1/2 26 25 25

VEGETABLES.

Market less freely supplied than the week before and prices in many instances are higher. The low prices also attracted some shipping demand. Cabbage continues to come in freely and sold slowly at last week's decline. New potatoes in good demand at old prices. Asparagus slow sale and weak. Onions coming in freely and slow sale and lower. Cucumbers and tomatoes in very good supply and lower. Peas and beans coming in less freely and are up a little. Some green corn was in during the week and sold in a fair way. Asparagus, lb., local and northern.....7@8c New potatoes, per lb.....3@3 1/2c Peas, per lb.....5@6c New onions, silver skins and Bermuda, per crate.....\$1.40@1.50 String beans, wax, per lb.....5@6 1/2c do, Kentucky Wonders, per lb.....5@6 1/2c Summer squash, per crate of four baskets.....50@75c Imperial tomatoes, 4-bkt crate.....\$1.50@1.60 Cucumbers, per box of 2 1/2 to 3 dozen.....75c@1.10 Green corn, lug.....75c@1.00

BEANS.

The market continues very quiet. There was some little buying of seed by the country and prices were held steady. The trade, however, wanted no beans and prices were held up solely by the light stocks.

We quote from growers:

Large white.....18c Small white.....17c Pinks.....16c Blackeyes.....10 1/2@11c

HAY.

The market has quieted down again and it is lower all round. Receipts, while only fair yet, were more than sufficient to supply the light demand. Buyers holding back and only taking such lots as needed for their immediate wants, hoping for a lower market. Alfalfa and grain hay both selling very slowly and clearances were hard to make.

We quote f. o. b. Los Angeles, old crop: Barley hay, ton.....\$19.00@21.00 Oat hay, ton.....20.00@22.00 Alfalfa, northern, per ton.....17.00@18.00 Alfalfa, local, ton.....19.00@20.00 Straw, ton.....11.00@12.00

FRUITS.

There is little new to note in this market the past week. The only addition to the offerings was a few small peaches, the first of the season. They sold in a fair way as a novelty at \$1.50 per lug. Cherries coming in more freely and the quality of the offerings was better. Demand very good, though they sold a little lower. Logans, too, are off a little, but in very fair demand. Apricots remained steady and sold fairly well. Figs were lower and sales rather slow.

We quote from growers:

Avocados, per doz.....\$4.00@5.00 Loquats, per lb.....4@7c Cherries, black Tartarians, per lb.....9@12c Royal Ann.....5@7c Soft White, per lb.....5@7c Gooseberries, per lb.....7@8c Apricots, per 4-basket crate, as to pack.....\$1.20@1.50

Figs, Imperial Valley, 7-lb. box. \$1.25@1.50
Peaches, lug\$1.50

BERRIES.

The feature of this market the past week was the marked increase in the receipts of raspberries, loganberries and blackberries, and they are all sharply lower and sales slow. Strawberries were in lighter supply and higher; demand fair. The cold, backward weather being against their ripening and there was a fair shipping demand.

We quote from growers:

Strawberries—
Poor to choice, 30-basket crate\$1.00@1.20
Fancy, 30-basket crate1.30@1.40
Blackberries, 30-basket crate1.50@1.75
Raspberries, 30-basket crate1.10@1.20
Loganberries, per case1.00@1.10

MELONS.

Cantaloupes from the Imperial Valley were in fair supply during the week. Daily express receipts being had. Market lower and demand fairly good at the decline.

POULTRY.

There was a further improvement in this market the past week. The high prices of butcher meats and the light difference in the price of them and poultry, causing a better demand for all fowls.

We quote from growers:

Broilers, 1½ to 2 lbs.23@24c
Fryers, 2½ to 3 lbs.24c
Hens over 4 lbs.20@21c
Hens under 4 lbs.14@15c
Ducks17@18c
Geese15c
Roosters, 3 lbs. up (soft bones)25c
Turkeys, heavy, 12 lbs. and up.29@30c
Turkeys, light24@25c
Squabs, live, per doz.\$1.50@3.00
Dressed3.75@4.85

HONEY AND BEESWAX.

A number of bright days the early part of the past week caused bees to store quite a little honey and fair extracting was reported. The orange honey crop has been made and is less than half a crop. The yield of sage honey will be a little larger, while alfalfa, which is an irrigation proposition, will be still larger.

We quote from growers:

White orange, extracted, per lb.13½c
White sage, extracted, per lb.12c
Light amber sage, extracted, per lb.9c
Light amber alfalfa, extracted, lb.8½c
Beeswax, per lb.32½c

Special Livestock Report.

San Francisco, June 6, 1917.

CATTLE.—The demand for killers, especially of the better class, is active. Live calves are firmer and quoted at a slight advance.

Grass steers, No. 1, weighing 900 to 1200 lbs.8½@9c
do, weighing 1200 to 1400 lbs.8½@9c
do, second quality8½@9c
do, thin, undesirable7@8c
Grass cows and heifers, No. 1.7@7½c
do, second quality6½@6¾c
do, common to thin4@6c
do, undesirable4@6c
Hay-fed cattle½c to ¾c higher
Bulls and stags, good6@6½c
do, fair5½@5¾c
do, thin4½@5c
Calves, light weight9¼@9½c
do, Medium8½@8¾c
do, Heavy7@8c

SHEEP.—Many of the sheep that have been sent to market were not in good condition owing to scarcity of feed. With increased feed supplies now in sight an improvement is expected. The market is firm.

Yearling lambs12@12½c
Milk lambs12@12½c
Sheep, unshorn wethers11c
do, ewes10c

HOGS.—The receipts of good hog stuff are still short of the demand and there is a tendency to shade prices upward. Some choice lots have brought a cent higher than last week.

Hard, grain fed, 100 to 15012@13c
do, 150 to 30015¼@16½c
do, 300 to 40014@15c

DRESSED MEATS:

Steers, No. 1.14c
do, second quality13@13½c
Cows and heifers11½@12½c
Calves, as to size, etc.12@14c
Lambs, suckling19@20c
do, yearling18@19c
Sheep, wethers18c
do, ewes17c
Hogs20c

Los Angeles, June 5, 1917.

CATTLE.—There was an easier tone to the market the past week. A falling off in the demand for beef and more willingness on the part of many feeders to sell caused a decline of 50c per cwt. on all beef cattle, and even at this reduction killers were not especially urgent buyers. This brings this market down in line with San Francisco's.

Per cwt. f. o. b. Los Angeles:
Beef steers, 1000 to 1100 lbs.\$8.50@9.00
Prime cows and heifers7.00@7.50
Good cows and heifers6.50@7.00
Calves, per cwt.8.00@9.00

HOGS.—There is no change to note in the hog market from a week ago. Not many in and not many wanted. What are arriving being mainly light half fat hogs, but few really good grain-fed hogs coming in, and they continue to command a premium. A falling off in the demand for fresh pork. California continues to furnish what hogs are coming in, the high markets East drawing Idaho and Arizona hogs East.

Per cwt. f. o. b. Los Angeles:
Heavy, averaging 250@300 lbs.\$12.00@12.50
Mixed, 200@250 lbs.13.00@14.00
Light, 175@200 lbs.13.00@14.00

Rough docked 20 pounds, piggy sows 40 pounds and stags 40 per cent.

SHEEP.—A fair demand and rather steady market was had the past week both for sheep and lambs. The offerings, while fairly good, were not suf-

ficient to break prices. Killers were all in the market and wanted a few sheep and lambs.

Per cwt. f. o. b. Los Angeles:

Prime wethers\$ 9.00@10.00
Prime ewes9.50@10.00
Yearlings10.50@11.00
Lambs13.00@14.00

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WANTED TO BUY—CANARIES—1 Coolidge Place, off Jackson, San Francisco.

SEEDS, PLANTS AND TREES.

SEED OFFERING.—Tepary Beans, 22c per lb; Blackeye Beans, 10c; Soudan Grass, 35c; Dwarf Milo, 5c; Jip Corn, 5c; King Phillip 90 D. 6c. Other seeds in like proportion and all good seed stock. Aurora Seed Mill, Stockton, Cal.

WANTED.

WANTED.—Young men and women to attend the Western Normal Courses—Normal and Academic. The Normal Course gives an adequate preparation for teaching at a great saving in time and money. Academic course gives practical finish to education. Write for Bulletin "A." Western Normal, 524 E. Market st., Stockton, Cal.

WANTED.—A good, steady, reliable man or youth that can milk and will take an interest in rearing and feeding pure bred stock, as assistant to herdsman. Address Superintendent, London Ranch, Glen Ellen, Cal.

WANTED, A GARDENER.—A man with good experience and character to work on shares. W. R. Tiekles, Elk Grove, Cal.

COUNTRY LANDS.

FOR SALE.—640 acres of half section good wheat land, 26 miles east of Calgary, in irrigation block; raised 45 bushels wheat per acre last year; about 250 acres in crop; 350 acres will summer fallow; 25 acres in alfalfa; modern and complete improvements; \$5,000 cash, balance arranged; price per acre, \$60. Box 17, Cheadle, Alberta, Canada.

FOR SALE.—One of the best improved 20-acre ranches on the Los Molinos project; buildings all new; price, \$10,000; cash \$4,000, balance on time and terms to suit purchaser. Geo. Boock, Los Molinos, Cal.

DEEP LOAMY RIVER BOTTOM.—25 acres alfalfa, 30 wooded pasture; irrigated; big barn; thirty good cows; Vina Ranch bulls used five years. Manuel Vetter, Los Molinos.

LE GRAND is a coming town. A branch railroad into Mariposa county. Irrigation ditch is on foot. High School and Grammar School. Two Protestant churches.

STEVENS COUNTY.—Logged-off land where stock-raising and dairying pay. Free booklet. Phoenix Lumber Co., Crop Department, Spokane, Washington.

TEN ACRES.—Eight acres in Seedless Thompsons, all upon poles, 5 years old, bearing. Adjoining Santa Fe Depot. \$7,000—part cash.

A COZY HOME.—¼ acre garden truck. House 5 rooms, mill and trees—\$1,500. Cheap for the place. Address, C. W. Kahl, Le Grand, Cal.

FARM PROPERTY.—5¼ acres in alfalfa, ½ acre in fruit trees, grape vines and berries. New 8-room house with bath—\$4,000. **STATE, GOVERNMENT AND INDIAN** Lands—Bargains overlooked. Free New Blue Booklet. Joseph Clark, Sacramento.

FOUR ACRES.—1½ acres in alfalfa, ¼ acre in fruit trees and vines, 4-room house and bath, tank and mill—\$3,500.

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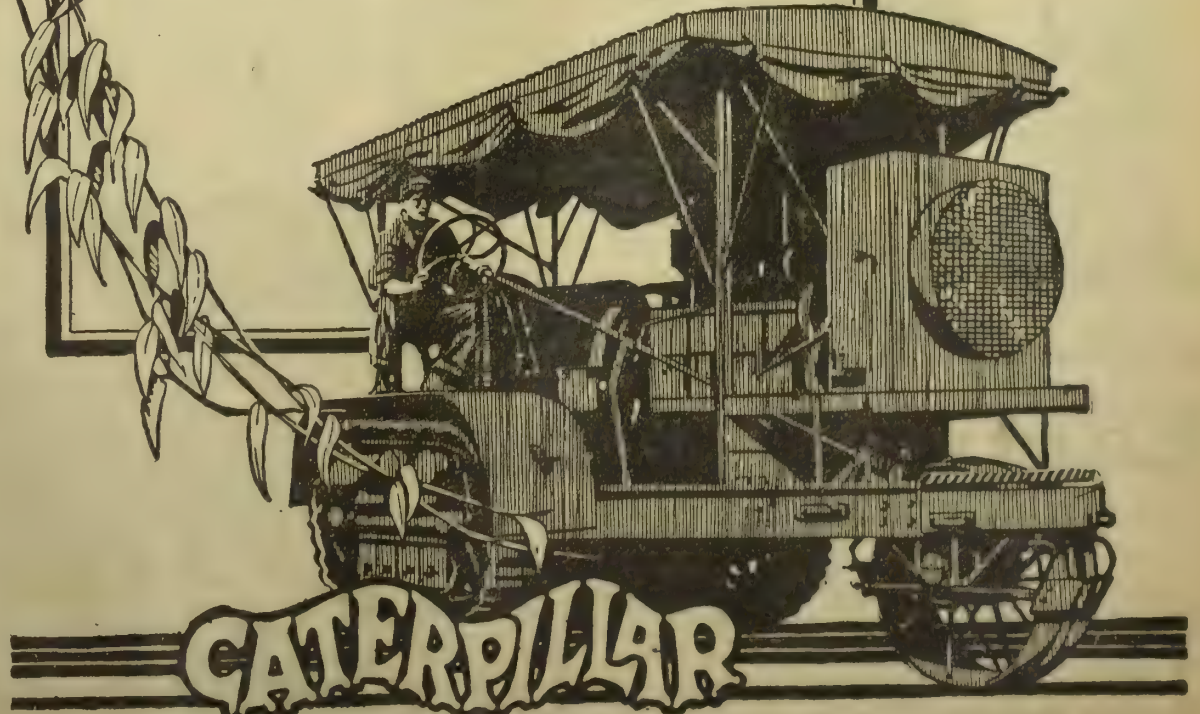
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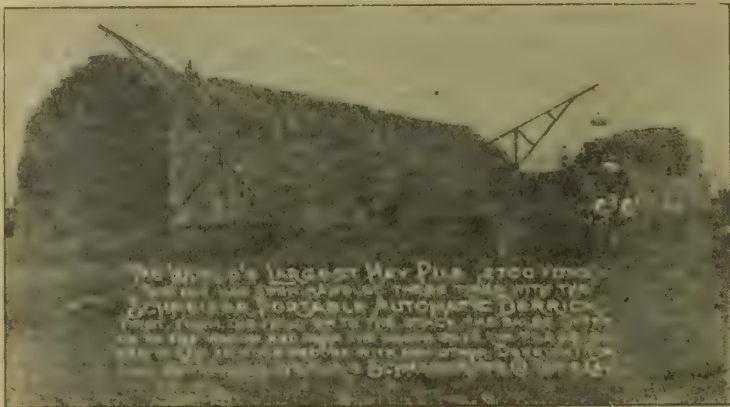
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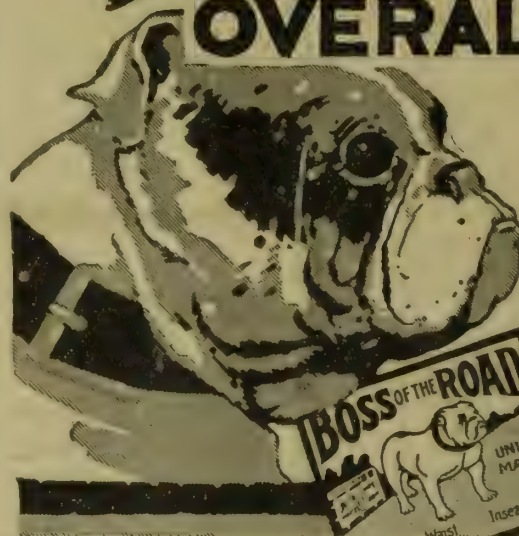
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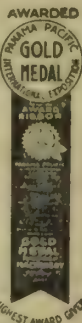
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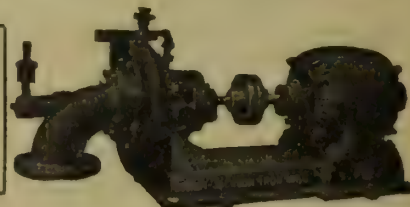
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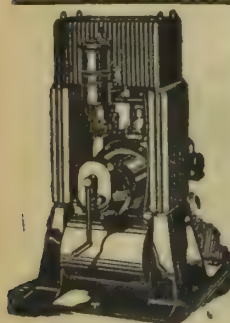
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THE PACIFIC RURAL PRESS

SAN FRANCISCO

JUNE 16, 1917.

LOS ANGELES

Purebred Sheep on Range Successfully Handled

[Written for Pacific Rural Press.]



HE 100 purebred Shropshire bucks I bought from Mechams last fall got the finest bunch of lambs I've had for ten years," said J. R. Garnett of Glenn county, when asked what he had done with them.

They were bought last July and put on a 15,000-acre range with 5,000 Merino Shropshire ewes. Usually the Garnetts sell all their lambs and buy ewes to replace those unlikely to be profitable the next season. But this year they are saving all of the female lambs on account of their quality. The bucks are to be kept on the range another year, then sold in small lots to people with smaller bands. After two seasons, the bucks are too worn out for use on big bands. The third year old bucks are not likely to cover so many ewes, but go off by themselves, especially if young bucks are put in.

This year's lambs were equalled or surpassed only by the lambs of ten years ago, when the Garnetts had almost purebred Shropshire ewes and the best bucks they could get from Glide and Bowers. The crossing for Merino blood in the ewes since then has been due to the higher price they get for wool on account of the Merino blood. The lambs are high priced anyway. Wool used to be cheap; hence the effort to get a better grade.

Early January lambs have been raised, but there was too much loss due to storms to suit the range sheepman, so now the Garnetts

breed to begin lambing in February. The 15,000 acres is all fenced and cross-fenced into fields of varying sizes, according to the lay of the land. Basque herders are satisfactory, and two or three men ride the boundaries.

COYOTES POISONED.

"We have had a good deal of trouble with coyotes and have tried half a dozen ways to poison them," says Mr. Garnett. "The best we have found is about like this: With a round stick and a flat one mix balls of lard and sugar about the size of a walnut, never touching the balls with human hands. With the round stick, punch a hole in the ball and insert a capsule

containing 2½ grains of powdered strychnine. The capsule is picked up with the greasy end of the round stick, to which it adheres. Smear over the hole and put each ball, by means of the sticks, into a little waxed paper sack. Whenever a coyote is heard, just untwist a sack and dump the ball, without touching it, into a trail in that neighborhood. When you find a carcass, put a poisoned ball in a trail about fifty feet each of two directions from the carcass, putting one on the side whence the animal is likely to come. Dead coyotes have been found, though nine out of ten will

go to a hole to die.

FEED, SALT, AND WATER.

Each field runs to water. Salt is given once a week, generally in troughs which have to be moved in wet weather on account of mud. Sometimes it is fed in piles on the ground six or eight feet apart to give room for sheep around each pile. "I never knew of a sheep overeating salt," says Mr. Garnett.

Last season was a hard one. There seemed enough moisture on the Garnett ranch, but cold weather held back the growth so the short feed for the sheep did not profit by the late rains. Foxtail, which makes fine feed until the beards develop, sprouted in the early rains but died down in mid-winter, so that it did not get far enough on the late rains to get into the wool, which was sheared about May 1.

Foxtail heads softened and seeds swelled by fall rains make excellent sheep feed, so much so

that the Garnett bands came through the winter in good shape without extra feeding, though many other sheepmen hauled hay as much as twenty-five miles. Good foxtail is valuable if it does not ripen before shearing.

POISON WEEDS.

The common saying that sheep found dead of poisoned weeds were the best in the flock has some basis in fact, thinks Mr. Garnett. Greedy sheep eat poison weeds and all, while careful sheep spit them out. Greedy sheep are the largest and fattest because they are more active and eat most.

(Continued on page 733.)



The above is a splendid specimen of the mutton type of sheep. This wether took the championship honors as a lamb at the P.-P. I. E. in 1915.

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EDITORIALS

HOW CALIFORNIA WAS DIVERTED.

IT IS really surprising that so many tiddleywink and two-for-a-nickel propositions for war service could command even momentary attention in a State born and reared for great things as California was. When the Macedonian-cry came from the entente allies to send men, money and food for the world's deliverance from tyranny most California exhorters broke forth into famine-fending, which might have been reasonable enough if San Francisco bay had been full of submarines and Hindenburg had drawn his line along the crests of the Sierra Nevada. Under such a menace, backyard gardening, child labor, menu-mending destructive of appetite and reductive of working force, might be reasonable because unavoidable. But all these things, which came first by patriotic impulsion, had no relation at all to the answer of the allies' appeal because they were related to starvation-fighting at home and not to bounty-spreading abroad. At the moment what seems to be the result of this hysterical propaganda is disclosing itself in several ways: the intrusion of a chance of local over-production of boosted products, which darkens the commercial outlook to such an extent that no one can calculate future values and therefore will not enter upon contracts: the danger that this condition may depress values unduly because anticipated amateur production may fail to arrive; the chance that amateur producers may either lose money through consuming food which has either cost them more than it is worth or may later have to add the cost of new purchases to that which they have lost through their failure at production. Of course, some new conditions may appear later, but just at this moment it seems probable that exhortations to amateur production have seriously endangered the farmer's chance of handling his crops of potatoes and onions at a fair profit and at the same time have assured the consumer no trustworthy substitute for the farmer's effort and investment in production.

MISFIT LABOR PHILOSOPHY.

IT IS largely this mistaken agitation for starvation-fighting by backyard farming and for wild-cat farming by amateurs who knew not what they did, which is also to be blamed for the new inrush of the political push into the farm-labor situation. If California's real duty, to produce large surpluses of imperishable and transportable food products just as soon as possible, had not been obscured by the altogether foolish and unnecessary exhortation for starvation-prevention, we probably would not have heard the outcry for child labor and hobo reclamation as substitutes for the capable and dependable labor which the producer must have to get his product. It was very interesting, and rather sad also, to listen to the declarations of the various State and National commissioners and organized labor magnates concerning the labor which the California farmer needs and the only labor they proposed to allow him to have. It was interesting because all these

farm-labor doctors diagnosed the California farmers' problems from their observation of farming in the Eastern States and in Ireland in the days of their far-away youth. There was a cosy lot of philanthropy and humanity in their prescription, of course, but it had no more relation to the present problem of doing the State's duty in feeding distressed Europe than a backyard potato patch has to a California farm which grows a shipload of grain or a trainload of beans. It is possible that in fifty years or more from now California may be subdivided into a million small farms, independent by mixed husbandry and largely feeding a resident farming population of twenty millions, as owners and helpers, by the labor products thereof, as may be in old-settled and largely populated countries. And in that distant day there may be policies, methods and purposes which are wholly impracticable of pursuit at this time. To recall impressions of some other thickly settled country and to dream dreams of what California may be two generations hence, and, on the basis of such memory and dream, to declare what California farmers must now do to save the world, is simply to insult the intelligence and impeach the devotion of the men whom the country is calling to do their best work to win the war. Really these local statesmen and social economists who are so free to declare on all occasions that there are boys and girls and idle town-people enough to handle California's war-time production of surplus foods, should be muzzled in the interest of the country's safety. They are giving aid and comfort to the enemy by reducing the food-producing capacity of this State. We shall not be surprised at all if it should appear to these parties later that they have already had rather more than desirable to say about what the farmers should have and do.

A CALIFORNIA-SIZED PLAN.

FROM the gloom of small things it is really very comforting to hear of a possible undertaking which may embody the California spirit and quality of getting somewhere. We hear that the College of Agriculture at Berkeley is considering plans for a broad promotion of wheat growing in this State for the crop of 1918 and for making a most concrete and practical contribution of knowledge thereto. How the college staff will attack this subject, or, in fact, whether they will attack it at all or not, we do not know—but we desire to discourse a little upon the proposition because it strikes us as exactly the kind of thing which California should undertake in discharge of her patriotic duty to the world and because it appeals to us as a thing safest to do, on the basis of assured value of product, and a thing with which California can unquestionably come through. Of course, everybody knows that the sad condition we are now in (that is, producing in 1916 only 5.6 million bushels of wheat and buying about the same amount from other American States for our own eating) is not due to any lack we have in capacity for growing wheat. California's wheat product has been eight times her present output. It was 44 million bushels thirty years ago and 45 million bushels twenty years ago. Nor was California's capacity for wheat sacrificed to her passion for barley. In 1896, when she made 45 million bushels of wheat, she also put out over 38 million bushels of barley and her greatest barley crop was but 46½ million bushels in 1910. Therefore, California lost seven-eighths of her wheat crop and only gained about one-fifth in barley and has since lost that because the barley output in 1916 was the same as barley in 1906. But if it should be claimed that California cannot return to her eminence in wheat because the land has gone out of cereal service into fruit, alfalfa, beets and what not, the fact remains otherwise, as the current acreage in barley shows. And though all barley land is not available for wheat, and though we could not afford to use it all for wheat if we could, there is much land recently in barley which should go to wheat because barley is not widely available as a bread grain and because "strictly limited" is being stamped on the world's beer. If, then, wheat should borrow considerable land from barley and if wheat should go on much alfalfa land of in-

ferior stand and as the sound science of rotation demands, we would have land enough for as much wheat as we ever grew in this State, and if wisely grown and if some of the alfalfa water were given to the land after breaking up this summer, we would get acre-yields of wheat in many cases which would match the traditions of the pioneers.

WHY WE SHOULD DRIVE ON WHEAT.

BUT THERE are other considerations which should move land owners to wheat just at this time. There is probably no crop so sure of money and so well within reach. We had no such per-acreage of tractors when our great wheat crops were grown as now. If we have lost combined harvester and header and thresher capacity it can be easily recouped. It will be a movement which will lessen the demand for man-power instead of multiplying it, as nearly all recent exhortations for new crops do, and will thus largely side-step the labor problems—for a man can easily divide his own bath tub and his morning paper with his tractor chauffeur, while his crew of mule-skinner and roustabouts will usually find quarters quite to their liking on the larger grain farms.

But the chief consideration at the moment is the great war service which California can render next year in increasing the white-bread timber which the world now most needs and will need for some time even if peace should quickly befall. The State will first assure its own supply of bread free from debasement and set free the present requirements from other States. Beyond that it may contribute many times as much to the world's general supply. And while doing that it will advance its own farming knowledge and resources, for to get more high-priced wheat better farming must be done and this means freer investment in fertilizers and in high-class farm machinery and the use of water in addition to better work for rainfall conservation. And all this effort and enterprise will make safer and more profitable all other kinds of farming we are doing and thus help a State which helps the world.

SHEEP AND WOOL REVIVAL.

RUNNING along this trench reminds us of another revival of California's historic greatness which should not be lost sight of in the crush of small things which are being impressed upon California farming. It is the revival of our sheep and wool industry, in the line of which many suggestive things may be found on other pages of this issue. Bad as the current war is, it must be credited with saving two of our great industries from strangulation by free-trade politics. One is the beet-sugar industry, which is now speeding along unexpectedly and may advance for a generation, because such a sugar consumer as the United States should have its home supply adequate and permanent, and the fact will be better appreciated in the future than in the past. The other activity which was narrowly rescued from collapse was the wool industry. The growing industry was being punished severely for the transgressions of its wicked partner, the manufacturing interest, and all that the California growers could do under the intelligent leadership of Mr. Ellinwood to get a tariff which would be fair to grower and to consumer of woollens would have availed nothing if the war had not furnished growers far more protection than they needed under ordinary conditions. And wool is another essential product which this great country should not seek abroad. The reformers used to scout the claim that the United States would suffer in case of war if it did not provide for its own supply and even the proponents did not look very scared when they urged the fear of war, for they had not much faith in it except for the sake of argument. But war came just in time to avert the knife-hand of free trade from reaching a vital part and now we have every chance of re-establishing our wool industry with such protection as a scientific, and not a political, adjustment of the relation of things shall demonstrate to be reasonable. And under such a blue sky we shall have a growth of our sheep industry not alone upon the exceptional fine-wool resources of California ranges but with the added mutton resources

of our farms and feed lots. To the rich and characteristic services of the sheep in California farming policies, as set forth by other writers on other pages of this issue, all readers should give attention. Since the dawn of history no animal has given the human race so much for so little as has the sheep, and no animal has more richly rewarded the efforts of breeders who have ex-

ended time and money to help the sheep to adapt itself to various lines of usefulness. And now comes the opportunity for all farmers who will handle the sheep decently and protect it from its foes, all the way from mange-mites to mangy dogs, to profit by wise investment in bands of sheep for farm uses and for product-sale, as conditions may favor.

By
the Editor

QUERIES AND REPLIES

Inquirer Must
Give Full Name
and Address

What About Planting Imperials?

To the Editor: Kindly give advice concerning planting Imperial prunes. We have fifteen acres of exceptionally good bench land, gravelly loam, 3 to 6 feet, heavier gravel and less loam as you go deeper. The location is less subject to frost than most of the land here, but we will have to consider frost to an uncertain extent. I would like to know the nature, habit, productiveness, life, and best root stock for Imperial prunes, also market possibilities, past, present and future.—E. R. H., Kelseyville.

We are not keen about advising to plant Imperials. If a man has the variety doing profitably, he needs no advice to plant more. In an untried situation such advice is dangerous, for the Imperial is a shy bearer in most places. So far as we know, it is not more subject to frost than other prunes. Your chief question is how any prune will do on your gravelly soil over a gravel bed. Many trees go back on such a foundation, even in river bottom, and may go sooner on a dry bench, even though there may be a heavy rainfall. Unless you have tested out the matter with other fruit trees, we should be shy about it—unless perhaps we had water for one or two mid-summer irrigations. On such a soil the commonly-used myrobalan is doubtful: either peach or almond are safer. Imperials sell well when you get them, in a place where so large and late a prune can be sure of dry weather enough to cure well.

The Squash Bug.

To the Editor: I have quite a field of pumpkins which are up finely, just beginning to vine. I find they are alive with the large squash or pumpkin bug. Is there anything known in the way of a spray (wet or dry) that will rid the plants of them? I have tried spraying with dry Paris green, but it seemed to do no good. The field is too large to hand pick them.—Grower, Chico.

Paris green will not injure squash bugs because they suck juices and do not eat the leaf surface on which the poison is spread. The young insects can be killed by spraying with kerosene emulsion, but the old ones are hard to get by any process except hand-picking and smashing. One should always be on the lookout for this pest of the melon family and pounce quickly on the first appearance and stamp out the trouble by hand-picking. Various growers have reported some success with a spray of creolin (a tablespoonful to a gallon of water) also with powdering the vine and nearby ground with tobacco dust, also with a powder made by stirring enough kerosene oil into air-slaked lime to give it a good stiff smell of the oil. Unless one starts in very early the cost of treatment is apt to be more than the crop is worth. Fortunately the injury by the pest is generally limited.

Cover Crop for Orchard.

To the Editor: In sowing a cover crop in the orchard and vineyard is it necessary to have the soil from different parts of the field analyzed to ascertain what would best be suited? Would you advise using a fertilizer when the seed is sown to bring a heavier growth? Of the various cover crops suggested, which would produce best results, rye, barley, vetch or mellilotus indica? Would a combination of any of the two produce any better results than either one of them alone?—A. C. I., Stockton.

It is not necessary to have analyses made for the purpose you describe. It is a good idea to push growth of a cover crop, if its growth is scant, by scattering a soluble complete fertilizer on the crop after it has started; or, if it does not need pushing, apply just before plowing under.

In this case, of course, the fertilizer is for the good of the trees. If you wish to get winter feed for stock, it is desirable to sow rye or barley with bur clover or vetch, but if you have no desire for feed sow either bur clover or vetch alone or both together, and let them lie down as flat as they like, for it is easier to plow them under. Mellilotus indica is not desirable for feed, but it is a good cover crop. We should sow that alone. All these should be sown as soon as the ground is wet down well in the fall.

Submarine Attack on Spuds.

To the Editor: I have potatoes, planted March 8, which have been cultivated several times and watered once. Some of the vines are yellowing and some of the tubers are rotten. In such cases the tap root is always cut under the yellow top and you can always find a little yellow worm either in the root or in the tuber. How can I get rid of the pest and would it be safe to save the sound tubers for seed?—H. L., Lakeside.

Why did you not send us a worm so we could see what is getting into you? Catch a worm, drop him in a homeopathic vial of alcohol: bore a hole in a little block, put in the vial and mail with your statement about it. There are so many "worms" and they have such different habits that the word worm does not mean much that is definite to us. Presumably you have wireworms, and in that case they will soon leave the potatoes and the sound spuds will be safe for seed when properly mature and prepared for planting by exposure to the light in a screened place, where the moth cannot get at them to produce another kind of a worm which will work all summer.

Fertilizing Tomatoes.

To the Editor: What kind of commercial fertilizer is best for tomatoes and how should it be applied? The soil is sandy loam.—M. D. J., Ontario.

You must be careful not to use either water or fertilizer in excess in tomato growing, for the result will probably be very large plants, casting blossoms and very little fruit. But on such soil as you describe water enough should be used to get slow, continuous growth and good color of foliage; on a richer, more retentive soil neither water nor fertilizers may be necessary. It would usually be advisable to use 500 pounds of complete fertilizer per acre on a medium soil and even twice as much on a poor soil might not be too stimulating. The fertilizer may be placed near the plant if scattered well, but should not be bunched on the roots. It can either be scattered on the soil before irrigation or on the moist soil afterwards and cultivated in. The latter is the better way on a soil which takes water very freely.

Apricots Still Going Off.

To the Editor: What is the matter with my two-year-old apricot trees, which are dying. They seem to have a disease resembling "fire blight" of the pear. The leaves wither and fall off, and the sun does the rest to the naked limbs. There is also a few black bugs or beetles, with red spots on their wings, working on the new growth.—New Subscriber, Arbuckle.

This seems to be a late manifestation of the injury called "sour sap in the top," of which Prof. R. E. Smith gave a description in the Rural Press of April 21—caused by a drop in temperature after the sap rose. Such injury to the trunk or main branches may sometimes reveal itself quite late. Treatment is cutting back to good growth wherever it breaks out, and if none appears the injury is too severe for recovery. You can spray the exposed wood with whitewash and watch for a new

start. The insects you mention have no connection with the trouble and unless you can see that the leaves object to their presence you need not.

When to Use Nitrate.

To the Editor: I have a 60-acre patch of dwarf milo on sandy loam soil—old grain land which had been idle for about four years—and partly covered with "telephone" weeds. I plowed in the winter, about 12 inches deep, breaking up a plow pan and bringing up a lot of reddish soil which had never before seen the light of day. The ground was twice harrowed and all sowed to milo before April 12. I have harrowed once since it came up and howed weeds twice. I plan to cultivate it once more and let it go. I shall plow shallow and seed to barley in the fall. Would you advise applying nitrate of soda on this ground at that time? How much and how should it be applied?—H. T., Merced.

We would not use nitrate in advance of the whole season's rainfall or a plant will be growing the following spring. If you were sowing for winter pasturage, it would be different. If you are sowing for grain or hay, scatter 200 pounds of nitrate on the growing crop after the heavy rains are over—providing you are not getting a good strong growth without it.

Box Elder Bugs Not an Oak Pest.

To the Editor: I am mailing to you some bugs, which I find in large numbers around the ground under live oak trees and under brush piles. The caterpillars are eating all the leaves from the live oak trees and I think these are related to them in some way. Please give me their name and habits.—W. P. M., Calistoga.

The insects you send are the box elder plant-bug (*Leptocoris trivittatus*). They are slim bugs about half an inch long, dull black with red markings. They feed chiefly on the box elder tree, but sometimes take to jabbing ripe fruits. They have no connection with caterpillars eating oak leaves. The parents of these caterpillars are two or more kinds of moths, not hemipters, to which your specimens belong. They and their progeny cannot eat leaves because they are suckers, not biters.

Shriveling Peach Leaves.

To the Editor: The leaves on my peach trees seem to be shriveling. Some say it is because they were not sprayed last spring. Others suggest it may be some disease. The leaves are of a good color and the trees look healthy, other than the shriveling of the leaves.—C. J. A., Stockton.

If your leaves are simply shriveling, there is sour sap or they are short of moisture. If the leaves are swollen and distorted, the trouble is curl leaf—to be guarded against next year by spraying with lime-sulphur before the buds open.

Laws on Weed Growing.

To the Editor: Is there a law in this State prohibiting the raising of Johnson grass, the different kind of thistles, cocklebur, etc., and if so, what authority must be notified?—C. A., Richfield.

There are laws to prevent the growing of noxious plants in certain places whence their seeds may be distributed. The State Horticultural Commissioner is charged with the execution of these laws and inquiries should be addressed to him at Sacramento or submitted to your county horticultural commissioner, who will give information and advice.

New Potatoes for Seed.

To the Editor: Will new potatoes raised this spring make seed to plant for a fall crop?—G. O. B., Modesto.

Yes, if thoroughly matured as shown by the dying down of the top growth, and if the potatoes are afterwards exposed to the light sufficiently to green the skin and start the eyes. This should be done in a room with openings screened to exclude the potato moth.

California Weather Record

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau at San Francisco for the week ending at 5 p. m., June 12, 1917:

Stations—	Rainfall Data.		Temperature	
	Past Week.	Seasonal To Date.	Normal To Date.	Max'm. Min'm.
Eureka	31.36	45.53	64	40
Red Bluff	19.25	24.81	100	64
Sacramento	12.95	26.06	92	48
San Francisco	16.78	22.22	81	46
San Jose	12.03	10.78	88	42
Fresno	7.25	9.68	100	52
San Luis Obispo	23.03	20.51	86	44
Los Angeles	15.24	15.62	80	50
San Diego	10.13	10.01	68	64

Drying and Curing Fruits

[R. Schmidt, Division of Pomology, University Farm, Davis, Cal.]

Deciduous fruits of all kinds, including grapes and figs, may be dried in the sun or by means of artificial heat in drying houses made for the purpose. Most of the drying in California is done in the sun. Certain fruits, such as apples, pears, peaches, apricots and Adriatic figs, become dark in color during the drying process and must be bleached in order to comply with the demands of the market. Bleaching is commonly done with sulphur fumes, which add nothing to quality but improve the appearance. Shallow wooden trays, light but strong and uniform in size, are best.

On the whole, the climate of California is quite favorable to the drying of fruits in the sun. However, in cool weather, in the coast region, or when early rains occur, some method of drying artificially may have to be resorted to. In such cases a cheap home-made drier will answer. Construct a small house of light lumber, or other material such as roofing paper, make it as nearly air-tight as possible and sufficiently large to hold about twelve trays so that one will slide in above the other, with an inch or so of air space between. Allow sufficient space under the bottom tray to place a small stove costing about \$2.50. This house may be used for sulphuring apricots, peaches, etc. This drier is only rec-

quantity of fruit to be handled. Trays for commercial drying are usually 3x8 feet, but any size will do for very small quantities, provided they are all alike. Pine shakes make a good and cheap bottom. These are 3 feet long, 6 inches wide and come in bundles of 25. Do not use redwood for light-colored fruit, as it will discolor the fruit. The sides and ends are pieces 1x2 inches, either pine or redwood. The shakes are nailed to the sides and the latter are nailed to the ends with long cement-covered nails. The bottom of the tray is strengthened by nailing on lengthwise three extra heavy laths, made especially for this purpose. One lath is put along either edge and one across the center from end to end. The center lath is clinched to the shakes. In the absence of trays, for a small amount of fruit, use boards laid side by side, canvas, or even paper, but these will not answer for covering or stacking the fruit in case of wet weather or for sulphuring.

APRICOT DRYING.

For the best results apricots should be picked off the tree, although shaking them off and allowing them to drop on a sheet is also practiced. They should be ripe but not over-ripe, i. e., soft. They must be halved and pitted, care being taken to make clean cuts and avoid tearing the skin or flesh. The pieces are placed on trays,

come the possibility of the fruit becoming too dry in very hot weather, the trays with apricots may be stacked before they are entirely dry and allowed to finish in the shade. This improves the quality of the fruit. If the dried apricots have become too dry, or look dirty, put them in a perforated can or wire basket and dip for a few seconds in boiling water. Allow them to dry a little on the surface and then put them away in sacks or boxes. The water softens and improves them and there is no danger in putting them away in that condition, provided the water was boiling when they were dipped.

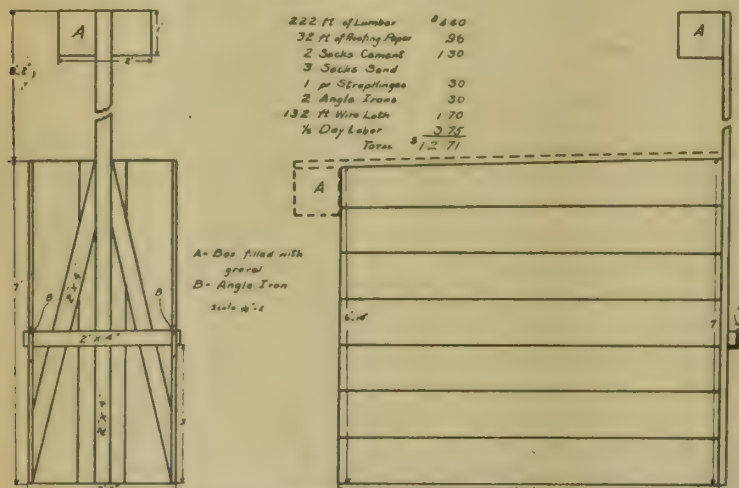
BERRY DRYING.

Bush fruits, like blackberry, raspberry and loganberry, are often dried. Pick the fruit in the cool part of the

day. This will cause the berries to lose less juice and retain their shape better. Spread the berries evenly on the trays and do not move them when once placed. If the trays are too full, the fruit will become mushy. Where berries are handled commercially, artificial methods of drying are usually employed. When sufficiently dry, remove the berries during the warm part of the day, otherwise they will stick to the trays, and store in a clean, darkened room.

Fruit exports from the United States during 1915 were valued at \$34,229,906. The values of the principal fruits exported were: Apples (dried, green or ripe), \$11,358,124; apricots, dried, \$2,241,061; oranges, \$3,851,013.

Sulphur House (continued)



Plan of Sulphur House, showing details.

commended to finish fruit already partly dried, taken from the ground after being dampened by rains, or for small amounts of fruit.

A very cheap, light and quite satisfactory sulphur box may be made in the following manner: Make a framework of light wood, sufficiently large to enclose a stack of trays, and cover this with the building paper, making it nearly air tight. The box should be open at the bottom so it can be slipped over the trays when stacked and should be two or three inches larger than the stack in each direction. A piece of the frame may be extended near the bottom on each end to serve as handles. A hole may be made in the ground beneath the stack of trays into which the sulphur is placed, either on the ground or in some kind of plate or vessel. Light the sulphur by means of a match and paper or shavings partially covered by the sulphur.

The size of the drying trays it is advisable to use will depend upon the amount of help available and the

"cup" side up, and as closely together as possible, then put into the sulphur house or covered with the sulphur box. Beneath the trays in a hole in the ground or in an iron dish place two or three pounds of sulphur and then light. Make the box as airtight as possible. The time required to sulphur apricots, to give them a light color, varies with the condition of the fruit. It usually takes from two to three hours. The fruit should become a golden-yellow and should not turn brown.

Sulphuring also shortens the drying period and prevents rapid decomposition and infestation by insects. When the fruit is well sulphured the juices collect in the cup of the apricot and for this reason it is advisable to handle carefully on removing them from the sulphur-house, in order not to spill the juice, which would cause the fruit to stick to the trays.

Let the fruit remain on the trays in the sun until dry. Apricots are dry when they are leathery to the touch, not hard and brittle. To over-

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Here and There in the Fruit Business

[Written for Pacific Rural Press.]

High Budding vs. Sour Sap.

Budding of prune nursery stock eight to twelve inches above ground to help prevent the sour sap, which destroys a serious percentage of prune trees under four years old, has been practiced for three years by Miller & Gobbi of Sonoma county. Their customers have repeatedly come back for more of the high-budded stock, so much that their 10,000 trees last year were all ordered ahead of time and orders are already in for next spring's planting.

It is common observation that young prune trees may die from sour sap, but their myrobalan stocks may send up vigorous shoots. In the river bottom orchards and others water sometimes stands around the trees for awhile. Often dirt is banked up against their trunks. If the prune bud is above this water and dirt, thinks Mr. Miller, the damage is negligible.

Mendocino Fruit Crops.

Prunes in Mendocino county are 25 to 90 per cent of a normal crop, depending on soil and location which varied the condition of bloom during the rainy spells of last spring, according to Secretary C. A. Bernhard of the Ukiah Farmers' Club. Pears will be a good crop, with very little blight showing. People keep this disease severely cut out and it does not seem to spread so virulently as in many sections. Scab seems much less severe, perhaps due to timely spraying.

B. M. Bucknell, who bought 400 tons of prunes last year, estimates this year's crop throughout the valley at 75 per cent, due to rain and some slight frosts. He has paid 5 to 6½ cents base for what he has bought of the coming crop, and as he says they average 60's, that means \$130 per ton delivered in town at 6½ cents basis, which has been the average price.

Frame for Cherry Box Making.

For rapid cherry-box making have a heavy iron plate, unwarped, on a stiff bench. At the edge of this on

the side of the bench have spring clamps fastened vertically at just the right distance to hold the ends and center pieces vertical ready to nail the sides on. One side of each clamp is fixed. The other side may be a piece of spring steel flared at top and sides to admit the pieces easily. Under the clamps with a half inch clearance is a piece of railroad rail or other heavy, straight bar for the ends and center piece to rest on, while the side is being nailed. The first side is then turned to rest on the railroad iron, while the second side is nailed on with no trouble for spacing or getting a right angle at center other than shoving the pieces into the clamps. The bottomless box is then laid flat on the iron plate and the top nailed on, with no warping or jiggling. It is then ready to be packed.

Sonoma Prune Good Crop.

Sonoma county will have more prunes than last year, as surveyed by J. F. Miller of Miller & Gobbi, who operate nearly all over the county. Old trees, poorly cared for, have light crops, but young orchards are generally loaded. Cloverdale has a normal crop, which is about 300 tons, and Anderson Valley a big crop of about 200 tons. Windsor has a big crop, and Healdsburg well up to normal. Miller & Gobbi, who joined the Prune Growers' Association, are doubling the capacity of their plant to three cars per day, and will pack for the Association under contract at a trifle over a cent per pound.

Cherries Need Drainage.

Cherries in the Sebastopol district are about 50 per cent of a crop, as estimated by John F. Miller, who operates considerably in that district. Cherry crops are always spotted. Cherries planted on heavy bottom land with an oversupply of moisture make good growth, but usually fail to set a crop, says he. They want well-drained rolling locations, with lighter soil but not too dry.

Late Grape Irrigation and Water Berries.

[Written for Pacific Rural Press.]

J. A. Schlueter of Kerman picked 6,000 trays averaging 25 pounds green from eight and one-half acres of six-year Thompson Seedless vines set 10 by 12 feet apart. Frank Henry said last spring there would be 7,500 trays, of 20 pounds per tray. Mr. Schlueter was skeptical when we saw him at that time, but this fall at grape picking, although he has plenty of avoirdupois, he was nearly walking on air. He had never received half a ton of raisins per acre before, though he had manured the vineyard every year except last winter.

Irrigation was withheld under Mr. Henry's directions until June, after the grapes were well set. A four and one-half foot head of water was run down the rows. Backfurrows had been plowed down the centers, and the water was checked by little dams crosswise nearly to the rows.

The second irrigation, July 26, was a thorough soaking, contour checks

being made, to fit the lay of the land, some of them enclosing as many as eight rows 200 yards long in a check. Cross levees were shoveled as needed to spread the water thoroughly, and the water ran 55 hours for the eight and one-half acres.

The third irrigation was applied August 22 because digging down in the vineyard showed the need of it. The leaves had started to curl and lose their color and had not entirely recovered when we saw them, but were expected to revive after the fruit was off. In mid-September, moist dirt was easily found two inches under the surface. The water was applied from back furrows the same as the first irrigation. It took 40 hours. No waterberries or mildew developed. Mr. Schlueter intends hereafter to irrigate only when the vines are about to need it, not following the commonly practiced early irrigation, and not being at all afraid of late irrigation.

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The French or Belgian Endive.

To the Editor: I just happened to be reading your paper of February 17, and I wish to clear up the doubt about this endive. Having grown it myself, here and in Belgium, I ought to be able to help the inquirer about it. He refers to what is called in the market "French endive"; at least that is the common name given to it in New York. It is altogether different from the real endive. Its true name is Witloof, meaning in Flemish "white leaf." Its seed is catalogued by New York seed dealers as "chicory witloof."

It is simply a wild chicory, improved for that purpose. So is the chicory which is used as an adulterant of coffee, the root being roasted and ground. In Belgium it is used in certain proportion with coffee. The plant produces both a good-sized coat and root. After growth is finished in the late summer these roots are dug up. A few weeks later they are forced in succession throughout the winter season until the spring vegetables appear. This forced growth is sold in eastern cities at from 18 to 30 cents a pound retail. In the well-to-do parts of the cities of the East you are mistaken when you say it is used by "hyphenates." Only rich Yankees eat it. They have traveled in Europe and there it is found in most all the large cities, shipped from Brussels in Brabant, Germany. It is shipped on every steamer leaving Antwerp, as much of it as 50,000 pounds a week. That was eight years ago.

It was originated in Brussels and is called in French "Chicoree de Bruseelles."

Some stores of Polk street, San Francisco, get it from an Eastern importer, and pay a good price for it. Because of it being a long while in transit, the outer leaves rot very often and it has to be recleaned

for sale. The dealer sells it at from 50 to 75 cents a pound. One San Francisco firm claimed to be the monopolist of it. They pay for it 15 cents a pound per 20-pound basket in the East.

I grew perfect good-sized specimens of it and they were willing to accept it, but would pay only when sold! Good night. You may imagine. I ate it myself.

They claimed it is not liked on the Coast, it being a little bitter, which, however, is its best quality. Its wholesomeness is recognized in Europe. It is the first vegetable prescribed to sick people. It is, as a rule, cooked in Brussels, but used as a salad in the East.

The enormous price at which it is sold here is the cause for it being little used. A Belgian of Calpella, Mendocino county, sent some to the exhibit at the Ferry building, San Francisco, where it is in the Mendocino County show case. I sent some to the Sacramento fair through the Placer County exhibit commissioner. It was a beautiful specimen, but it never got anywhere.

I have given the way it is grown. The way it is forced is another affair. It is easier here than in Belgium. There is no need of tying up at all to it, as the first leaves are not used except for cattle feeding. I will give in detail the process at another time. There are 50 villages around Brussels where it is grown and forced, and to show what profits are made on it, let me say this: The land is sometimes rented at up to \$160 an hectare, or about two and one-half acres, a year.

It is a great industry, and with the hot house grapes, are two typical cultures, which would astonish any horticulturist visiting Brabant. Of course, the real source of it is hidden by the name, French or Belgian.—Dominique Boquet, Redwood City.

Bean Varieties' Requirements.

[Written for Pacific Rural Press.]

Bean planting on the edge of the great inundated Sutter Basin commences in February with Garbanzos, whose acreage is negligible. Six or eight years ago Chas. Johnson, who has worked Tharp Bros.' 400-acre ranch many years, planted Lady Washingtons July 26. These were harvested in good shape in November. Last year, according to Supt. J. W. Cloyd of the Sutter Basin Co., planting continued until July 22; but that was too late on account of frost and early rains, for the crop requires 90 to 120 days to mature. Planting proceeds as the water recedes, for plowing can commence within 10 days after the water is off.

Early planting of whites, pinks, and reds, would bring them into bloom when the hot July and early August north winds would blast the blossoms—about once in four or five years according to L. N. Tabler, who had 1,280 acres last year. Blackeyes stand such weather better as observed by Mr. Johnson, and are therefore planted first, especially if light soil is available, though they require only 100 days to mature. The other varieties are planted all at about the same time. Whites wouldn't

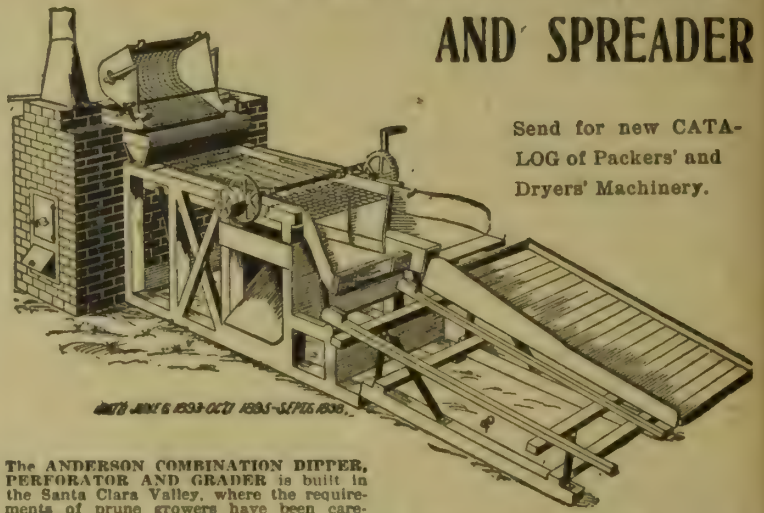
return seed if planted late on poor land, for they like black soil. Low wet ground may usually be planted late to Lady Washingtons, which need 100 to 120 days, or to red kidneys, which need only 90 days. Some people, says Mr. Tabler, claim to have had Lady Washingtons mature in 80 days and red Mexicans in 70; but this may have been for lack of water.

Small whites or navy beans require a longer season than the large whites (Lady Washingtons) as noted by Mr. Tabler, while pinks and red Mexicans mature in a shorter season. The colored beans are more salable in a bad season because they do not show weather stains so badly.

DRAINAGE BOGGY LAND.

Last year Mr. Burns of Douglas County, Nevada, drained two acres of boggy land with 1,000 feet of five-inch tiling. It was put under cultivation and this year irrigation was necessary. "The main points," says Mr. Burns, "are to lay the pipe deep enough, which can be determined by digging until the water begins to bubble up similar to a spring; and to have enough fall to take the water off."

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Field and Garden Suggestions

[Written for Pacific Rural Press.]

Bean Straw for Feed and Fertilizer.

Two-thirds of the rations of all the dry and young stock on the dairy belonging to J. W. Scott of Keyes, Stanislaus county, has been bean straw during the past winter, and a nicer, healthier looking bunch of stock could not be asked for.

Mr. Scott grows some beans every year as a second crop on his open land and stacks the bean straw close to the cattle corral. This with the coarse stems of alfalfa that are left in the mangers by the fresh cows, supplemented with some corn silage fed in open troughs in the corrals, constituted the entire ration fed.

The coarser stems of the bean straw are not relished by the cattle, and all such material which is left in the racks is used by Mr. Scott for bedding in the large shed that he uses for shelter during the winter. This absorbs the liquid manure and at the same time keeps the floor fairly dry at all times, and when hauled out to the fields and plowed under adds materially to the fertilizing value of his manure.

During the present year Mr. Scott expects to still further improve the fertility of his land by sprinkling raw phosphate on his manure before it is taken to the manure pit on the theory

Nitrate for Weary Apples.

Prof. C. I. Lewis of the Oregon Experiment Station reports that extensive experiments conducted by that station have demonstrated that soils are deficient in nitrogen when the leaves become yellow and thin, the apples very small; the annual wood feeble, short, and willowy; the buds weakened; and the trees are afflicted with various functional diseases.

It has been demonstrated that the trees can be very quickly brought out of such a condition by using nitrate of soda, which is applied a month before the trees bloom. It is surprising to see how soon the trees can appropriate this food; blossoms become vigorous; the set of fruit doubled; frost damage much reduced; the yield of fruit increased sometimes even tenfold; the foliage thick, green and luxuriant; and there is a disappearance of the functional disorders.

To get the best results, five pounds of the fertilizer should be sown broadcast and harrowed in. Where soils are deficient in organic matter, under non-irrigated conditions, use cover crops. Where irrigation is practiced, grow a shade crop, as alfalfa or clover, among the trees. In many cases the nitrate need not be applied more than once in three or four years, depending upon the condition of the trees.

Heavy Barley and Silage Yields.

Thirty-three sacks of barley and 16 tons of silage to the acre in one season was the yield secured by C. D. Hayworth on seven acres of his sub-irrigated dairy ranch near Modesto last year on old alfalfa land.

Mr. Hayworth planted his barley early in the year of 1916, and after allowing it to ripen, threshed 231 sacks of choice plump grain from the piece in June.

After irrigating the land and plowing, the field was planted to

white dent Indian corn July 4. After planting, he cultivated once and cut for silage in November. After filling his silo which has a capacity of 110 tons, he allowed the silage to settle four days and then filled again, stretching a chicken wire around the top so he could heap the fodder higher than the sides of the silo.

In this manner he not only secured an exceptional revenue from the seven acres but effected a big saving in his supply of alfalfa hay which enabled him to feed alfalfa hay this spring when most of the dairymen in his locality without silos were scouring the country for feed.

Aerates Adobe by Irrigation.

Adobe soil needs air as much as moisture. That is the reason, according to Will Beresford, that the Northern California Nursery Company doesn't cultivate the furrows by which their splendid 1200-tree bearing prune orchard in Tehama county is irrigated. The cover crop of melilotus was not plowed under until mid-May, 1917. Five furrows were made in each center, deep furrows. These were to be filled with water, and filled again when the first water should have soaked away. Then they would dry out and the ground would crack wide open a foot deeper.

"We must supply air to the bacteria that help make our ground workable and of value to the trees," says Mr. Beresford. That air won't percolate adobe like it does sand. Subsoiling would cut the roots. Irrigation is to be repeated, as in past years, until about July 1, when the size of the fruit has been made. Last year it rained hard the last of June, otherwise another irrigation might have been given. Then the furrows were filled and cultivated to hold moisture and prepare the ground for prunes to drop on it.

Not so much moisture is lost by allowing adobe to crack as one would think, but anyway the air is needed and water is plentiful here.

Cutting Weeds Between Rows.

A useful device to use in weed eradication between the rows of cultivated crops is a knife-shaped piece of half-inch iron with upturned ends that may be attached to a one-horse cultivator. One can be made by the local blacksmith, three inches wide and 30 inches long. Have it turned up three inches at each end and two holes bored so that it can be securely fastened to the cultivator in place of the regular shovels. The length can be regulated according to distance between rows and the depth it is to cut at can be varied by length of the bent ends.

Drainage Water for Irrigation.

Is there danger from using the drainage water from one orange orchard to irrigate another? It is reported that one company in Riverside county irrigated their lower-ten acre blocks with waste water from the upper blocks. The lower trees seemed to be damaged, but recovered when fresh water was used for irrigation.

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Users of tractors, engines, pumping plants, motor trucks, automobiles, electric motors, and other mechanical farm power are invited to make this department an exchange of their experiences and troubles.

A DIFFICULT IRRIGATION PROBLEM SOLVED.

Mr. Wm. P. Nutting of Fresno, Cal., has solved a difficult problem for the ranch owner who has been suffering by the loss of water from irrigation ditches. Mr. Nutting is very enthusiastic over his discovery, which he has applied with thoroughly satisfactory results to a tract of agricultural land which he is developing near Fresno. An irriga-

wood boards. He now has half a mile of these flumes and is planning to build another half mile. He finds this gives perfect control over irrigation.

The distribution of water is made entirely by gravity, using a pump to raise it at the source of supply. In addition to a uniform and dependable supply of water, this system of



The above shows Mr. Nutting's system of flumes.

tion ditch, and particularly in sandy soil, very often breaks as a result of a gopher hole that begins with seepage and finally breaks completely through. This necessitates expensive delays on the ranch while repairs are being made.

Mr. Nutting has devised a system of flumes, made of 1x12-inch red-

wood troughs can be taken up and relaid, thus changing the direction of flow with small expense.

Mr. Nutting's experiment with this type of irrigation is being watched with great interest by the ranchers and the same system will be installed on quite a number of other ranches.

IRRIGATION PREVENTS PRUNE DROP.

An irrigating plant, along with deep, loose soil, owned by the Northern California Nurseries Co. of Tehama county, helps prevent the early dropping of prunes, which generally reduces the crop in their section. Last year there was a general drop of 40 to 50 per cent all over that territory before July 1, but none on this orchard, according to Will Beresford, one of the owners. He believes this drop is due to sunburning of fruit. Scant foliage, permitting the sunburn, is often due to lack of water throughout the season, as well as to lack of plant food. The irrigating plant also permits them to leave their winter cover crop unplowed until along in May, when it has collected about all the nitrogen it can from the air to be put into the soil for tree food.

From the bearing orchard, including 1,200 old French prune trees, the crops have grossed close to \$40,000 in the five years, 1912 to 1916, inclusive. Last year the crop sold for \$10,514. Commissions and drying cost about \$525 and Mr. Beresford estimates that it cost \$3,000 to raise the crop, not including interest on investment, drying, or marketing. This year the crop is the heaviest ever set. There has been no fertilizing except a little manure and six years of cover crops.

Such a record could not have been approached without water and the cheap fertilizer the water made possible in the form of cover crops.

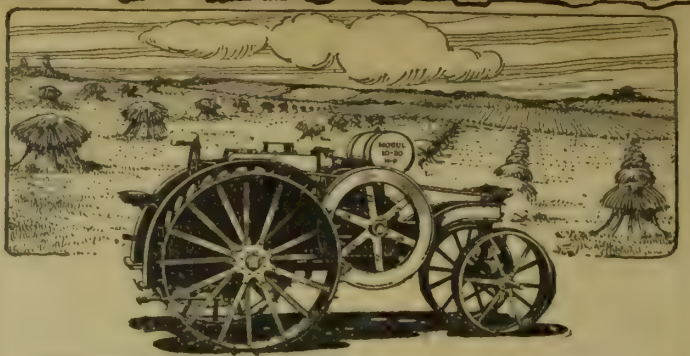
When we saw the orchard, May 10, the melilotus indica was three feet tall, and Mr. Beresford said its roots were three feet deep, loosening and aerating soil so bacteria could work deeper, and depositing humus and nitrogen far below the plow depth.

A six-inch pump had been run by gas engine power, but a direct connected electric motor was being installed for greater convenience. Its 50,000 gallons per hour were to be pumped from the river near by through a ten-inch underground pipe to a head ditch along the high side of the orchard, whence it would spread through five furrows plowed in each center through the melilotus. Then the cover crop would be plowed under to add its fertility and lightening to the soil. Additional irrigation is practiced as noted elsewhere.

TRACTOR PREPARES BEAN GROUND.

[Written for Pacific Rural Press.]
About the middle of May Chas. Johnson was disking 400 acres in Sutter county for the third time with a 60-horsepower tractor to keep down the weeds and prepare it in fine shape for plowing about June 5, after which it would be planted to beans. The morning glory was several inches high and promising trouble, but after the tractor and disk passed over them the ground looked clean and smooth when the plants had wilted.

Plowing eight inches deep by tractor would not turn clods under deeply because of the fine mulch made by disking. But to smooth it off and crush the clods turned up by plow-



The Mogul Kerosene Tractor in a New Size

IN 1915 we introduced the Mogul kerosene tractor in a two-plow size. It met with instant and continued approval, so much so that it has far outsold all other tractors of its rated horse power put together.

We now offer Mogul 10-20, the same popular and efficient type as Mogul 8-16, enlarged, improved, built to draw three plows instead of two. No changes have been made in design except the few indicated by experience, or made necessary by the higher power.

The engine is larger, but it is the same efficient, slow moving, kerosene-burning type. The transmission is changed to give two forward speeds instead of one. Mogul 10-20 travels 1.8 and 2.5 miles per hour. The same simple, safe chain drive is used, the same good force feed mechanical oiler. In all essentials Mogul 10-20 is the reliable, dependable, economical Mogul tractor you have heard so much about from your neighbors, or know so well by experience.

Booklets and folders with full descriptions of the new Mogul 10-20 are now ready and will be sent by return mail on request. When you write for them, address

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(Incorporated)



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Binders require less horse-team, works easier, cutting greater acreage. Will save grain on the corners. Gets down or lodged grain. Heavy crops have no terrors for a Cushman.

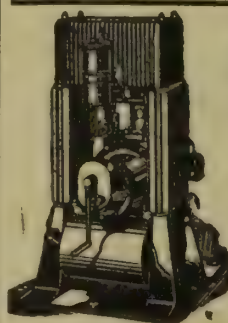
It is An All-Purpose Engine Will fit any grain, rice or corn binder.

IT WILL DO MORE KINDS OF WORK THAN ANY FARM ENGINE MADE BUILT LIGHT—BUILT RIGHT—GUARANTEED

Has wide range of speed—300 to 950 R. P. M.—and will operate wood saw, pumps, washing machines, cream separators, ensilage cutters, sprayers, threshers, battery rollers, grain grinders, electric generators, hoists, power blacksmiths' tools, concrete mixers, etc., to best capacity. Will furnish power to mowers, reapers, manure spreaders, etc.

BUY A CUSHMAN THAT YOU CAN WORK EVERY DAY
A 4 H. P. will drive 3-inch centrifugal, an 8 H. P. will drive 5-inch centrifugal with 20-foot head on 6½ gallons of distillate in 10 hours. See your dealer or write for information to

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Uni-Lectric lighting plant generates standard 110-volt direct current; operates from one to fifty lights, electric motor, electric iron, vacuum cleaner, electric toaster, force pump, churn, washing machine, etc. No Batteries—No Switchboard—and a better machine for less money. High speed gasoline motor, generator and automatic governor, all complete in one small, compact unit. Uses standard lamps and fixtures. Simple, easily installed, dependable, economical. Costs less than other systems to buy and to operate.

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SAN FRANCISCO, CALIF.

ing a "slabber" of three sections was to be used, smoothing a strip twenty-five feet wide every trip. Each section is made of eight 2x8's laid counter-shinglewise and held in place by crosspieces of 6x8 with the front end beveled like a sled. One of them was beveled too abruptly and it would not climb on top of the clods satisfactorily, but would shove dirt ahead of it. Clem Uhlen, who has worked on this ranch over a dozen years, pointed out that the beveled face should be a foot long on the 6x8 laid edgewise. A six-section drag 32 feet wide also helps work down the ground swiftly when planting time has arrived. About twenty-five horses are kept for cul-

tivation, but harvesting calls the tractor again into action on a big scale.

DESCRIBE REPAIR PARTS CLOSELY.

[Written for Pacific Rural Press.]
In ordering parts to replace those broken or worn in a tractor or engine, always give the size and model of the machine, when it was bought, and any other information that may help in getting the right piece sent promptly. An orchard tractor user broke the clutch of a well-known tractor made four years ago. He telephoned over one hundred miles for another and got it very promptly, but it was made for a different model. Another clutch was sent and it proved impossible to use, being three-eighths of an inch too wide. All this time the tractor was idle. It was then found that a clutch would have to be cast, and that took a delay of five days, with the clutch still to come. A neighbor loaned one to replace the broken clutch, but if that had been unavailable and if it had been plowing instead of cultivating time, the plowing could not have been done, intercrops could not have been planted, and the trees would have suffered.

A CORRECTION.

In the April 16th issue of our publication there appeared an advertisement of The Armco Iron Culvert and Flume Association in which it was stated that "Armco Iron is never less than 98.84 per cent pure." This should have been "99.84 per cent." The error was made, not through any fault of ours, but through a mistake in the making of the plate furnished by the advertiser. The Association have asked us to make this announcement correcting the error.

Housed implements depreciate at the following rates per year: Hay loader, 11.78 per cent; manure spreader, 11.67 per cent; corn binder, 10.03 per cent; harrow, 8.72 per cent; stirring plow, 8.42 per cent; grain binder, 7.91 per cent; mowers, 7.80 per cent; gang plow, 7.40 per cent; hay rake, 7.80 per cent; gas engine, 7.35 per cent; corn cultivator, 7.25 per cent; grain drills, 6.75 per cent.

The Ukiah Farmers' Club has sold about fifteen engines of 1½ to 3 horsepower for garden irrigation. Last year and year before, as well as this season, they have been selling larger engines and centrifugal pumps for farm irrigation. Many pumps are run by electricity.

A Mendocino county farmer has a big paddle wheel in Eel river geared to a centrifugal pump which throws water onto the level bench on the river bank where it irrigates a patch of alfalfa.

The little Hamilton vineyard tractor described in these columns about the time of the Fruit Growers' Convention at Napa as being perfected by a vineyardist of Sonoma county, is shortly to be put onto the market.

High Feed Costs Smashed!

Down they go—to smash! In scads of cases cut down a HALF! Thousands of farmers are selling their No. 1 hay, milling off grades. They're making the grandest alfalfa chop; fattening hogs, cattle, sheep, poultry and purse! making it cheaply, easily, with our famous patented Recutter Attachment (patented for feed use). Handles leaves, stems and all! No waste! no injuring color of hay. Makes dandy combination feeds from clover, rice, straw, cornstalks, bean straw, pea vines, oats and rye. Biggest guaranteed capacity 1200 to 2700 lbs. per hour. 600 to 900 lbs. of meal per hour with Junior Mill (run with 8 to 10 h.p. engine). Cracks peas, corn and beans.


SAMALLEY SILO FILLER

SEVEN SIZES
Tremendously simplifies silo filling. Grip Hook Force Feed table automatically feeds cutter—saves wage and board of from one to three men. Makes richest feed, increases silo tonnage.
Blower built independent of cutter. Let your fan spin fast or slow, the speed of knife shaft is unchanged. No belt to slip, wear out and waste time, money, power. Patented low-sliced one-pulley chain drive is faster, cleaner. Saves 1.5 to 1.4 power cost! Powerfully built. A fourth heavier with wonderful record for long service. Write for latest catalog and sample of chop to Pacific Implement Co., San Francisco, Cal., or Smalley Manufacturing Co., Dept. 41, Manitowoc, Wis.




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Louden Complete Line
BETTER BUILT—LAST LONGER



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I can ship at once any size or style WITTE High-Grade Engine—2 to 22 H.P.—Kerosene or Gasoline—Stationary, Portable or Saw-Rig—ready to run—Guaranteed 5 Years. You don't have to wait 6 to 8 weeks for a WITTE. You save \$25 to \$100. Choice of engines—Cash or Easy Payments. My Free Book "How To Judge Engines," by return mail.—Ed. H. Witte, Pres.
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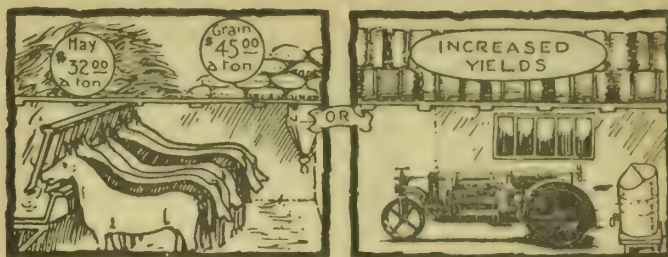


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THE WESTERN is a truck attachment, by means of which a Ford or other car can be converted into a commercial truck. Among the many cars that have been converted into trucks The Western Way are the Cadillac, Buick, Ford, Chalmers, Mitchell, Reo, Chevrolet, Maxwell, Overland and Studebaker. Buy a Western and Be Satisfied.
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\$6. to 8. PER Day

NOT ONE CENT!

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the Samson Sieve-Grip Model S-25 can save you from \$6 to \$8 every day it does not work!

The number of horses replaced by this tractor would cost that much to feed every day, whether working or not.

Start making this saving RIGHT NOW by using a

SAMSON SIEVE-GRIP

Reg. & Pat. U. S. & Foreign Countries

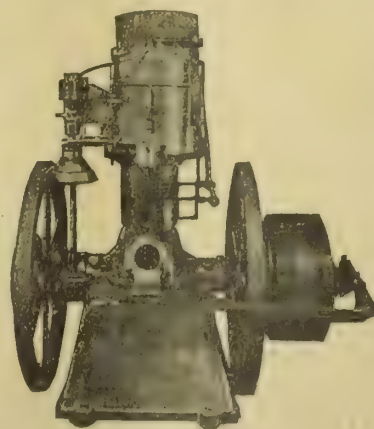
For stationary work the motor delivers its power straight to the belt-pulley—not a gear in motion.

Ask us how a Samson Sieve-Grip can benefit you—we'll send the catalog and "Samson Siftings" with our answer

Two Sizes—Models S-25 and R-12

SAMSON SIEVE-GRIP TRACTOR CO., Stockton, California.

With Gasoline at 4c per Gallon, an ordinary gas engine could not produce power as cheaply as does the Victory Oil Motor



12 to 100 H. P.

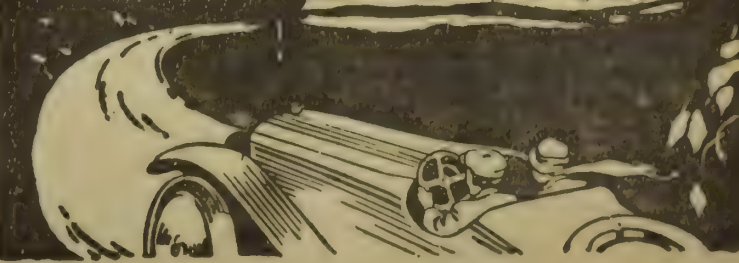
This engine is made in California to operate on California asphaltum base oils. It has no valves, cams, batteries, or small working parts. No heating of fuel, no hot balls, and no torch required for starting.

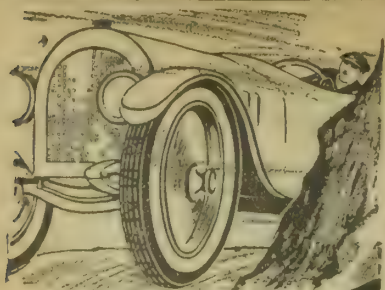
Ask for our Rigid Guarantee. Owing to scarcity of material our output will be limited. If you want a Victory Motor this year, put in your order NOW.

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GOOD BYE! Morning Glory

Don't let this troublesome weed sap your soil and ruin your crop.

NONPAREIL

is the one sure exterminator that does the work without injury to the ground. Read what Luther Burbank says: "We find that Nonpareil destroys not only morning glory but also horse-radish. We consider it a thoroughly satisfactory weed exterminator."—Luther Burbank.

One gallon of Nonpareil is sufficient to kill 250 plants. It does not prevent the ground from producing regular crops. It acts as a tonic to the soil. It is easy to apply and economical to use. Write today for interesting folder on this profit saver.

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GENERAL PAINT & VARNISH CO.,
112 Market Street, San Francisco, Cal.

South American markets for fruit from the United States have grown steadily since the war started. In both Brazil and Argentina the American apple is supreme in the better class of trade, and its sale is limited only by the number of people who are able to pay the prices asked for it.

General Agricultural Review

Field Crops.

The potato crop of Santa Barbara county, it is said, will be twice as large this year as last.

It is said that the bean acreage this season of Los Angeles county will be 75 per cent above normal and a greatly increased crop is expected.

The area planted to cantaloupes in California this year is estimated by the United States Department of Agriculture to be 17,300 acres.

Riverside county's potato crop, it is said, will be 300 per cent above normal this year and its bean acreage is 50 per cent above the average.

There have been a hundred thousand acres planted to kaffir corn in the Imperial Valley this season. The cold spring has caused some replanting.

Rice has not made a great showing at the University Farm so far as a feed for hogs, Professor J. I. Thompson reported to the California Swine Breeders at their meeting last week.

Out of 12,000 acres planted to rice in Yuba county this year, 9,000 acres have been put in by the Fleishhacker interests of San Francisco, County Horticultural Commissioner George W. Harney reports.

California's 1917 potato crop will be the largest in the history of the State, owing to the great increase in acreage, according to Thomas H. Longton of Sacramento, the "potato king" of the Sacramento Valley.

The California Stock Food Company, owners of the Kerman Alfalfa Mill, has announced that the mill will begin grinding alfalfa meal. The Stock Food Company will begin the season by paying \$11 a ton for hay.

The grain crop of Santa Barbara county is short this year. C. W. Beers, Horticultural Commissioner, says the yield of wheat and oats will not be over 75 per cent of an average.

Gardner Narbowne of Los Angeles has raised on his ranch near Mecca, in the Coachella Valley, on twenty-six acres, 10,000 crates of onions, which he has sold for \$15,000, yielding a net profit of \$10,000.

It is said that the efforts of the Timken Ranch Co. to raise hemp in the Imperial Valley are successful. They have 100 acres planted and it is doing fine. They also have forty acres of ramie fibre, used in making china silk.

It is announced from Santa Ana that the Sugar Beet Growers' Association of Orange county has decided to place a chemist and tare man in each of the sugar factories this season in order to have a check for the growers in the factories.

The Crop Reporting Board of the Bureau of Crop Estimates, United States Department of Agriculture, estimates from the reports of the correspondents and agents of the Bureau that the condition of the cotton crop in California on May 25 was 82 per cent of normal.

Deciduous Fruits and Nuts.

The Bartlett pear crop promises to be a record, both in size and quality of the fruit.

The production of persimmons in Japan for the year 1914 totaled 321,690,762 pounds of fresh fruit and 30,650,701 pounds dried.

Roy K. Bishop, Horticultural Commissioner of Orange county, says his county will have a big crop of excellent plums this season.

The winter of 1916-17 in the fruit districts of France will be remembered as one of the longest, if not the hardest, experienced in many years.

Grapes and plums in Riverside county promise well this year. D. D. Sharp, Horticultural Commissioner, estimates their yield at 100 per cent. Pears promise 60 per cent and prunes 70 per cent of an average.

The ranch of Dr. J. D. Reed of Covina, known as "Show Me," containing forty acres of walnuts, with intermediate crops of alfalfa and beans, was sold last week to W. E. Service of El Monte for \$40,000.

"Oregon prunes always sell cheaper than California," says L. F. Bridges, a representative of the large R. C. Williams Wholesale Company of New York, at the headquarters of the Growers' Association at San Jose recently.

Peach prices for the crop recently sold to the Merger Packer Company have been announced by the Tulare Peach Growers' Canning Association as follows: Freestones, \$27.50 per ton; Orange Clings and Tuscanas, \$45 per ton; Phillips Clings, \$50 per ton.

The Prune and Apricot Growers' Association has been asked to set a price for this year's fruit, but they have declined to do so owing to the present speculation in the food market and the chance for speculators to work on the prune market, it is reported.

Total shipments of deciduous fruits from California for 1917, up to June 8, were 198½ cars, according to a report by the California Fruit Distributors. Shipments to the same date in 1916 totaled 534½ cars, showing a falling off in early shipments this year of nearly 60 per cent, due to cool weather.

Late reports received from the horticultural commissioners of Santa Barbara, Los Angeles, Orange and Riverside counties indicate that the coming walnut crop will be a very good one. In Los Angeles county the setting is good and at present the outlook promises well, should there be no serious damage from the July blight. In Santa Barbara county the setting is also heavy, with but slight blight and no attack by the aphid. In Orange county walnuts, it is said, never looked better and the crop set is one of the heaviest ever had. Riverside county reports a fair outlook, the crop being estimated at 75 per cent of normal.

Citrus and Semi-Tropical.

Charles Eastin of Glendora reports the sale of his five-acre Valencia orange grove to A. Powell for \$15,000.

A bumper crop of navel oranges is predicted for the Lindsay district. It is predicted there will be a shipment of 5,000 cars next fall.

The packing houses in Lindsay are in full operation and the output in Valencias is increasing daily. Difficulty is being experienced in securing pickers and packers.

The Lindsay packing house last week shipped forty cars of Valencia oranges, the first of the season. Future and increased shipments are expected to follow.

FRUIT INTERESTS TO OPPOSE PRICE-DEPRESSING LEGISLATION.

As an outcome of the recent meeting at Fresno of representatives of the grape industry of California, it was determined to try to effect the State-wide organization of the grape interests, including growers, packers and shippers.

It was urged that adequate representation at Sacramento and Washington should be secured to block legislation affecting adversely this great State business, yielding, it was claimed, a cash revenue to our commonwealth of \$8,000,000. It is also noted that the big fruit organizations of the East, including practically the entire body of fruit handlers, have appointed a joint council whose chief function will be to watch legislative developments to the same end. Fairness to the fruit growing and marketing interests are to be encouraged.

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IT WILL BE A PREMIUM**



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Do you realize that you can attach a Gas Water Heater to your kitchen boiler without disturbing the operation of your stove?

Scalding hot dish water in Five Minutes.

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A Cool Kitchen in hot weather.

No ashes. No dust.

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NORTHWESTERN PACIFIC

J. E. Pelton of Glendora has sold his ten-acre orange grove, close in, set to bearing Washington navels, and in good state of cultivation, for \$18,000 to W. J. Bowman of Minneapolis.

B. L. Reynolds of Covina has sold his twenty-acre Valencia orange grove, known as Valencia Park, at Rowland avenue and Lark Ellen street, to H. V. Bright, a Cleveland capitalist, for \$40,000.

The Edison Orange Growers' Association, capitalized at \$25,000, has filed articles of incorporation. The Association is the outgrowth of extensive orange planting east of Bakersfield. The tract is one of the show places of Kern county.

There is a possibility for a permanent market for California-grown figs, declares Prof. J. Coit of the Citriculture Division of the University of California, as they include many of the Oriental varieties. The greatest need is for co-operation among the growers and for the standardized and well-advertised brands.

The citrus growers of the Pomona district report a good season. The San Antonio Fruit Exchange that handles most of the crop, has, up to date, it is said, sold \$2,500,000 worth of oranges and lemons. As there are 1,000 cars yet to go forward, it is thought that the Exchange will close the season with sales aggregating \$3,500,000.

Grades.

Trouble over the sawdust-packed grapes, the Emperors, arose last season because shippers lost heavily. Grapes shipped East were packed with surface moisture still upon them, the moisture causing a sweating in the sawdust which resulted in rot. Growers should not pack Emperors until they are thoroughly dry.

California raisins are sold in every store in Kingston, Canada. A carload arrived from Fresno, Cal., consigned to a local merchant. In conversation with a large importer he said that the American raisin was far superior in quality and appearance to any that he ever purchased in Europe, that they are far better packed, and are more attractive than the Spanish fruit, for which reason customers are willing to pay a little more.

Miscellaneous.

The Brawley Cannery is erecting a building to pack tomatoes. Operations will begin June 15.

The Turlock Merchants' and Growers' Association have established two experimental farms.

The Healdsburg Canning Company is increasing its capacity for the coming season.

The value of crops grown on reclaimed land in 1916 is estimated at \$33,000,000.

Volunteers have cleared away several old buildings on the Ferndale Fair Grounds, preparatory to putting up more commodious new quarters.

The Irrigation Board has issued an order barring from the works of the Oakdale irrigation system all visitors.

The government is preparing to prevent a flood in the Imperial Valley, threatened because of an exceptionally heavy snowfall in the Rocky Mountains.

Three acres of the beautiful lawn at the Washington State penitentiary have been turned under and what was lawn has been planted to potatoes.

The machinery is being installed in the new cannery at Riverside and the plant will be gotten into shape as rapidly as possible. A big run on tomatoes is anticipated.

By an overwhelming vote the people of the Imperial Valley have sanctioned the issuance of \$2,500,000 in bonds for flood protection and irrigation improvements.

Three hundred and forty thousand dollars was the price paid by W. H. Graham to the Sacramento Valley Sugar Company for the 3,500 acre tract of land at Nord known as the Wilson ranch.

The United States Department of Agriculture will send a special investigator to the fruit markets of the Orient to seek markets in the far East for Pacific Coast fruit.

Contract prices paid to producers in Pomona range as follows: Peaches, Clings, \$45 a ton; apricots, \$50 a ton; tomatoes, \$10 a ton; loose alfalfa hay, new crop, \$16 a ton.

About 1,000 tons of lime have been used per year on Humboldt county farm lands for the past three years, according to Secretary R. W. Werner of the Farm Bureau.

Formerly San Francisco's veal supply was dependent chiefly on the slaughter of range calves in Butcher-town. Lately, however, the bulk of the veal has been dressed dairy calves.

Night and day patrol systems for the protection of growing grains and other crops is being agitated in a number of counties. The suggestion originated with the State Council of Defense.

Backing the Government to the limit, the California canners have offered the State's entire output of canned food products, valued at \$100,000,000, to be used as the National Council of Defense sees fit.

California hop, bean and dried fruit shippers are protesting against the proposed freight rate increase hearing before the Interstate Commerce Commission. Final arguments will be heard June 9, 11 and 12.

Twenty thousand extra farm laborers will be needed in order to handle the increased crop production in five counties of the San Joaquin Valley, according to reports received by the State Council of Defense from Vice-Chairman Naftzger of the Council.

The decision to establish a market center where farmers may pool their grain and produce for bids was one of the results of the first monthly meeting of the County Farm Bureau directors held with Farm Adviser J. F. Grass, Jr., June 9.

General Manager Charles E. Viriden of the California Fruit Distributors has asked the Federal authorities to recognize and classify fresh fruit as food entitled to transportation preference and for military exemption of laborers as accorded other food industries.

The farmers of Contra Costa county are taking active steps to secure a farm adviser. To obtain one at least one-fifth of the farmers in the county must form twelve or less centers, known as farm bureau centers, with dues of \$1 a year per member. The Pleasant Hill Farm Loan Association has authorized I. R. Tiklob to take up the matter and a call for volunteers is made.

California Crop Report.

Pasture.—June 1 condition 80, compared with the ten-year average of 86.

Sugar Beets.—June 1 condition 95, compared with the ten-year average of 92.

Cotton.—May 25 condition 82, compared with the seven-year average of 94.

All Hay.—June 1 forecast, 4,470,000 tons; production last year, 4,615,000 tons.

Oats.—June 1 forecast, 6,470,000 bushels; production last year, 6,500,000 bushels.

Barley.—June 1 forecast, 35,100,000 bushels; production last year, 33,320,000 bushels.

All Wheat.—June 1 forecast, 5,610,000 bushels; production last year, 5,600,000 bushels.

A summary of the June crop report for the State of California, as compiled by the Bureau of Crop Estimates, United States Department of Agriculture, is as follows:

Prices.—The first price given is the average on June 1 this year, and the second the average on June 1 last year: Wheat, 265 and 98 cents per bushel; corn, 181 and 89 cents; oats, 81 and 46 cents; potatoes, 275 and 119 cents; hay, \$17.50 and \$12.20 per ton; eggs, 32 and 23 cents per dozen.

—thinks well of LAYNE & BOWLER PUMPS

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REAL ESTATE
Los Angeles, Calif.
March 27, 1916.

Layne-Bowler Corporation,
Los Angeles, Calif.

Gentlemen:

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I also want to say that it has made good all that you have said for it and that it could not make a better satisfaction. I also want to say that I have had from your collector, Mr. Parrent, a most courteous treatment. I have had from him and his actions have reflected great credit not only on himself but on your corporation.

I will be pleased to have you refer any prospects to me for my recommendation.

Yours very truly,
W. W. Mines & Co.

Write for Catalog No. 25
LAYNE & BOWLER CORPORATION
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MR. CONSUMER: WE SAVE YOU MONEY

- \$ Let us supply YOU with our "SPECIAL IRRIGATION PIPE." Locked Seam, Tapering Collar and Reinforced by Stout Iron Band. \$
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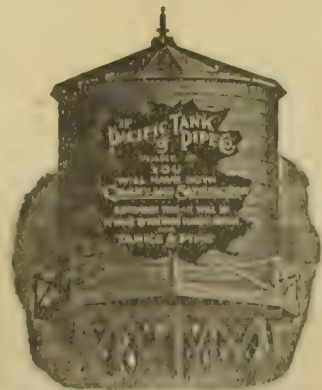
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Sheep for the Farm in California

[Written for Pacific Rural Press by Prof. Robt. F. Miller, University Farm, Davis.]

With the advent of high prices for mutton and wool caused by a world's shortage, farmers are looking toward keeping a flock of sheep. Most farmers would not miss the feed consumed by thirty or forty ewes and would find the mutton and wool a ready source of income. A word of warning might well be added here, however, that a flock of sheep needs attention as well as other livestock on the farm.

The first question always asked by the beginner is, What is the best breed? This is partly because the various breeds of sheep are not usually well understood by the layman, and partly because the average man has an idea that there is a certain breed that fills all requirements and may properly be called the "best" breed. Certain breeds are better adapted to prevailing conditions than others, but the success in sheep raising as well as other classes of livestock depends chiefly on the care and management of the breed. Where market lambs is the aim, the farmer need not be particular about purebreds, but should select a type of sheep that best suits his needs. The

their heavy shearing qualities and their prolificacy. They shear heavier than other down breeds and twins are very common.

The Hampshire is somewhat larger and heavier boned and lambs develop very quickly where feed is plentiful. Twins are hardly so common as with Shropshires, and the fleece is lighter. The Oxfords are a very large and somewhat late-maturing sheep and there are very few in California.

The Southdown has many valuable attributes, but is not quite as large as the Shropshire and rather light in fleece. The Dorset Horn promises to become a very desirable farm sheep in California, as they are not only exceptionally good mothers, twins being the rule and often triplets, but will also breed very early; in fact, may be made to lamb in September and October. There are but a limited number in the State, however, and they shear rather light.

California conditions differ somewhat from other States and sheep raising on the farm is usually confined to the production of spring or milk lambs. This calls for a type of sheep possessing two special features,



The above two-year-old ram was exhibited at the P.-F. I. E. and exemplifies in a striking way the wool type of sheep. This animal is said by its owner to shear forty pounds of wool.

common black-faced ewe, usually a Shropshire-Merino cross, has often given good results.

There are about sixty distinct breeds of sheep, twelve of which are commonly found in the United States. They are divided into two general classes—fine wool sheep and mutton sheep. The former are principally associated with range conditions and possibly 80 per cent of the breeding ewes on the range are either straight Merinos or Merino crosses. They are very hardy and herd well (grazing together), which makes them especially adapted to the range.

The mutton breeds have usually proven most profitable on the farm. They have been developed under farm conditions and respond readily to such environment. Although the wool of the ewe is a most important matter, it is usually secondary to the production of lambs on the farm where feed and forage are plentiful. The principal mutton breeds are the Shropshire, Hampshire, Oxford, Southdown and Dorset Horn.

The Shropshire is a favorite with a great many breeders in California. They are of splendid mutton type, very active, lambs mature early and two strong features of the breed are

the ewes must breed early, and the lambs must mature early. Barring the Dorset Horn, the above breeds cannot qualify, as they cannot be depended on breeding early, and while the Dorsets breed early, there being so few in the State the farmer would experience difficulty in securing even grades.

The writer is of the opinion that the large-framed Merino ewes or Rambouillets are well suited for early lamb production. They will breed early, the lambs are fairly early in maturing, and the ewes are very hardy and shear well, the latter being quite an attribute at the present price of wool. The farmer will usually experience little difficulty in securing good grade Merinos in this State and should they be inclined to be small and too heavy on the wool order, they may be crossed with one of the above mutton rams and the resultant cross-bred lamb will be "hard to beat" from the market standpoint.

SHEEP FOR MORNING GLORY.

[Written for Pacific Rural Press.]

Pretty soon it will be impossible to cultivate any more in many orchards on account of limbs hanging down with fruit. But morning glory will thrive, and in prune orchards lots of

fruit will be lost in these weeds. J. D. Cox of Sonoma county is buying October-November lambs at \$5 to \$6.50 each to clean up this morning glory. He will fence the old orchard and

leave a runway to the house. Belle will be put on several of the sheep. If dogs get after them, they will run to the house, and if they do not the bells will warn Mr. Cox of the dogs.

Hillcrest Stock Farm

THORNTON S. GLIDE, Prop.

DAVIS, CALIFORNIA

Breeder and Importer of

Shropshires and Merinos

Shropshires sired by rams imported by me from England.

The Famous Glide Merinos.

My purebred range-raised yearling Shropshire and Merino rams are now ready for inspection at my place.

FOR SALE IN INDIVIDUAL OR IN CARLOAD LOTS.

A FEW SHORTHORN BULLS FOR SERVICE.

Romneys and Dorsets

My Romney flock is headed by imported ram from the Warorogamal flock, New Zealand, who was Senior Champion at P.-F. I. E., and a number of my ewes are from the flock of Mr. Ernest Short of New Zealand. These are the two leading prize winning flocks of that country.

My foundation of Dorset ewes was obtained from the flock of the late "Joe" Wing of Ohio and from the winning flock at P.-F. I. E. At the head of the flock is Woodland 88, No. 18,808, by King 14,967, purchased from Woodland Farm, Mechanicsburg, Ohio. Dorsets are the great sheep for early lambs. Will have a few ram lambs for sale next fall. No Romneys this year.

JOHN E. MARBLE

LOS ANGELES, CAL.

Farm three miles east of Redlands.

FOR SALE—JUNE DELIVERY FROM OREGON

1500 Rambouillets and Lincoln Ewes

HALF BLOOD, LARGE STOCK, GOOD, HEAVY SHEARERS,
FINE CONDITION.

For price and particulars write

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Shropshires For Sale

I HAVE AN EXCEPTIONALLY FINE LOT OF YEARLING RAMS
AND RAM LAMBS TO OFFER THIS SEASON.
INDIVIDUALS OR CARLOAD LOTS.

— Write for Prices —

J. R. BLOOM, Dixon

Sheep in the Upper Coast Counties.

[Written for Pacific Rural Press.]

Despite or because of the exceedingly high prices of sheep and wool, more people of Humboldt, Mendocino and upper Sonoma counties are going out of the sheep business than are coming in. One reason for this, as expressed by B. M. Bucknell, extensive wool buyer in Mendocino county, is that few people want to stock up at present prices, since they would lose whatever reduction in prices may come.

In Humboldt county the range sheepmen refuse to increase their flocks, according to Farm Adviser A. H. Christiansen, because many pastures have been pastured so close that they can't profitably be reseeded, and the sheep must be run farther to their feed.

In all three counties the animals that prey on sheep make the losses greater as the prices go higher. These "varmints" include panther, bear, coyotes and dogs. Coyotes and dogs are the real menace to the in-

dustry, in spite of high bounties for the former.

In Humboldt county the Farm Bureau has started a campaign to get people on cultivated farms to put in 6 to 100 sheep each. About 2,500 acres operated in farms of 50 to 150 acres scattered all over the county are going to have sheep in a small way this year.

In all three counties the wool sells at close to the highest price in the State, principally due to the cooler weather, which prevents too much grease in the wool, later rains and fogs, which keep grasses and weeds green until after the spring shearing, the absence of certain weeds, such as cocklebur, and the increased black-face blood in flocks. With green feed until shearing, there is no break in the wool, and seeds and burrs do not ripen soon enough to infest the long clips of eight or twelve months' growth.

Why Sheepmen Should Cross to Shropshires

[Written for Pacific Rural Press by J. E. Bloom, Dixon, Cal.]

It has been demonstrated to the close observing sheepman this season more than any other that the man who bred his flock to the big, strong, vigorous Shropshire rams received a

much greater profit for his mutton lambs. A number of cases have come to my attention this season where the cross-bred lambs brought from \$3 to \$3.25 more per head than the other lambs. There is something about the carcass of the Shropshire lamb when it is hung in the market that appeals not only to the butcher but to the consumer.

The Shropshire when hung presents a firm white carcass, the meat is sweeter, and the breed matures much faster than others. All this is in favor of quick sales and greater profits. Mate the Shropshire ram with Merino ewes this fall and get the big profits.

PUREBRED SHEEP ON RANGE SUCCESSFULLY HANDLED.

(Continued from first page.)

Larkspur kills sheep when it first comes up. The common "milkweed" growing in patches on the range tempts yearlings mostly, especially if there are no other greens, and kills them. Sheepmen in old times, driving sheep down from Oregon, always aimed to drive around such patches. A number of other poison weeds are found in various localities. These should be studied by the sheepman.

In warm weather, after rains and in wet winters generally, the maggot flies lay their eggs on the hind quarters of sheep. When the maggots hatch they burrow through the skin and eat all around the ham, spoiling it for market and causing agony to the sheep. Yearling ewes seem affected worse than old ewes. In wet winters the sheep have to be caught and wool trimmed from the hind quarters, where it would get dirty and protect the maggots. In a dry winter like the last one, they were trimmed two or three weeks before shearing.

Shearing this season about May 1 was later than usual because everybody was shearing at once and help was scarce. But no harm was done by the delay, on account of the cold weather, which made it comfortable on the sheep, and the fact that fox-tail had not developed enough to get into the wool.

San Ramon Shropshires



Grand Champion Ram
P.-P. I. E., 1915

Winnings at P.-P. I. E., 1915

15 FIRSTS, 9 SECONDS and 6 CHAMPIONSHIPS.

Winnings at Sacramento, 1916

9 FIRSTS, 9 SECONDS and 2 GRAND CHAMPIONSHIPS.

Winnings at International Livestock Show, Chicago, 1916

FIRST, PEN OF 5 YEARLING LAMBS; FIRST, RAM LAMB; SECOND, AGED RAM; FOURTH, FIFTH AND SIXTH, YEARLING RAM; SECOND, GET OF SIRE; FOURTH, PEN OF 3 EWES; FOURTH, FLOCK.

Offering for 1917

A FINE LOT OF REGISTERED RAMS.

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BULLARD RAMBOUILLETS

Flock founded forty-six years ago by the late Frank Bullard. Years of selecting and inbreeding to meet the range demand for a combination of big mutton carcass and Merino fleece have resulted in large, wrinkly-necked, blocky, well-covered, heavy shearing sheep. Our rams weigh up to 300 pounds and shear 35 pounds or better. If you want size, conformation and breeding, we have it. Nearly sold out for yearling rams.

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RAMBOUILLETS

Are large and smooth, with heavy fleece of fine, long staple white wool.

Yearling Rams and Ewes, individual or car lots.
Prices reasonable. Correspondence solicited.

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HIDES SHEEP SKINS GOAT SKINS FURS

ARE WORTH MONEY NOWADAYS.
Get best results by shipping to the long-established, reliable house of
W. B. SUMNER & CO., 220 Townsend St., San Francisco

Butte City Ranch

Breeders of

SHROPSHIRE SHEEP

CHOLERA IMMUNE BERKSHIRE HOGS

SHORTHORN CATTLE and
SHETLAND PONIES.

Write for Special Offerings.

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RED BLUFF, CAL.

Importers and Breeders of

Corriedale Sheep

Will have a limited number of cross-bred Corriedales for sale this fall.

1000 One and Two-Year-Old

SHROPSHIRE RAMS

By Imported Canadian Sires and Purebred Ewes. For further particulars call or address:

C. E. BARNHART

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SUISUN, CALIFORNIA

Live Stock and Dairy Notes

Livestock breeders all over the State are invited to send on postal cards, notes regarding their sales, State and County Fair intentions, new stock, etc.

Sheep Notes.

Miller & Lux are offering some good purebred registered Shropshire rams.

Charles Kimble of Hanford is offering fine one and two-year-old Rambouillet rams.

Ellenwood & Ramsey are using Corriedales to secure a combination wool and mutton sheep.

Butte City Ranch, in addition to other lines of purebred stock, are breeding fine Shropshire sheep.

Hillcrest Stock Farm of Davis have the usual fine offering of Shropshire and Merino range-raised rams.

E. C. Spear just sheared a 38½-pound fleece (a year's growth) from his P.-P. I. E. prize Rambouillet ram. He weighs 245 pounds.

Bishop Bros. of San Ramon report a very strong demand for Shropshires this season. This flock carried away a goodly number of prizes at the Chicago show.

H. Garnet, Willows, purchased of F. A. Mecham Estate fifty head of purebred Shropshire rams. Last year he bought 100 head of Mecham rams. He reports an excellent crop of lambs this season.

This nation produces only about one-half the wool it uses, and there is a shortage of practically all food-stuffs. The demand for both wool and meat is large. Wool is now selling for from 50c to 55c a pound and last year's lambs recently sold on the Chicago market for \$18.35 a hundred pounds.

Approximately \$25,000 worth of sheep and lambs was shipped from Hanford, June 9, to Placerville. The shipment consisted of 3,200 sheep and lambs, the property of Bastian Souza. The sheep were purchased by Don Biggs of San Francisco, who will put them on his ranch at Placerville to graze.

Bullard Bros. report an excellent demand for Rambouillets. Although they have probably the largest flock of purebred Rambouillets on the Coast (over 1,000 ewes), they are practically sold out of yearling rams. They recently shipped carload lots to Arizona, Montana and Wyoming. They are reserving a carload for the ram sale to be held at Salt Lake the latter part of July.

Only a quarter of the wool crop was left in Mendocino sheep raisers' hands June 5, according to B. M. Bucknell, a wool buyer of Ukiah, who says there are only eight crops left, including nine or ten thousand fleeces. It never sold at higher prices, Mr. Bucknell having paid 50c to 55c and some higher. The big clip on which A. W. Foster calls for bids from all buyers sold to E. H. Tryon of San Francisco for over 60c.

E. C. Spear is raising fine Rambouillets in Napa county. His ewes include a prize-winner at the P.-P. I. E. and his head ram was sired by the Grand Champion at the P.-P. I. E. This ram is himself a prize-winner and gets exceptionally fine lambs. A ewe lamb dropped February 1 weighed 100 pounds May 17. A ram lamb dropped February 5 weighed 104 pounds May 17. One of Mr. Spears' ewes dropped fine twin lambs and sheared a twenty-pound fleece of twelve months' growth.

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Expert Live Stock Auctioneers.

Purebred Stock Sales a Specialty

Sales Conducted in All Parts of Calif.

Ben A. Rhoades, Auctioneer

1501-S-S So. Main St., Los Angeles, Cal.

Registered Jacks

Range raised; Guaranteed satisfactory breeders; Field Jacks a specialty.

REGISTERED SHIRE COLTS

James W. McCord, Hanford, Cal.

John E. Marble of Los Angeles is breeding Romneys and Dorsets at his farm, five miles east of Redlands. His flock consists of 25 ewes, 2 stud rams and 27 lambs. Mr. Marble secured as foundation the best blood available. His Romneys were secured from Mr. Mathews and Mr. Shore, who own the leading prize-winning flocks in New Zealand. His Dorset ewes are from the flock of "Joe" Wing, Mechanicsburg, O., and his Dorset ram, Woodland 88, came from Woodland Farm, Mechanicsburg.

J. E. Maurer is back from Western Texas and Arizona, whither he went to buy sheep and lambs. He says Texas is suffering from a long dry spell and he found the lamb crop there the lightest in the history of the State. It has also been dry in Arizona. Utah and Idaho report many deaths among lambs, making the crop in those States also short. Hence the high prices of sheep and lambs on the Eastern markets, they getting nothing like the supply of former years during the spring and early summer months. While away Mr. Maurer bought several large bunches of sheep and lambs, which he will fatten for market.

Bishop Bros. report the sale of about 300 very choice Shropshire stud rams this season to the following: M. Scally, J. G. Wannop, Parrott Investment Co., J. M. Robinson, Timken Ranch Co., W. C. Williamson, J. R. Snider, A. J. Gladding, C. E. Barnhart, Jas. Gallagher, Jr., H. H. Slater, J. F. Tate, Ray Branscom, E. Dickson, Elliott Brant Rancho, Mr. Gerloff, O. N. Shaw, G. W. Brown, W. H. Beister, Thos. F. Walsh, Theo. Davies & Co. They still have a limited number of very choice rams for sale. They report this season lambs of an exceptionally fine quality, showing plenty of bone, size, conformation, etc.

Dairy.

E. A. Hamner of Ferndale received \$292.75 for milk and butterfat from 12 cows in April, 1917.

The bulls admitted to the Guernsey Herd Register now number 43,625, and the cows 72,614, a total of 116,239.

Jes Peterson of Loleta, with 38 grade Holsteins, averaged 383.73 pounds fat in the year ending February 15, 1917.

Pomona milk dealers announce that in the future they will charge 5½c a pint for milk and 10c a quart instead of 9c as heretofore.

J. W. Coppini of Ferndale has offered a registered Jersey bull calf out of a R. M. cow to the highest producing herd in the Ferndale Cow Testing Association not tested previous to 1917.

Five cows in the Gridley Cow Testing Association produced more than 55 pounds of butterfat during the period of 30 days ending May 31. J. Trorcatey of Tudor showed a record of 65.2 pounds butterfat with his Durham No. 80.

The Humboldt County Dairymen's Association will hold its annual picnic the last Saturday in July at Loleta. It is free for all, and there are usually 1,500 to 2,000 participating, according to President J. N. Fulmor of the Association.

Karl A. Gotshall of Gotshall & Magruder, Ripon, writes us the following note of explanation: "In your issue of June 2 the writer notices that in mentioning the record of K. P. Tola Joe that you state it is the State record for under two years. We wish that you would correct this because this might make some people understand that Tola Joe was under two years of age, while she was two years and eleven months. She made the record as a senior two-year-old and the record stands for under three years."

(Continued on page 738.)

INNISFAIL DAIRY SHORTHORNS



GLENSIDE ROYAL 408155.

Our herd of registered Shorthorns has been carefully selected from the leading milk producing strains of the breed and is being developed along the same lines in our hands. The herd is headed by

GLENSIDE ROYAL

a prize-winner at the 1913 International and grand champion at Panama-Pacific Exposition.

Sired by him and out of large cows of good milk production, we offer for sale a few choice young bulls.

Our entire herd is tuberculin tested.

Alexander & Kellogg, Suisun, Cal.

Farm on Grizzly Island.

SHORTHORNS

Herd headed by Count Glory (426982). Grand Champion California State Fair, 1916. Our herd comprises more Scotch females than any herd on the Coast.

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BERKSHIRES

This herd won the premier exhibitors' banner at the Panama-Pacific Exposition. This herd contains one of the greatest collections of blood sows in the world. Strong in the blood of Elval's Champions Best.

BULLS - Shorthorns - HEIFERS

REGISTERED AND TUBERCULIN TESTED.

Animals of either sex ready to deliver in car lots or singly.

H. L. & E. H. MURPHY, Perkins, Cal

ORMONDALE SHORTHORNS

Are all heavy boned, and of Scotch and Scotch-topped breeding.

Suited for either the range grower or breeder.

EVERY ANIMAL POSITIVELY GUARANTEED.

Whether you buy or not, visit our ranch, 7 miles from Palo Alto on Woodside Road. We welcome inspection. Prices and pedigrees on application.

SHORTHORN CATTLE R. D. No. 1
DUROC-JERSEY SWINE ORMONDALE CO. REDWOOD CITY, CAL.

REGISTERED SHORTHORNS

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HOPLAND STOCK FARM

Hopland, Cal.

RANGE BULLS, BOARS AND GILTS

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GIVES GREATEST VALUE FOR LEAST MONEY.

IT MAKES THEM FAT.

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Send for Sensible folder on feeding hogs

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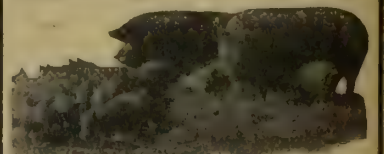
Commercial hog prices are higher. Our prices on pure-breeds have not raised.

The Grand Champion P. P. I. E. Herd

ROUGH'S GREENFIELDS

Arlington Station, Riverside, Cal.

Hog Cholera and Diseases of Cattle



Mr. L. B. Green and Dr. E. M. Leaf, in introducing Dorsett & Niles methods of U. S. Government, License No. 18, Anti-Hog Cholera Serum, through the Kansas City Stock Yards Serum Co., wish the Hog Raisers of the State of California to watch the splendid results obtained in Imperial Valley. A few names referred to are: Timken Ranch Co., Lyons Bros., Russell & Stuart, C. H. Westmorland, D. Messman, Farris Bros., and many others. Dr. E. M. Leaf is a specialist in Hog Cholera and Tubercular Serum making—also Black-Leg and Anthrax Vaccine and its application and effects. Anybody wishing information, he will gladly give same from Los Angeles office, 401 Bryson Building, 2nd and Spring Sts. Phone Main 1107.

Breed Berkshires

For large litters of husky, hustling pigs; for rapid gains on inexpensive feeds; and for easy fattening. They bring top prices on all the big markets because of uniformity, high quality meat, and least shrinkage. Send today for free booklet "Berkshire Hogs." It points the way to more hog money.

American Berkshire Association

448 E. Monroe Street

Springfield, Ill.

THE GREAT VINA RANCH SALE.

The great Stanford herd of registered Holsteins is no more. At the three-day auction sale last week it was dispersed to buyers from all parts of California, as well as from Oregon, Nevada, Hawaiian Islands and South America. The sale had been well advertised and was well managed. There was an excellent attendance every day. Bidding was brisk and good prices were obtained. For the 285 head, including young bulls and calves, an average of \$200 per head was realized. The few cows that had records back of them were in especial demand. Bowed, the 32-pound cow, was sold for \$1,600 to Mrs. H. V. Bridgeford, while a two-year-old daughter went to C. A. Thayer for \$695 and a six-months-old daughter to J. D. High for \$505. The following is a partial list of the buyers: Gotshall & Magruder, Ripon; Bridgeford Co., Knightsen; Napa Hospital; W. B. Atterbury, Crows Landing; Geo. A. Smith, Corcoran; C. A. Thayer, San Francisco; D. A. Lindley, Sacramento; Baden Stock Farm, Baden; G. H. Umben, San Francisco; J. D. High, H. E. Cornwall and Frank Hatch, Modesto; Frank Johnson, Chico; W. H. Calhoun, Healdsburg; Dr. Smyth, Oakland; W. H. Daniels, San Mateo; W. H. Donaldson, Woodland; Wm. F. Saylor, San Francisco; James Mills Orchard Co., Hamilton; C. R. Kesler, Escalon; M. Mead, Galt; Lawrence Edwards, Stockton; Trinity Dredging Co., Lewiston; John Neto, Gridley; Charles Mahle, Standish; H. Mealey and R. E. Fields, Biggs; Cayoru and Matthey, Bakersfield; Ambrose Estate, Nord; D. A. Lindley, Sacramento; D. O. Lively, San Francisco; J. H. Johnson and G. W. Jacobs, Gold Hill, Ore.; Strang and Duell, Medford, Ore.; F. A. Martin, Reno, Nev.; J. L. Long, Mason, Nev.; J. M. Hind, Cohala, Hawaii, and E. Suseata, Santiago, Chile. Rhoades & Rhoades were auctioneers.

NOTES OF THE SALE.

A large percentage of the bulls were bid in by dairymen and will go to improve grade herds.

George A. Smith of Corcoran and Frank Hatch of Modesto each secured several carloads, largely young stock.

Gotshall & Magruder of Ripon secured a number of good individuals, including a twenty-pound heifer of show type.

A number of the best cows went to Nevada. J. L. Long of Mason and F. F. Martin of Reno secured several carloads of good ones.

The Bridgeford Company, whose stock topped the Sacramento sale, secured a number of top notchers. At the Vina sale Mr. and Mrs. Bridgeford were both discriminating bidders.

Mayo Newhall and Vanderlynn Stow attended the sale in the interests of the Stanford University. Mr. Stow announced that the money realized from the sale would be invested in a Liberty Bond.

Owen Duffy secured for the Napa Hospital herd Lady Ormsby Burke, a classy young cow with a record of 22.11 pounds made at three and a half years, price \$630; also some other fine ones.

LIVESTOCK DIRECTORY.

Rates in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

SWINE.

Poland-Chinas.

SPECIAL SALE of weaned boar pigs of the famous Whitten Ranch Poland-Chinas. Get one and grow him out. He will put money-making qualities into your herd. Prices very low; satisfaction guaranteed. Send for free booklet, "Hogs for Profit." Packed with valuable information; tells how to become successful. Ranch in Tulare county, but address owner, R. H. Whitten, 610A Security building, Los Angeles.

FOR SALE—Nice lot of young purebred Poland-Chinas; young boars ready for service; nice lot of young gilts soon ready to breed; weanlings of either sex; sired by Joker, Iowa Wonder and Sunnydale's Chief. For prices and further information write Geo. A. Smith, Corcoran, California.

BOARS of serviceable age all sold. We have a few choice gilts bred to John Henry, an exceedingly choice boar. Also have a fine lot of fall pigs, either sex. Bar N Ranch, E. A. Noyes & Son, props., Sutter, Calif.

REGISTERED POLAND-CHINAS—Young boars ready for service. Weanling pigs, both sexes. Prices attractive for quick sales. J. H. Cook, Paradise, Cal.

CRAWSHAW'S CALIFORNIA CHINAS are prolific and profitable. Can fill your order for weanlings, either sex, for \$15.00 each. J. A. Crawshaw, Hanford, Cal.

LAKESIDE STOCK FARM POLAND-CHINAS are money-makers. Satisfaction or money refunded. Geo. V. Beckman & Sons, Lodi, Cal.

NOW BOOKING ORDERS for spring pigs, either sex, from my prize-winning, large type Poland-Chinas, hogs. H. I. Marsh, Modesto, Cal.

POLAND-CHINAS—Big type combined with quality. Choice bred sows, gilts, boars. W. D. Trewitt, Box 82A, Hanford, Cal.

REGISTERED POLAND-CHINA SWINE—Prize winners. Finest stock in the State. \$20 up. M. Bassett, Hanford, Cal.

POLAND-CHINA HOGS—Large type. 200 lbs. in 6 months. I guarantee to please you. O. L. Linn, Linview, Modesto, Cal.

BIG-TYPE POLAND-CHINAS—Stock from the best herds of the Middle West. N. Hauck, Alton, Humboldt county, Cal.

REGISTERED POLAND-CHINAS and Duroc-Jerseys. Cholera immune for life. T. H. Beckman, Lodi, Cal.

POLAND-CHINAS—Three extra fine boars, one large and two medium type. W. Bernstein, Hanford, Cal.

POLAND-CHINAS—Large type. The Browning Stock Farm. W. H. Browning, Woodland, Cal.

POLAND-CHINAS—A few gilts left at \$15 each. Edward A. Hall, R. F. D. 1, Watsonville, Cal.

REGISTERED POLAND-CHINAS—J. H. Hansborough, Route A, Modesto, Cal.

REAOAKS RANCH herd of registered Poland-Chinas. W. J. Hanna, Gilroy.

Berkshires.

GRAPEWILD FARM BERKSHIRES—World's Fair Grand Champion Grand Leader 2nd heads our herd, not only himself a champion, but the sire of champions. At the 1916 California State fair his daughters won first in all of the senior sow classes, including the Grand Champion Sow. At the 1916 Oregon State Fair a Grand Leader sow was Junior Champion. We are offering a number of choice boars of exceptional breeding and are also booking orders for fall pigs. A. B. Humphrey, Escalon, San Joaquin Co., Cal.

BERKSHIRES sired by Mayhew's Leader 10th, one of outstanding sons of Champion, Grand Leader 2nd. Weaned pigs, \$15 each. They are dandies. Heavy boned kind that will grow into large hogs. Dallas Bache, Hollister, Cal.

REGISTERED BERKSHIRES—Progeny of Improver B. Young stock now ready for sale. Start your herd with breed and strain of established reputation for California conditions. Geo. G. Meckfessel, Berlin, Cal.

BERKSHIRES—I have one of the best herds on the Pacific Coast, including Grand Champion Sow, Reserve Grand Champion Boar under one year, Third Aged Boar, etc. Frank A. Brush, Santa Rosa, Cal.

EFFICIENCY FIRST BERKSHIRES—Ten firsts, all championships Nevada State Fair, 1916. Laurel Champion and Grand Leader breeding; any age. Joseph Wilson, Jr., Mason, Nevada.

BERKSHIRES—Young stock from prolific stock now ready. Can furnish tries or more if desired. Write for prices. W. G. Thompson, Napa, Cal.

IMMUNIZED NORMANDY BERKSHIRES—Good type. Breeding stock, any age, for sale at all times. Cast iron guarantee. Arlington Smith, Visalia, Cal.

ROSE CREST BERKSHIRES—Rivals Champion Best blood. Open and bred gilts. Service boars. F. L. Hall, Perris, Cal.

CARRUTHERS FARMS BERKSHIRES—Cholera immune. Second annual sale August 1, 1917. Mayfield, Cal.

REGISTERED BERKSHIRES—Young stock for sale sired by a first prize son of Laurel Champion; prices right. Imperial Stock Farm, Morgan Hill, Cal.

MODEL HERD BERKSHIRES—Bred for size and quality. Weanlings and gilts. J. L. Gish, Laws, Cal.

HOPLAND STOCK FARM—Registered Berkshires. Prices on application. Hopland, Cal.

REGISTERED BERKSHIRES—Geo. M. York, Modesto, Cal.

BERKSHIRES—Fair Oaks Ranch, Willits, Cal.

Duroc-Jerseys.

FIRST PRIZE HERD—Comprising the three most noted families of the breed. Golden Model, Crimson Wonder and Colonel. Offering bred show winners and show prospects in each family as good as can be found in United States. Also weaned pigs. Seeing is believing. It will pay you to investigate this offer. Haden Smith, Woodland.

RANCHO RUBIO DUROCS—Only a few September gilts left. One corksing good fall boar by Orion Model, son of the last International Grand Champion. Place your orders now for weaned boar pigs. Best I ever raised. Elmer Lamb, Ceres, Cal.

REGISTERED DUROC-JERSEYS—Service boars from prize-winning stock are money-makers. They grow faster. New England California Corporation, Ripon, Cal.

DUROC-JERSEYS—Herd boars. E. N. N's Colonel and Tulare Boy. Sweepstakes winner at Fresno, 1915. Choice breeding stock. J. P. Walker, Visalia.

MOST MONEY IN DUROC-JERSEYS—Bred sows and weanlings, either sex, at all times. Delta Farm and Live Stock Co., Colton, Cal.

REGISTERED DUROCS of guaranteed breeding. All ages. Weaned pigs, \$10. H. E. Boudier & Son, Napa.

HEAVY BONED DUROCS—A few service boars for sale. Ormondale Co., Route 1, Redwood City, Cal.

REGISTERED DUROCS—Crimson Wonder stock. Young stock, both sexes. L. D. Collins, Denair, Cal.

REGISTERED DUROC-JERSEY SWINE—Both sexes. Big-boned type. B. F. Kendall, Hardwick.

CROLEY'S BALANCED HOG FEED—the cheapest feed to fatten hogs. Write Geo. H. Croley Co., Inc., Live Stock Supplies, 631-637 Brannan st., San Francisco.

WINTON DUROC-JERSEY FARM, Winton, Cal.—High-class purebred hogs, both sexes, any

DUROCS—Defender, Clinton B and Golden Model strain. The big type. Allen Thompson, Tulare.

BIG-TYPE DUROCS—Quick maturing. Easy keeping. Frederick M. Johnson, Napa, Cal.

DOS HERMANOS REGISTERED DUROCS—Duveneck & Pickersgill, Ukiah, Cal.

DUROC-JERSEY REGISTERED HOGS—River Bend Farm, St. Helena, Cal.

REGISTERED DUROCS—Either sex at all times. W. P. Harkey, Gridley, Cal.

THE DEVILBINS HERD of large type Durocs. J. M. DeVilbiss, Patterson, Calif.

REGISTERED DUROC-JERSEYS—S. S. Southworth, Napa.

Yorkshires.

LARGE YORKSHIRES—The ideal hog for the progressive farmer. Young stock for sale. A. L. Tubbs Co., Calistoga, Cal.

LARGE YORKSHIRES—A few choice young boars and gilts for sale. Riverina Farm, Modesto, Cal.

Chester Whites.

THE BILLIKEN HERD of Chester Whites—Every rancher, every fruit grower, every one who can possibly do so, should keep at least one brood sow; we must increase our meat supply. I am offering some bred gilts and sows at very reasonable prices to help this along. 2 young tested sows to farrow in July; 6 spring gilts to farrow in September; 18 fall gilts to farrow in October; boars ready for service; weaned pigs, both sexes, ready for delivery. Write for special price lists and circulars. C. B. Cunningham, Mills, California.

REGISTERED IMPROVED CHESTER Whites—Grizzly Bear Ranch, East Auburn, Cal.

Essex.

LITTLE BLACK ESSEX—New crop nearly ripe. A few fine youngsters left. L. W. Millsap, Yolo, Cal.

Hampshires.

BELLA VISTA HAMPSHIRE—Service boars and bred or open gilts. J. W. Henderson, First National, Berkeley.

Tamworths.

BEAVER LODGE TAMWORTH—Service boars. Write for prices and pedigrees. A. G. Lane, Amsterdam, Cal.

DAIRY CATTLE.

Holsteins.

FOR SALE—From 1 to 70 extra fine, straight well-marked, light-colored, registered Holstein heifers, from 8 to 20 months old. Those old enough are being bred to a first-prize son of Prince Gelsche Walker, whose dam has a high yearly record. Some of these heifers are sired by bulls whose dams have from 35 to 37 pound records. They carry the very best blood of the breed and are good enough for any herd anywhere. Prices to fit any pocketbook. Geo. A. Smith, Corcoran, Cal.

GRANDSONS OF HENGEVELD DE KOL and out of A. B. O. cows for sale. Prices reasonable. Write for pedigrees. Many years of constructive breeding has made my herd one of the prominent ones of the San Joaquin Valley. R. F. Guerin, Visalia, Cal.

REGISTERED HOLSTEINS—Grandsons of King Segis and of world's record cow Creamella Vale. Will build up the production and value of your herd. Write or call and see them. F. H. Stenzel, San Lorenzo, Cal.

FOR SALE—Two registered cows, one with record of 24.59. Sister to other one made 23.10 as a two-year-old. Both bred to a 30-lb. sire. Geo. Kounias, Modesto.

TULARE GUERNSEY AND HOLSTEIN Farm is offering young bulls of both breeds. Excellent breeding. Prices reasonable. W. J. Higdon, Tulare, Cal.

THE McCLOUD RIVER LUMBER CO., McCloud, Cal.—High-class thoroughbred Holstein bulls for sale. Write for prices and pedigrees.

J. H. HARLAN, WOODLAND, CAL.—Breeder of Registered Holsteins. Sold out at present. Watch for announcement on King Valdessa.

PACKWOOD FARM HOLSTEINS—Fine young bulls of serviceable age out of tested A. B. O. cows. W. F. Mitchell, Visalia.

TWO SERVICEABLE SONS of Colantha Sir Pontiac & Co. for sale. Moorland Farm, K. W. Abbott, Milpitas, Cal.

THE HENDERSON CO.—Breeder and Importers. Registered Holsteins. Sacramento Bank Bldg., Sacramento.

BREEDERS OF REGISTERED HOLSTEIN cattle and Berkshire pigs. Whittier State School, Whittier, Cal.

REGISTERED HOLSTEINS—A. W. Morris & Sons, Corp., Importers and Breeders, Woodland, Cal.

CREAMCUP HERD—Registered Holsteins; Pontiac bull calves. M. Holdridge, Modesto, Cal.

REGISTERED HOLSTEIN BULLS, \$50 to \$150. Glorietta Stock Farm, Woodland, Cal.

BREEDERS OF REGISTERED HOLSTEIN Cattle—McAlister & Sons, Chino, Cal.

GOTTSCHALL & MAGRUDER—Breeders of Registered Holstein-Friesians. Ripon, Cal.

CHOICE HOLSTEIN bulls for sale. No females. Millbrae Dairy, Millbrae, Cal.

REGISTERED HOLSTEIN BULLS for sale. C. L. Morse, Route B, Modesto, Cal.

REGISTERED HOLSTEIN-FRIESIAN CATTLE—J. M. Campbell, Escalon, Cal.

REGISTERED HOLSTEIN BULLS for sale. Sunnybrook Ranch, Willits, Cal.

REGISTERED HOLSTEIN CATTLE—E. E. Freeman, Route B, Modesto, Cal.

BREEDER OF HOLSTEIN-FRIESIAN CATTLE—Dr. Ben Stetson, Napa, Cal.

A. B. O. HERD OF HOLSTEINS—Alex. Whaley, Tulare, Calif.

Jerseys.

N. H. LOCKE CO., LOCKEFORD, CAL.—Jerseys. Bull No. 432, born Dec. 2, 1915; sire, King's Valet; dam, Darrien's Lassie of L. She produced 604.6 lbs. fat in 351 days at 4 years. Price, \$200. Bull No. 491, Oct. 20, 1916. King's Valet-Sunshine of L. 56.9 lbs. fat third month. Price, \$100. Records made under dairy conditions at a profit. Service bulls and bull calves with probable production backing. Prices, \$50 and up. Poland-China boar Big Wonder, over 400 lbs., a good breeder, \$50. Chester White Swine—Boars and gilts.

BREEDER OF REGISTERED JERSEY CATTLE—Duroc Swine. Young stock for sale. W. J. Hackett, Ceres, Cal.

JERSEY BULLS from Register of Merit cows. C. D. Hayworth, Modesto, Cal.

VENADERA HERD OF JERSEYS offers calves from Register of Merit cows with official yearly records. Write for list of bulls. Guy H. Miller, Route 1, Modesto, Cal.

JERSEY BULLS—Sons of Gertie's Lad and Gertie's Son's Victor. A. A. Jenkins, Tulare, Cal.

YOUNG REGISTERED JERSEY CULL Calves at reasonable prices. O. J. Ames, Oakland.

CHOICE REGISTERED JERSEY FEMALES—Fresh and Springers. Breeding and individually the very best. McLouth, Orland, Cal.

REGISTERED JERSEYS—Young bulls and bull calves. T. B. Purvine, Petaluma, Cal.

Guernseys.

PACIFIC GUERNSEY HERD—Cattle selected from the best imported and Advanced Register Stock. Now offering choice bulls. C. S. Rasmussen, Lodi, Cal.

EDGEMOOR FARM GUERNSEYS—First in the show ring and in official records. Few animals of either sex for sale. Edgemoor Farm, Santee, Cal.

REGISTERED GUERNSEY BULL—No. 24342 from A. B. and imported stock. Write for prices and pedigree. A. G. Lane, Amsterdam, Cal.

BELLA VISTA GUERNSEYS—Males from A. R. dams, \$125 and up. J. W. Henderson, First National, Berkeley.

Ayrshires.

PLEASANT VALLEY AYRSHIRE FARM—Registered bulls for sale; also few grade heifers for sale. Write for prices. Sullivan Investment Co., 1942 Folsom street, San Francisco.

AYRSHIRES—Registered—75 head. All ages. Young stock for sale. Le Baron Estate Co., Valley Ford, Cal.

FAIRVIEW AYRSHIRES AND DURHAMS—Bred for quality. Choice young stock. Geo. Fay, Sheridan, Nevada.

AYRSHIRES—Registered; all ages. E. B. McFarland, 412 Claus Spreckels Bldg., San Francisco.

BEEF CATTLE.

SCOTCH AND SCOTCH-TOPPED SHORTHORNS—We have the largest herd of straight Scotch cows in California. Foundation stock of both sexes for sale; also a choice lot of range bulls. Barco Ranch, Hollister, Cal.

D. O. LIVELY STOCK FARM, INC., 216 Hobart Bldg., San Francisco, breeders of Hereford cattle. A few choice heifers for sale. We buy and sell livestock on commission. Farm at Mayfield, Cal.

REGISTERED YEARLING SHORTHORN Bulls—Heavy-boned, thick-meated Scotch and Scotch-topped breeding. Ormondale Co., Route 1, Redwood City, Cal.

BREEDERS OF REGISTERED SHORTHORNS—Milk strain. Choice young stock for sale. John Lynch Ranch, Box 321, Petaluma.

REGISTERED AND UNREGISTERED Shorthorn bulls for sale. Paicines Ranch Co., 320 Sharon Bldg., San Francisco.

SPRINGDALE STOCK FARM—Choice Shorthorns, bred for size and quality. W. C. Short, Reno, Nevada.

INNISFAIR DAIRY SHORTHORNS—Registered young bulls for sale. Alexander & Kellogg, Suisun, Cal.

HOPLAND STOCK FARM—Registered Shorthorns. Prices on application. Hopland, Cal.

REGISTERED HEREFORDS—H. H. Gable, Diamond G Ranch, Esparto, Cal.

SIMON NEWMAN CO., Breeders of Registered Herefords, Newman, Cal.

GEORGE WATERKSON—Breeder registered Herefords. Bishop, Cal.

SHORTHORNS—Carruthers Farms, Mayfield, Cal.

SHORTHORNS—Fair Oaks Ranch, Willits, Cal.

SHEEP AND GOATS.

D. R. KELLIER, importer and breeder of Hampshire sheep, Eugene, California, offers for sale a choice lot of Hampshire Ram Lambs, sired by Walnut Hall and Butterfield; rams purchased at Salt Lake, August, 1916; lambs ready for delivery after July 15, 1917. Inspection and correspondence invited.

F. A. MECHAN ESTATE, Petaluma, Cal.—Breeders and Importers of Shropshire, Rambouillet and American Merinos, both sexes. Also Red Polled cattle. Take electric car at Petaluma or Santa Rosa for Live Oak Ranch.

KAUPKE BROS., WOODLAND, CAL.—Breeders and Importers of Hampshire sheep.

DORSETS AND ROMNEYS—Dorset ram lambs for sale. John E. Marble, Los Angeles.

BISHOP BROS. SAN RAMON, CAL.—Breeders and Importers Shropshire.

CHAS. KIMBLE—Breeder and Importer of Rambouillets. Hanford, Cal.

HORSES AND MULES.

REGISTERED PERCHERONS—Herd stud, first prize, Reserve Champion, P. P. I. B., 1915. John Matley, Reno, Nevada.

REGISTERED SHIRES—Black Hawk Stock Farm, Importers and Breeders. Easton & Ward, proprietors, Burlingame, Cal.

MISCELLANEOUS.

FOR SALE—Dairy of choice cows, two to four years old. Full blood unregistered Holstein and Jerseys, all milking. Also full blood Holstein bull, weight 2,000. R. S. Burrough, Cloverdale, Cal.

CROLEY'S BALANCED DAIRY FEED—the cheap milk producer; and Croley's Calf Meal—the best California calf raiser. Geo. H. Croley Co., Inc., 631-637 Brannan st., San Francisco.

BUTTE CITY RANCH—Shorthorns, Shropshire, Cholera Immune Berkshires and Ponies. Special offering of sows, pigs and bulls. Butte City Ranch, Box P, Butte City, Glenn Co., Cal.

FEED, FREE RANGE, State, Government land, any amount. Booklet free. Joseph Clark, Sacramento.

Where to Get Ewes That Small Farmers Need

[Written for Pacific Rural Press.]

The sheep business in California is getting on a better, more stable basis, and is breaking up into smaller units very fast, like the small flocks generally found on Ohio farms, says T. H. Ramsey of Red Bluff. Mr. Ramsey believes there is more profit in sheep than in hogs, and that sheep products will not be materially lower at the end of the war than now. The dog problem is the great hindrance to sheep on small farms, but it can be solved, principally by legislation.

Where to get a few ewes to start with is not so hard to answer. Mr. Ramsey refers to his partner, Fred Ellenwood, who has a list of sheepmen; to Dr. Chas. Keane, State Veterinarian at Sacramento, who has a complete list for the State, and to county veterinarians and the United States Department of Agriculture livestock inspectors.

The farmer who wants a few ewes had better see these men or write to them before August or September and by all means see the sheep before buying them early in the fall. Honest descriptions differ, and seeing the animals before buying avoids dissatisfaction.

A bunch of farmers can get a better deal by clubbing together to hire a man to go see the sheep and get a large bunch at once. Ewes that are too old and have too poor teeth for rangemen's purposes can very profitably produce a foundation flock for the small rancher.

NEW RANGE FORAGE.

[Written for Pacific Rural Press.]

Humboldt county ranges, in common with those in other counties, have been pastured so heavily that the good native grasses have been nearly killed out, partly by close cropping and partly by the weeds, which are less eaten by stock. To replace these in locations where rye grass does not thrive is the object of the introduction by the Farm Bureau of two new range forage plants. As described by Farm Adviser A. H. Christiansen, one of these, Dallas grass, looks much like a plantain, grows taller if undisturbed, but when grazed by sheep it grows so close to the ground that they cannot get all of it. This plant is designed particularly for the sheep ranges. It has been tried out only a year, but appears satisfactory. Canadian bluegrass is being tried out for cattle ranges. It seems harder than common bluegrass, having larger, deeper, more widespread roots, while the tops grow closer to the ground if pastured heavily.

FORAGE GRINDING PAID WELL.

[Written for Pacific Rural Press.]

Several losses decided the Ruether Cattle and Feed Co. of Orange county to buy a mill and grind their own alfalfa, bean straw and beet tops to fatten beef cattle.

The big reason for buying a forage grinder was a comparative experiment. Two hundred and fifty steers fed 35 pounds of hay per head per day gained 150 pounds in 120 days. Another lot of 250 head gained over 200 pounds in 120 days on 24 pounds ground alfalfa balanced by mixing molasses with it. Grinding seemed responsible for much of the greater gain.

One season they lost 22 out of 800 head feeding them on beet tops.

E. C. Spear

ST. HELENA, CALIFORNIA

Breeder of

Rambouillets

I am breeding big, smooth-bodied, densely-wooled Rambouillets.

My stud ram was a prize winner at the P.-P. I. E. and was sired by the Grand Champion at P.-P. I. E.

Yearling rams all sold for 1917. Have some fine ram lambs dropped in January and February.

WRITE OR CALL AND SEE THEM.

The stubs of the beet tops were so hard that these cattle choked on them. Old cattle with poor teeth did not fatten until ground feed was purchased, and the improvement was very noticeable within ninety days.

CREAMERY WILL TEST FOR YOU.

[Written for Pacific Rural Press.]

Send your milk samples to your creamery to be tested if you have no Babcock tester of your own. This is what B. M. Brown and W. M. Colbert & Son of Corning do, and the cream-

eries seem glad to do this service for their customers. The Colberts, who last winter installed a lot of purebred heifers, hope to determine their value in an accurate way when they come in. Mr. Brown also is working into purebreds and he needs to know their value before they eat too much hay. Mr. Colbert, Jr., proposes to take the University short course at Davis and learn to do his own testing. Now all they know is the amount of milk each cow gives and the test for the whole herd, which was 6.4 the last time, according to creamery test.

PUMPKINS FOR HOGS.

To the Editor: Are pumpkins good hog fodder and do hogs like them?—F. M., Coachella.

Pumpkins are great stuff for hogs, but they won't replace grain satisfactorily. They are about 90 per cent water and 7.1 per cent digestible protein, carbohydrates and fat, according to Woll's Handbook for Farmers and Dairymen.

It pays to have comfortable warm quarters for your brood sows and other hogs, thus saving feed and protecting the animals.

Buying continues active in the Eastern wool market. Deals at 52c to 54c for Western wool are confirmed.

FOR SALE

500 Purebred (Unregistered)

Shropshire Rams

One and two-year-olds, in lots to suit.

PRICES ON APPLICATION.

MILLER & LUX

INCORPORATED

1314 MERCHANTS EXCHANGE BLDG.,
SAN FRANCISCO

300

Rambouillet Range Rams

Big, Smooth, Heavy-Wool Rams, Raised on Oregon Mountain Ranges from World-Noted Flocks.

Stock will be ready for inspection at Red Bluff, California, any time after June 5, 1917.

For Prices and Particulars write

ANDREW H. McINNES
Red Bluff, California

Live Oak Stock Farm

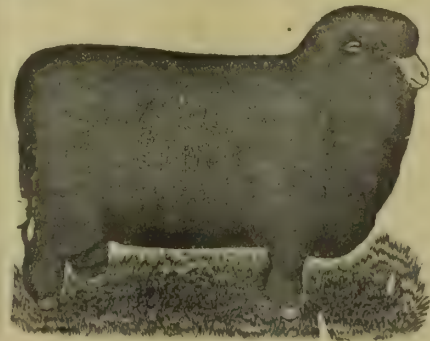
F. A. MECHAM ESTATE

Importers and Breeders of

Red Polled Cattle, Shropshire Sheep, American Merino and Rambouillet Sheep

P. O. ADDRESS, PETALUMA, SONOMA COUNTY, CAL.

Take Electric Cars at Petaluma or Santa Rosa for Live Oak Station



SHROPSHIRE, RAMBOUILLETS and AMERICAN MERINOS



In importing sheep from the East over fifty years ago, among the lot was one without horns. He grew to be a fine, large sheep, without wrinkles, and he sheared, when two years old, a twelve months' fleece, 35 pounds of long, white wool. We felt there was a great advantage in breeding bucks without horns and concluded to try and see what could be accomplished. We have bred from this ram and his get ever since, never using the same ram but one season. We keep our sheep in eight separate flocks and always are careful to not breed a ram on the flock he is from. We do not have more than one ram out of fifty with horns. Our rams at two years will weigh from 150 to 180 pounds, with strong constitutions. They have a long, white wool; a twelve months' fleece will weigh from 20 to 25 pounds.

OUR SHROPSHIRE SHEEP were imported direct from England in 1888 and have continued breeding direct from imported stock since. We have thoroughly investigated all the mutton breeds and have come to this conclusion—that the Shropshire is the best. They shear more wool and a better quality than any other mutton breed. They cross better on the Merino, losing but little in weight of wool. We have made the cross and are well satisfied with it, giving a stronger and larger lamb for market. We are offering this season an exceptionally fine lot of yearling rams for sale, singly or in carload lots. Our stock is all range-raised, hardy and good rustlers. Also have a fine lot of young Red Polled Bulls for sale.



Gertie's Son, Victor, No. 123159
Dam, Victor Lady Lake (R. O. M.) of
536 pounds butter in 303 days as
a 4-year-old.

INVEST in JERSEYS AND START RIGHT

135 Registered Jerseys in my herd, including 18 Register of Merit Cows, Blue-ribbon winners at 1916 Hanford, Bakersfield, and Visalia Fairs.

CORRESPONDENCE SOLICITED.
A. A. JENKINS

TULARE, CALIF.

DAIRY COWS

REGISTERED REEF BULLS

PUREBRED HOGS

Large or small lots. Any order executed.

GEO. P. ROBINSON CO.

436 J Street,
Travelers Hotel Building, Sacramento.
LIVESTOCK BROKERS

Do You Want Long Distance Backing?

We have a son of the California State Champion three-year-old for sale. Born October, 1915; Sired by PRINCE ALCATRA KORNDYKE, whose dam is TILLY ALCATRA.

The Dam of this young bull is not a fifty-pound cow, but she has to her credit 21,208 pounds milk and 860 pounds butter in one year, which is the largest record ever made in California by a Junior three-year-old.

If you are in the market for a bull, it will pay you to visit our ranch and see what we have to offer—at prices that will surprise you.

Look over our consignment at Sacramento May 31

J. S. GIBSON CO., Box 97, Williams, Cal.

"THE NAME GIBSON INSURES QUALITY."



RED HORN CALF MEAL

...GLOBE MILLS...

WESTERN DISTRIBUTORS
LOS ANGELES, OAKLAND, SAN FRANCISCO, EL PASO, SAN DIEGO

REDWOOD TANKS.

35 years in this business. I sell direct to the consumer. You act as your own agent and save 20%. Tanks from 300 gallons to 10,000 gallons in stock. A stock tank 12 ft. x 10 ft. \$10. For hot climates get my patent tank. Reference: Farmers & Merchants Bank of Stockton. Phone 2957.

R. F. WILSON, Stockton, Cal.

In and Around the Dairy

[Written for Pacific Rural Press.]

Cows and Almonds Together.

Cows help the almonds and alfalfa on the ranch of J. Risse in Tehama county. The almonds are not pastured, for cows like the leaves, according to Mr. Risse. But Egyptian and milo corn are grown among three acres of young almonds. Manure is hauled as fast as made, except in bad weather. Most of it goes onto the orchard, but some onto the alfalfa. About twenty acres of alfalfa are cut for hay. The other fifteen acres of alfalfa are pastured so closely that there is no danger of overeating and bloat.

About twenty-three high-grade Jersey cows bred to a purebred Jersey bull have been bringing in cream checks all winter, besides helping fertilize the orchard. From ninety-five eight-year almond trees, \$334.84 worth of nuts were sold, besides seven sacks kept at home which were worth the cost of hulling the crop.

Feed Calves High-Priced Milk.

The California Central Creameries are paying 35 cents per hundred-weight for skim milk at Ferndale for their dried-milk plant. This milk must be delivered at the factory twice per day, where the butterfat is separated for butter. At ten or twelve cents for skim milk to be made into casein, says M. H. Nielson, who has supervision of the skimming stations and factories of Humboldt and Del Norte counties. These high prices tend to make some dairymen stint their calves or cut down the number raised. This is wrong, in Mr. Nielson's opinion, for whatever the price every dairyman should raise calves enough to replace stock that gets too old or otherwise out of the game. The factory at Ferndale and probably the rest sterilize all milk returned to dairymen, as well as using steam to sterilize the cans, etc., so that healthy calves may be raised.

Purebreds Pay Better Than Grades.

Milking fewer cows and making more money is the way E. E. Freeman explains his experience with purebred Holsteins during the past two years.

Previous to that time Mr. Freeman had been running a grade dairy but sold them and purchased a smaller number of registered cows with the money from the grades.

While the smaller number of purebreds have not produced so much fat as the larger number of grades produced, Mr. Freeman has made more money from the purebreds even while he was increasing the size of his herd because of the smaller cost per pound of butterfat produced and the value of his bull calves. He expects to still further enhance the value of his young animals by doing official and semi-official testing.

Piemelons for Hogs and Cows.

To the Editor: Of what value are citrons or piemelons for hogs and cattle?—M. L., Saugus.

J. E. Worthington of San Diego county last winter told us that piemelons are worth \$2 per ton when barley is about \$2 per cwt. He was feeding them to both cows and hogs, and made the following suggestions: When fed to mature hogs they seem to affect the kidneys. Hogs are especially fond of the seed, which constitute nearly half of the melon. Better give cows whole melons than to cut them into pieces on account of choking, which has troubled his own cows. They don't like piemelons when soft ripe.

Piemelons keep better if left in the field until used, rather than piling them up or handling them at all.

Cesspool Drains Cow Yard.

A cement cesspool six feet deep and twenty-five feet in diameter drains the corral in which E. O. McClure keeps his purebred Holsteins in Orange county. The corral is ridged so it drains to pipe leading to the cesspool. Thence the liquids run into irrigation pipe.

In pasture lands that cannot readily be plowed the best procedure is to apply lime.

Use SHARPLES To Prevent Cream-Waste

Sharples is the *only* separator that skims absolutely clean at *all* speeds. All other separators lose considerable cream when turned below speed—admitted by leading experiment stations and all separator manufacturers. Average loss from this cause is 10 lbs. of butter per cow per year, or 80,000,000 lbs. in the United States alone! Sharples would save it all!—due to the wonderful Suction-feed, which automatically regulates the milk-feed so as to insure clean skimming whether you turn fast or slow.

Sharples is an absolute necessity *now*—when the world is clamoring for "more fat." It is the *only* separator that gets *all* the butter-fat out of the milk. Prevent waste by getting a Sharples—and get it *now*, while you can. Ask nearest Sharples dealer to explain it.

SHARPLES Separator

the *only* separator that:

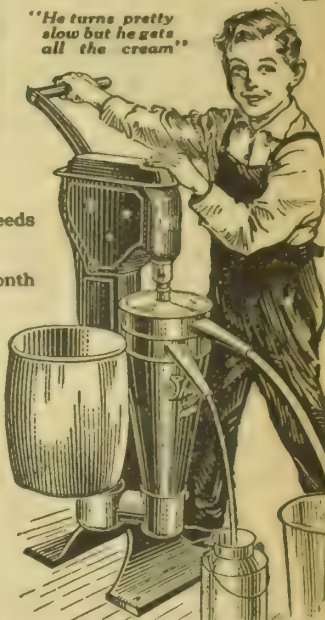
- skims clean at widely-varying speeds
- gives cream of unchanging thickness—all speeds
- has just *one* piece in bowl—no discs
- skims milk faster when you turn quicker
- has knee-low supply tank and once-a-month oiling

Made and guaranteed practically forever by the oldest and greatest separator factory in America. Over a million Sharples users! See your dealer and write for catalog today—address Department 31.

The Sharples Separator Co.
West Chester - - Pennsylvania

Sharples Milkers—used on nearly 400,000 cows daily
Branches: Chicago San Francisco Toronto

"He turns pretty slow but he gets all the cream."



RAISE YOUR CALVES ON—

Rydes Cream
RICHEST SUBSTITUTE



THE MILK IT SAVES SELLS FOR 3 TIMES ITS COST.

GREAT WESTERN MILLS
WESTERN DISTRIBUTORS
Dept. B, Desk 2
LOS ANGELES, CAL.

WHY
\$300.00
WHY

Mr. Dairyman, you have often asked yourself this question when a Holstein breeder has asked you this price for a purebred sire.

If you will send us your name we will send you the answer and will further tell you about some purebred females and males that may be purchased for the next thirty days at remarkably low prices.

Gotshall & Magruder

Breeders of Registered
Holstein-Friesians

RIPON, CALIFORNIA

The Home of the State
Champion Heifer.

Dutchland Sir Pietertje Creamelle's

Ten First Daughters in Milk have average records of 20 Pounds as two-year olds or younger.

Two of These are California
Champion Two-Year Olds



MARIE CLOTHILDE PONTIAC CREAMELLE
Junior 2-year-old record: Milk 391, Butter 22.52, Test 4.6 per cent.



PAULINE INKA DE KOL CREAMELLE
Senior yearling record: Milk 423.4, Butter 24.43 lbs., Test 4.62 per cent.

This wonderful record is convincing proof that this young herd sire transmits his big production and high test breeding.

You Need Some of His Blood in Your Herd

To bring up your butter fat production and increase your profits.

I am offering a few young bulls sired by him, out of big producing dams, and just ready for service, at reasonable prices.

WRITE OR CALL AND SEE THEM.

F. STENZEL, San Leandro, Cal.

BREEDER OF HIGH TEST HOLSTEINS.

Live Stock Notes

(Continued from page 734.)

D. W. Fields of Brockton, Mass., paid \$53,200 for a five-months-old bull calf at the Holstein-Friesian Association Convention auction sale at Worcester, Mass., recently. The bull is King Ormsby Jane Ray Apple. The previous record price for a bull calf was \$35,000.

Lodge Von Heim on the Lake, Kent, Wash., reports the completion of a three-year Junior as follows: Daisy Dewdrop (321945), age 3 years 3 months 14 days; milk, 7 days, 643.6 pounds, butter 34.28; milk, 30 days, 2,786.2 pounds, butter 134.65; milk, 60 days, 5,440.0, butter 253.06. This is the fourth cow this winter to make over 30 pounds at Von Heim. Now on test, Winnifred Piebe De Kol 2nd, who just finished 31.76 in 7 days and still on test.

Duroc Jersey
Registered Association
of
TULARE COUNTY, CAL.

BREEDERS' DIRECTORY	Sows in Herd	B	G
J. P. Walker, Visalia, Cal.	7	1	1
S. A. Williamson, Visalia	1	1	1
Glen Johnson, Lindsay	8	1	1
Allen Thompson, Tulare	9	1	1
Clifford Land Co., Strathmore	4	1	1
W. J. Fulgham, Visalia	6	1	1
Tagus Ranch, Tulare	20	1	1
C. E. Ellis, Tulare	2	1	1
J. I. Dickenson, Visalia	7	1	1
W. J. Higdon, Tulare	4	1	1
R. C. Sturgeon, Tulare	6	1	1

Place Your Money on the Red

Duroc Jerseys

Cherry Red Color.

HERD SIRES:

Tulare Boy

and

E. N.'s Colone

Tulare Boy was Sweepstakes Winner at 1915 Fresno Fair. Weighed 276 pounds at six months of age.

Choice Breeding Stock for Sale

John P. Walker

Visalia, California

TAM WORTH'S

(The Bacon Hog)
Largest Herd in the State

DUROC-JERSEYS

Mature Stock and Weanlings of both sexes. Sure to please.

SWINELAND FARM,
W. O. Pearson, Prop. Woodland, Cal.

Buyers of excess dairy cattle for beef in Humboldt county are now docking everything 4 per cent for shrinkage. But at a recent meeting of the Dairymen's Association with a few of the buyers it was admitted that only old cattle shrink so much, and it is expected that a satisfactory basis will be worked out this fall.

The San Joaquin County Cow Testing Association reports a very successful month for May. Following are the five leading herds in butterfat production for the past month:

Owner—	Average lbs. Butterfat
Gotshall & Magruder, Ripon, 17 cows	45.3
F. J. Kell, Stockton, 18 cows	41.0
R. W. Fisher, Ripon, 22 cows	35.9
E. M. Thorpe, Ripon, 11 cows	35.5
O. Fowler, Banta, 26 cows	33.9

Swine.

The Vail Company of Temecula has gone into the purebred Duroc-Jersey business. They have recently purchased twenty high-class sows from Peters, Lamson & Walker of Devore, San Bernardino County.

The Timken Ranch Co. of El Centro has purchased the Duroc-Jersey boar which was third prize senior yearling at the National Swine Show. The price paid for this boar was \$900.

Duveneck & Pickersgill of Ukiah have recently sold several purebred Durocs locally. A sow and eleven pigs just farrowed sold for \$100, and several sold at three months old for \$15 each.

The Highland Herd of Fair Oaks have just purchased the five Chester White brood sows belonging to the Henderson Company. By this purchase the Highland Herd will have eighteen brood sows, all to pig within thirty days. Their first three sows to have pigs from the boar "Bonito Boy" came in with a total of thirty-nine pigs.

The Delta Farm and Livestock Co. of Colton has recently bought ten registered Holstein cows and two bulls at the Stalder sale and contemplates the purchase of a large number more. In connection with the hundred head of brood sows, all registered Duroc-Jerseys, which this company owns, this makes the beginning of one of the finest livestock ranches in Southern California.

That as good hogs can be raised in California as anywhere is being demonstrated by Russ Avery, who is building up purebred Berkshire hogs on his ranch near Lancaster. A delegation of business men of Los Angeles on a recent visit through the Antelope Valley stopped at the Avery ranch and said they never saw finer hogs anywhere. G. W. Brand of Los Angeles has recently bought out of this herd an eighteen-months-old purebred Berkshire sow for \$100 and a six-months-old purebred Berkshire gilt for \$40 for his country home, Loma Lodge, Los Angeles county.

Beef Cattle.

T. T. Miller of Los Angeles purchased at the Carpenter & Ross sale at Chicago last week one Shorthorn imported cow for \$3,100, a bull calf, ten months old, \$2,000, besides other stock.

S. V. Christensen, Horticultural Commissioner of San Luis Obispo county, says the pasturing carrying capacity of the county is about 67 per cent normal and they are overstocked. He also says that pastures are drying up rapidly.

The Fair Oaks Ranch reports the following recent sales in Shorthorn bulls: Four to Four Pine Ranch, Hearst, Cal.; one to William Muir, Willits, and one to Shadowlake Ranch, Willits. Also in Berkshires, a trio to Four Pine Ranch, Hearst, and a boar to George Fee, Westport, Cal.

W. M. Carruthers returned this week from the East, where he secured for his Mayfield farm a carload of Shorthorns—14 heifers and 3 bulls. These were secured from Hearts Delight Stock Farm, Chazy, N. Y., and Dean Curtis, Ames, Iowa. A description of this stock will be printed after it arrives. Mr. Carruthers also bought for Miller & Lux a carload of Dorset rams.

Keep Your Hogs Healthy

ROWES AUTOMATIC HOG OILER does the trick. It is on guard all the time. The cheapest insurance against parasites and disease.



Pacific Dairy Machinery Co.
56 CLAY STREET SAN FRANCISCO

Milk and Cream Coolers.

Milk Cans.

Cheese and Butter Salt.

Gasoline Engines.

Pumps.

Diablo Separators.

Feed Carriers.

Litter Carriers.

Stanchions.

Cheese Making Supplies.

Boilers.

Save the Hogs

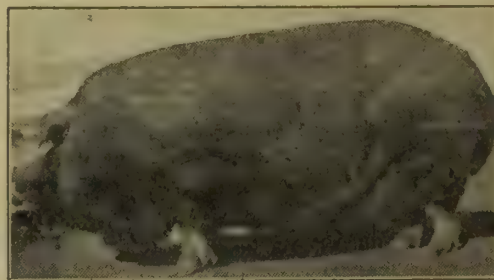


HOG CHOLERA CONTROLLED, providing you vaccinate your hogs with I. S. V. Co.'s 20 C. C. Standard dose Serum. Your hogs will be immune against cholera. Ten C. C. Serum and 1 C. C. of Virus will immunize your 3 to 10 day old pigs their natural life if you use our high potent Serum and Virus, made under U. S. Government License No. 25. Learn how to vaccinate your own hogs and then you will know it is done right. Write for free booklet on Hog Cholera. Agents wanted in every county.

Inter-State Vaccine Co.

430 Bryson Block
Los Angeles, Calif.

BASSETT'S POLAND CHINAS



For many years at widely separated show rings, under many different judges of varying type ideals, my Poland Chinas have been consistent prize-winners. My herd is large and I cull closely. The animals sent out as breeders are the very tops of a large number. I KNOW that my kind of Poland China is a profitable farmer's hog, for I send carloads of them to the packer every year—uniform in size, high in quality, quickly and economically matured and finished.

Young stock, \$30 Up.

M. BASSETT,

Box 1, Hanford, Cal.

GRAND CHAMPION SOW,
P.-P. I. E., 1915; Sacramento, 1916.

The World's Grand Champion Hampshires

Pure-Bred Hogs give more weight for less money in the shortest time.

Sows, Boars, Gilts, bred and open, from the World's Champion Hampshire Stock. All ages for sale.



Write to

F. V. Gordon, or F. A. Langdon

LianoV Ranch Perris, Riverside Co., Cal



Herd sire at age of 16 months.
First in class, Sacramento, 1916.

BIG TYPE DUROC - JERSEYS

The Leading Blood Lines of
the East and Middle West

Offering at the present time choice spring pigs, either sex. A few boar pigs sired by Critic D, also a few by Indian-wild's Orion Cherry King out of a sow sired by Joe Orion II, for May delivery.

FREDERICK M. JOHNSON,
NAPA, CAL. R. F. D. 2, Box 87

Poultry for Profit

[Written for Pacific Rural Press by Susan Swaygood, Pomona.]

QUESTIONS ANSWERED.

Worms in Chickens' Breast Meat.

One of my hens died today; seemed in good health and very fat; the flesh part of the breast was watery, transparent and all under the skin were little white-looking worms. Killed one to eat sometime ago, but as it was similar to this threw it away.—J. O. C.

This is past my knowledge. I never heard of such a thing, but anyway you did wrong to throw it away; you should have cremated it. Is it not possible that the watery or mattery condition of the breast meat comes from injuries, bruises or something? No healthy fowl could be in that condition. I would try Santonine for worms and see if that will do it, but honestly I cannot tell you of any remedy except to get rid of them as soon as possible, clean up the premises and make another start.

Turks Swell Up Around Body.

Turkeys puff up around the body; seem to eat and drink all right, but swell up.—J. J.

This is a sign of dropsy and the only remedy I know of is the homeopathic remedy of Apis. You can get it in tablet form and dissolve a few tablets in the drinking water, half a dozen to a quart of water, and keep it up until cured.

Rabbits with Spots on Liver.

My young rabbits die at about six weeks old and I find the livers enlarged and covered with white spots. I feed rolled barley and greens, sometimes a mash made of bran, alfalfa meal and mids, and they have plenty of fresh clean water. Do rabbits have tuberculosis?—Mrs. V. M. C.

Answering your last question first: No, rabbits do not have tuberculosis, but they do have inflammation of the liver and they also have coccidiosis, and this is the most serious ailment of all. It is caused by internal parasites and once it gets in a flock it becomes chronic with the old ones and they pass it along to the young ones. This is what ails your flock. If you keep hutches in stacks that helps to spread the disease. Separate and spray with a good disinfectant and keep all ailing ones in coops apart. Dandelion greens are among the best.

Rye Too Heating.

To the Editor: Is rye a substitute for wheat as a chicken feed?—P. S., Oakley.

No; rye is of too heating a character to take the place of wheat. A little in winter is all right, but not in summer. Green rye is good. Substitute "gyp" corn for wheat.

Foxtail Troubles.

To the Editor: I had seventeen rabbits, one to three months old. During the winter I fed them alfalfa hay containing a lot of foxtail. About April 1st I started to give them green alfalfa, but two died the first night and another soon after. In a few days I switched back to dry alfalfa, but five more have died. They simply lay down and go unconscious. They have a good, clean pen, protected from the wind. My buck and three does are in good health. What is the matter?—L. P., Ripon.

Foxtail will cause inflammation of the bowels if it passes safely through the mouth and throat. So there is no help for it now. The foxtail will stick anywhere in the mucous membrane or passages. The only thing is not to feed it any more.

WILL EGGS REACH \$1 A DOZEN?

The poultry business is undergoing a great strain at present; the egg specialists are unable to maintain their flocks with the present prices of grain and eggs. There simply is no comparison between the feed price and the price of the hen's product. So it is going to result in a making over of the business, a case of the survival of the fittest. And the fittest to bear the strain will be the small poultryman or rancher who has a few fowls of the heavy types that can rustle around and earn a part of their living without flying into every neighbor's garden patch and will sell for table use twice what the cost of raising them was.

The idea that eggs will reach \$1 a dozen is not correct, because the eating public do not yet fully understand the amount of nourishment contained in eggs nor the real value of the mineral matter in them. As I see it, the thing lies this way: those who can pay a dollar a dozen won't do it, and those who would pay it can't. So don't let this dollar bug get in your ear, but just raise what chickens you can and if you can get a half a dollar a dozen you can stand the racket very well.

Purebred and Commercial

[Written for the Pacific Rural Press by Harry Mortenson, Sulsun.]

IMPROVING THE CALIFORNIA EGG.

To improve the condition of our egg crop is especially important now, when feed is high and the egg merchants are more particular. They have reasons to be, too, because eggs seem high to the housewife, and in order to make her use our products they must be attractive. The American people eat with their eyes; that is to say, appearance is first. Few people realize how perishable eggs are. Poultrymen should use improved methods of handling eggs until marketed. Increased prices to the consumer would be the result. It costs the wholesaler about 20 cents per case to candle eggs. Some poultrymen even have the nerve to ship incubator eggs. Anyone who willfully ships eggs that have been in the incubator for some time should be prosecuted by the Board of Health, since he does an injury to the industry in general.

PRODUCE GUARANTEED EGGS.

Every now and then the Board of Health confiscates a lot of eggs and every such disclosure has a tendency to reduce the consumption of eggs. The fear of breaking a bad egg, not the loss of food contents in the egg, is what makes the demand for guaranteed eggs. The wholesale egg dealers say they receive better eggs from the leading egg-producing districts than they do from the farmer. Why? Simply because the man who makes a business of producing guaranteed eggs cannot afford to do otherwise. The more he gets for his eggs the sooner he will be able to buy an automobile, and this seems to be the sole ambition of everybody nowadays. This is a speedy age and if we cannot keep up we will soon fall in the "also ran" class. The farmer should be more careful how he handles his eggs. That nest you found in the hay mow the other day should not be placed in the egg case until its contents are candled. The eggs may be

good, but who knows? Maybe the little red hen sat on them for a few days before you found them.

GUARANTEE YOUR PRODUCTS.

If you can establish a reputation for first-class goods, it will not be necessary to hunt a market. The market will hunt you. Some of the advantages of guaranteed or "certified" eggs are: 1. Increases consumption. 2. Supplies eggs of unquestionable quality. 3. Avoids waste. 4. Brings higher prices and greater profits. 5. Promotes a tendency to long-term contracts.

CHARACTERISTICS OF GUARANTEED EGGS.

Freshness.—If kept in a cool place a week old egg cannot be distinguished from those one day old. Fresh eggs can be easily detected from stale or cold storage product. The yolk of a fresh egg should be round and stand high; the albumen should be watery; while the yolk of a stale egg is flat and "white" watery.

Attractiveness.—Firm, strong shells are important, as thin, weak shells may break and soil several others.

Uniformity.—All eggs should be uniform in shape, color and size. Uniformity has a magic effect upon the buyer.

Size.—The standard egg should be 2.25 inches long and 1.7 inches in diameter at the widest place. Such an egg averages a trifle over 2 ounces in weight or 1.5 pounds to the dozen.

Color.—Eggs of the same color always appear larger and more attractive than mixed lots. Certain markets have a preference for special color. San Francisco markets prefer white eggs on account of years ago most of the eggs shipped from the East or rather Middle West were brown and local eggs were white, so the people were educated to the white egg. Color of the shell has no influence upon the contents of the egg.

(To be continued.)

GENERAL COMMENT.

AMOUNT OF DAIRY PRODUCTS IN STORAGE.

The following market statistics, taken from the San Francisco Call of Monday, June 4, is of interest to poultry and livestock men:

"Storage figures show that a substantial portion of the local supplies is still going into the icehouses.

"Statistics of storage holdings of butter, cheese and eggs in San Francisco and vicinity on May 30, with comparisons, are as follows:

	May 30	May 23	Year Ago
Butter, pounds ..	352,000	358,000	378,000
Eggs, cases	113,495	109,258	88,483
Cheese, pounds ..	502,289	432,875	1,030,380

Los Angeles holdings, with comparisons, are as follows:

	May 30	May 23	Year Ago
Butter, pounds ..	145,033	130,874	90,087
Eggs, cases	74,112	72,476	56,168
Cheese, pounds ..	231,050	210,205	107,372

These figures show that there are 25,062 more cases of eggs in storage this year than last in San Francisco and 17,944 more cases in Los Angeles, or a combined total of 43,006; but the shortage in the East more than offsets the surplus on this coast.

MORE EGGS PRODUCED THIS YEAR THAN LAST—PRICES ALSO HIGHER.

The poultry business in the State is on the increase, as shown by the market reports. The following are the figures: For the month of May, 1917, there was produced in California 2,755,140 dozen eggs, as compared with 2,129,210 dozen for the same month last year, showing an increase of 625,930 dozen eggs this year.

The prices for the month of May

this year were: High, 35 cents; low, 32 cents; average, 33.52 cents. The average last year for the same month was 24.85 cents.

EASTERN QUOTATIONS COMPARED WITH CALIFORNIA.

These prices are taken from the "Chicago Dairy Produce" of May 29. They are the quotations of Monday, May 28: Chicago, 33 1/2 @ 34 1/2 c; New York, 36 @ 37 c; Boston, 36 @ 37 c; Philadelphia, 36 1/2 c; San Francisco, 34; Los Angeles, 33 1/2 c.

EASTERN RECEIPTS IN COMPARISON.

Chicago during the month of May produced 191,306 cases of eggs less this year than last. In New York there was 41,918 less for 1917, while Boston produced 19,151 cases more this year. We can, therefore, look for shipments from here to the East this winter, which no doubt accounts for the excess amount stored in this State. The writer has not been able to secure quotations from the Northwest, but we understand the supply is way short.

STUDY OF MARKETS AND STATISTICS NECESSARY TO POULTRYMEN.

One of the points brought out by Prof. Dougherty at the poultry meeting recently held at Davis a few weeks ago was that we should study markets and market reports the same as a manufacturer. Therefore, the figures and comparisons in this week's issue.

DO YOU LIKE THE COMMERCIAL AND FANCY POULTRY PAGE?

If not, tell us where and how we can improve it. The writer has been in the poultry business for twelve years and realizes some poultry articles are not worth the paper they are written on. We are at your service, so make your wants known.

A few months ago the Rural Press made a brief reference to Sodium Fluorid as a remedy for quickly ridding fowls of parasites of various kinds. A number of inquiries were received from our readers for further details of this remedy, which were not then available. See Farmers' Bulletin 801 of the U. S. Department of Agriculture.

Poultry Breeders' Directory

Rates in this directory, 3c per word each issue; or if carried weekly for one year, 2 1/2 c per word.

BABY CHICKS—HATCHING EGGS—White, Brown, Leghorns, B. I. Reds, Barred Rocks; sturdy chicks from well-mated fowls; prompt; efficient service. Write for circular. Campbell Poultry Ranch, Campbell, Cal.

BARRED PLYMOUTH ROCKS—Winners at leading shows and wonderful layers. Choice stock for sale. "Nothing better in poultry." Catalog free. Chas. H. Voddien, box 396, Los Gatos, Cal.

POULTRY FOR SALE—Lay all winter. Rouen, Pekin, Jaying ducks, \$12 doz. Cyphers \$14 incubator, 380-egg, like new, \$12. Beaver Grove Poultry Farm, St. Helena.

S. C. RHODE ISLAND REDS—220-egg record in 12 months; breeding males; eggs at half price. Wm. Larm, 3915 39th ave., Fruitvale, Cal.


INCUBATORS—For Essex Model Incubators at factory prices, write Geo. H. Croley Co., Inc., Poultry Supplies, 631-637 Brannan st., San Francisco.

CHICKENS, DUCKS, GEESSE, GUINEAS, Pea Fowl, Pigeons. Wm. A. French, 545 W. Park st., Stockton, Cal.

WHITE PLYMOUTH ROCKS—Hatching eggs from splendid layers. Mrs. J. B. Tupper, Route A, Ceres, Cal.

EASTMAN'S BRED-TO-LAY Barred Plymouth Rocks. Fairmead Poultry Farm, Fairmead, Cal.

BRONZE TURKEYS—Albert M. Hart, Clements, Cal.



Try the Coulson
System of Feeding
Our free book "Chicken from shell to Market" gives full particulars
Coulson Co. Pelaluma Cal.

Mrs. Best's Letter.

WHAT TO WEAR IN VACATION.

My Dear Friends: Vacation time is here and to most of us, I hope, it means a little change of some sort. Perhaps a trip to the city, to view the interesting sights and do a little necessary shopping, or an auto trip to some beauty spot, where the outdoor life will rest and refresh one.

San Francisco is cool the year round, so an ordinary tailor suit will not be too warm to wear, with an extra coat if driving or out in the evening.

But for camp wear it is an entirely different problem. Most of us have old skirts that can be shortened for use in camps, but they should not be too heavy, nor of material that catches the dust and in turn is caught and held by every passing bramble.

If you must get new things to wear, there are very attractive suits being shown in the shops of serviceable khaki and tan crash outing cloth. The khaki suits are of heavy weight, with full skirt and smart Norfolk coats and range in price around \$5, while the tan crash looks much like linen and is cheaper in price. At one of the stores these suits are quite military in cut and are called "Miss Presidio."

Some of the styles have no coats, but are more like shirt waist dresses—the skirt being a plain gored model, while the blouse is loose fitting, open at the throat and long sleeved.

There are many separate skirts of khaki, corduroy, covert cloth, cotton Gabardine, poplin and pique in both plain and figured goods. These are all comfortably full, some of them pleated and have wide belts and patch pockets.

Most of these materials can be purchased by the yard and the garment made at home, but the price is so tempting on the ready-made garments that it hardly pays to do the work.

For the little people of the household, in addition to the ever-useful overalls, there are Indian suits, cowboy suits and military suits of tan cloth that would make any child happy to possess and the price is less than \$2.

The middy blouses and smocks are good for wear with the separate skirt and there are also striped wash silks made in simple styles and white wash waists with gay collars and cuffs with a bright tie at the throat. Pongee is very good style, both for suits and separate waists.

Instead of fancy work this summer, many women will be occupied with knitting and to hold the yarn and needles are shown very attractive hand-made rush baskets. Many women are carrying perfectly immense work bags made of gay cretonne and having hoops for handles. They more nearly resemble darning bags than anything else one can think of, but they are fine for the bulky work that almost everyone is occupied with.

ROSABELLA BEST.

POLISHING OLD FLOORS.

If the floor has never been finished, sandpaper thoroughly, fill the cracks with a paste wood filler and let stand until perfectly dry. Sandpaper again if necessary. Then apply a floor wax

THE HOME CIRCLE

with a soft cloth and let dry for a few minutes. Rub to a polish with a clean, dry brush or a soft cloth. A weighted floor brush is a great help. If the polish is not high enough, apply a second coat in the same manner. If the floor has been finished, clean thoroughly with gasoline (never with soap and water) and if badly marked, use a varnish remover, then proceed as for new floor.

USE OF RIPE OLIVES.

Ripe olives are a valuable, nutritious and easily digested food, as well as an appetizer, and should be used more extensively in cooking than they are.

For lunches for school children olives can be combined with other materials and make a variety of appetizing, nourishing sandwiches.

Hard-boiled eggs, put through a sieve and combined with chopped olives, and mixed with well-seasoned dressing, make delicious sandwiches, while cottage cheese and chopped ripe olives make very good brown bread sandwiches.

For salads there are innumerable combinations, olives with pineapple, or with Waldorf salad, nuts, celery and apples, or with any of the molded salads, they are a great addition, either served whole at the side or chopped.

NEW KNITTED SCARF.

One of the new things for the woman who knits to make is the new scarf. This scarf should be as long as the distance from wrist to wrist across the shoulder and about eighteen inches wide. Onto each end of this scarf knit a close-fitting cuff, having the scarf join on the under side of the arm. It may just fall loosely there or be tied with ribbon bows to the elbow. This gives the effect of the scarf across the shoulders, without having the dragging ends over the arms.

HOME-BREWED BEER.

Editor Home Circle: I would be very grateful if one of the readers of your paper could furnish me with a good, tried recipe for home-made beer or ale. I have drunk home-brewed beer that beat the commercial product all hollow, but have lost track of the person who made it.—W. F. A. McI., Thermal.

If some of our readers can furnish this information, we will pass it along.

EXTRA TIN CANS.

Large tin canisters or tin cans with removable covers may be utilized for canning certain fruit products. Such cans should be sterilized and their covers hermetically sealed in place with solder or wax.

CANNING FRUITS WITHOUT SUGAR.

The sugar used in canning fruit is for the purpose of improving the flavor and is not necessary for preservation.

Fruit of any kind suitable for canning may be put up without sugar, but unless it is thoroughly ripe it will be necessary to add the sugar when it is to be eaten.

The ordinary methods of home canning may be used, either the cold pack or hot pack methods.

In the cold pack, fruit is prepared as needed and packed tight in clean, sealed cans or jars. Water as hot as can be used without cracking the jars is added and the covers put on loosely. The jars are then placed in a vessel of boiling water for twenty to forty minutes. A wash boiler with a tray on which to place the jars will answer the purpose. The water in the boiler should come half way up the sides of the jars. While still very hot, the tops should be screwed tight and the jars taken out and placed upside down to cool.

For the hot pack the fruit is cooked on top of the stove in a large kettle until tender, with a small amount of water to prevent burning. After reaching the boiling point, the jars are filled with fruit and enough juice to cover. Seal the cans and for an extra precaution heat for twenty minutes in the boiler.

If there is an excess of juice, it may be used for jellies, by boiling it hot and making the jelly up as wished.

SPAGHETTI WITH PIMIENTOS.

One 10c can pimientos. Butter 6 brown custard cups, line with pimientos and fill with spaghetti prepared as follows: Cook 1-3 package of spaghetti in boiling salted water until tender, drain and when partially cool add 5 tablespoons grated Swiss cheese, mix thoroughly, season with salt and pepper. Steam on top of stove twenty minutes, turn out on platter so as to show pimientos, and put 1 tablespoon following sauce on top. Sauce—1 half-inch slice butter, yolks of 2 eggs. Melt butter and when cool drop slowly on beaten egg yolks, as when making mayonnaise. When mixed, add salt and paprika to taste and 1 tablespoon vinegar. Prepare sauce while spaghetti is steaming.

SPRING MULLIGAN.

One cup new turnips, diced, $\frac{3}{4}$ cup carrots, diced, $\frac{1}{2}$ cup potato, diced, salt, cook in just enough water to have none to drain off. Make cream sauce of 1 tablespoon butter, melted, to which is added 1 tablespoon flour, salt and pepper and 1 cup of milk. Cook until creamy and pour over the vegetables.

Good Health.

[By H. E. Pastor, M. D.]

Potato Bread vs. Wheat Bread.

Is it desirable to substitute potato flour for wheat flour, as advised by the economy department of the U. S. Department of Agriculture? we have been asked. Not as long as you can afford to buy the wheat article. It is a very simple matter to substitute bulk for bulk, but you get bulk only in the substitution and not the chemical or food value equivalent. Potatoes are deficient in protein (the tissue-forming element) as compared with wheat, and therefore cannot take the place of this cereal as a food for growing children. Potatoes, as such, however, are an excellent and sustaining food. In respect to the mineral salts contained, they are superior to wheat, showing a much larger proportion of lime and potassium combinations. In England, where the use of potatoes in bread and cake making is much commoner than in the United States, this writer has eaten a great deal of "potato cake" and enjoyed it as a tidbit. However, weight for weight, potatoes are less nourishing than the wheat cereal, and when served at the table potatoes should be served frankly as potatoes. The dinner is no worse off for knowing it and the server may have the satisfaction of a clear conscience.

Thoroughly Cook Your Pork.

Twelve cases of trichinosis were diagnosed by the county physician of Marin county in March last. These cases all occurred in one home, that of a Portuguese family living in the country, and was brought about by eating partially cooked pork and uncooked sausage. It is not a safe practice to eat raw meat of any kind under any circumstances, unless you have some knowledge of the condition of the animal before being butchered. Pork from unknown sources especially should come under suspicion. See that your fresh pork is well done before being eaten.

Eat Enough and No More.

The following is a good standard to be guided by at the table: "Eat enough food and no more," rigidly followed, would reduce greatly food bills in many homes and at the same time tend to improve the physical condition of all members of the household. If there is any departure from this rule, we would advise eating a little less than you think you need.

Health Notes.

The lemon is the most useful remedial agent in the whole category of fruits and vegetables.

Professor Metchnikoff believed that carrots contain a sugar that kills a bacillus that shortens human life. There is a popular tradition that carrots possess, too, the property of bestowing a fine complexion on those who eat them regularly.

"As a man thinketh so is he." This is true in large measure of health, though not to the extent that the drugless practitioner would have us believe. By thinking health and visualizing the results of good health, strength and robustness tend to be induced.



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12 Choice Dahlias, separate colors 1.00
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12 Single and Pompon Chrysanthemums, separate colors 1.00
50 Vegetable plants—tomato, celery, pepper, cabbage, egg plant, etc. 1.00
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in 4-in. pots now ready, 25 cts. each, \$2.50 per dozen. Am booking orders now for choice varieties of CHEYSANTHEMUMS, commercial, show, single and pompona. Forty varieties of PELARGONIUMS in 4-inch pots will soon be in bloom, 25 cts. each, \$2.50 per doz. Also a large variety of other stock. Send for catalog.

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FLUFF.

O little cat Fluff, how sweet you are—
All dressed in your tiger silk,
With your long black tail all marked
in rings
And tipped as white as milk!

How bright are the eyes in the little
cat head,
How soft is your rhythmic purr;
How sharp are the claws in the little
cat paws,
And how warm is your coat of fur!

O little cat Fluff, with his tinkling
bell
Hung on a ribbon red,
Is fast asleep on the kitchen lounge
With his paws beneath his head.
—Dumb Animals.

HOUSEHOLD HINTS.

The life of a linoleum can be
much prolonged by frequent oiling.

Grease the cup in which molasses
or honey is to be measured and they
will not stick to the sides and
waste.

Sugar syrups can be prevented
from graining when standing by
adding cream of tartar to the syrup
while hot.

Layers of papers put over the
springs, under the mattress, help
keep out the cold air in a bed on
a sleeping porch.

In baking large cakes that must
remain in the oven some time, put
a pan of water in the oven. This
will prevent burning.

Vegetables, soups and meats must
be sealed in the usual fruit jar or
tin can to keep, so these should be
reserved for that purpose.

To remove wall paper, brush over
with alum water, using a large
brush. Let dry, and the paper can
be removed without trouble.

The more rapidly carrots are boiled
the smaller is the amount of nutri-
ents extracted and the loss in
weight. Even less material is lost
when the carrots are cooked by
steaming. This probably is true also
of parsnips and other succulent
roots.—Office of Home Economics,
United States Department of Agri-
culture.



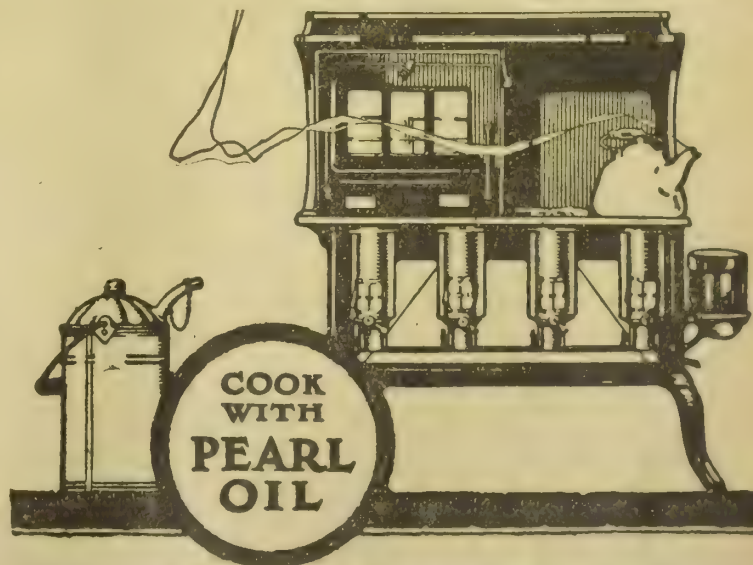
*The high record, trap-nested hen, the A.R.O.
cow, the well finished steer, the well grown
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Whatever you raise that's a bit better than the
ordinary, is worth an auto-photo-graphic record.
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wood or coal stove and it's much cheaper to
operate. Meals in a jiffy, and a cool kitchen in
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the year 'round cooking. Bakes, broils, roasts,
toasts. Steady, evenly-distributed heat, the best
for cooking.

The long blue chimneys prevent all smoke and
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In 1, 2, 3 and 4 burner sizes, with
or without ovens. Also cabinet
models. Ask your dealer today.

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STANDARD OIL COMPANY
(California)

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Where You Can Secure Larger
and Better Variety, Latest Styles
and Best Values:**



**—at Barker Bros.
in Los Angeles**

—By coming direct to this great home-furnishing estab-
lishment, either in person or by mail, you will at
once recognize the many advantages afforded in the
beautification of YOUR home, no matter at what dis-
tance you live from Los Angeles.

—Thousands of out-of-town home furnishers are now
buying at Barker Bros. because they realize the im-
portance of selecting exactly what they require from
this immense stock and of being able to effect savings
possible only in a store like this, where prices are
naturally more favorable because of an immense
business transacted.

—If YOU have a single want in home furnishings of ANY character, choose it at Barker
Bros. If you can't come to our store, write our Mail Order Dept.

**Remember we pay the freight 250 miles on any ship-
ment and make liberal allowance for greater distances.**

IMPORTANT—Send for our 48-page book of Draperies, Floor Coverings, etc. A postcard
request will bring it to you promptly without cost.

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Home
Furnishers

Barker Bros
ESTABLISHED 1890

724-728 S.
Broadway
Los Angeles

SAN FRANCISCO.

San Francisco, June 13, 1917.
WHEAT.

The numerous conflicting reports of the country's crop prospects from Eastern sources—sometimes indicating large crops and sometimes shortages—together with a nervous feeling as to the attitude of Russia and the general war situation, engenders a sense of insecurity amongst dealers. Receipts from the North are unusually light. Jobbers' stocks virtually are cleaned up, yet there is very little demand; and, for the reasons above mentioned, values are weaker, with declines in evidence. The same bearish influence was felt on the Chicago market on Tuesday.

Southern wheat, recleaned.....None offered
Northern Club.....None offered
California Club, per ctn.....None offered
Northern Bluestem.....\$4.00@5.00
Northern Red.....4.65@4.70
Russian Red.....4.55@4.60

BARLEY.

New crop barley is turning out rather light weight, although the volume is of good average, exceeding expectations earlier in the season. In some sections, however, the barley crop is said to be of exceptionally high quality, showing the difficulty in arriving at correct conclusions, owing to the great area of the State. Very little old stock is on hand and, with not much demand owing to unsettled conditions in the brewing industry, the market is weak and listless.

Shipping, ctn.....Nominal
Brewing.....Nominal
Choice feed, ctn.....\$2.05@2.10

OATS.

Reports from the North as to the yield there are very encouraging. In California the acreage sown to wheat was smaller than usual, and the season's crop is, therefore, in accordance. As a consolation, however, all reports confirm the fact of the grain being of full weight. Trading consists merely of transactions in a jobbing way and the market consequently is weak and declining.

White feed, per ctn.....\$2.55@2.60

BEANS.

The local market is unusually quiet for this time of year, when generally the demand is good. There was heavy buying earlier in the year—due to hysteria on the part of the public—and these accumulated stocks must be exhausted before there will be any active demand for more, so that in about thirty days or so there should be a resumption of trading.

Bayos, per ctn.....\$10.50@11.00
Blackeyes.....9.25@9.50
Cranberry beans.....11.25@11.50
Horse beans.....5.50@6.00
Small whites (south).....15.50@15.75
Large whites.....15.50@15.75
Pinks.....10.50@11.00
Limas (south, recleaned).....13.75@14.00
Red kidney.....13.00@13.50
Mexican reds.....11.25@11.50
Tepary beans.....None offered
Garbanzos.....\$6.25@6.50

CORN.

Eastern yellow corn is fairly steady at the quotations of last week, but corn is no exception to the ruling uncertainty of the grain market generally. Egyptian, however, due to rumored scarcity, advanced a little on Wednesday.

(First-hand prices on strictly first-class grain, San Francisco.)
Eastern Yellow, ctn., bulk.....\$3.25@3.30
California, sacked.....3.30@3.40
Milo Maize.....None offered
Egyptian.....4.00@4.10

HAY.

Arrivals of old hay for the past week have totaled only 828 tons. The demand, however, is remarkably light both in San Francisco and in Oakland, and no shortage has developed. The very high prices have caused many former users to substitute motor vehicles in whole or in part; and where horses are still employed the most rigid economy is employed, thus reducing the outlet for hay materially. Harvesting of the new hay crop is in full operation in many sections, and some new hay has now reached this market. This, in carload lots, is bringing \$17.50 to \$18.50 for barley hay and \$20 to \$22.50 for wheat hay. Alfalfa hay continues to be in good demand, and is moving into consumption satisfactorily. No second cuttings of alfalfa have yet reached this market. The export demand for hay is not so active at present as it was, though there is some export movement right along. There is no demand for hay for Coast shipment, owing to the high prices. With a fair-sized crop in sight, dealers urge that the high prices are not justified and that lower figures must be accepted before the crop sells freely.

Wheat, No. 1.....\$27.00@28.00
No. 2.....25.50@26.50
Tame oats.....29.00@30.00
Wild oats.....Nominal
Barley.....\$25.00@27.00
Alfalfa, new, first cut.....14.00@15.00
Stock hay, new.....10.00@12.00
Straw, per bale.....1.00@1.10

FEEDSTUFFS.

Naturally, at this season, all millstuffs feel the effect of the plentiful green feed, and of the harvest now beginning to get under way. Nearly all lines have taken a decided tumble, bran leading the way with a decline of \$2. Middlings, rolled barley, rolled oats and shorts all shared the same fate; and only coconut cake withstood the onslaught, and that, being unaffected by any harvest in this temperate zone, advanced a dollar. There is no tankage offering.

(Per ton San Francisco.)
Beet Pulp, per ton.....\$35.00@40.00
Alfalfa meal, per ton.....30.00@32.00
Bran, per ton.....44.00@45.00
Oil Cake.....None offered
Coconut cake or meal.....\$38.00@39.00
Cracked corn.....72.00@73.00
Middlings.....55.00@58.00
Rolled barley.....45.00@46.00
Tankage.....None offered
Rolled oats.....\$53.00@54.00

THE MARKET REPORTS

Figures Given are Independent and Reliable.
Prices Quoted as Paid to Producers.

Rice middlings.....None offered
Rice bran.....\$30.00@32.00
Shorts.....48.00@50.00

POTATOES, ONIONS, ETC.

Receipts of new potatoes are fairly large and of excellent quality. There is very little local demand for old stocks. Considerable shipping of Garnet Chilies is being made to Chicago and other Eastern points. A big crop of Garnet Chilies has been raised in the Mission Hills in this city. Onions are plentiful, but the heavy demand keeps prices steady. String beans are cheapening, the good weather bringing them in in larger quantities. Wax beans are lower. Tomatoes are arriving slowly from Imperial Valley, and are selling readily in this market at \$2 to \$2.25. Green onions are quoted at 40 to 75 cents a box.

Asparagus, per box.....\$1.75@2.25
Peas, per lb.....2@3c
String beans, per lb.....3@6c
Wax beans, per lb.....3@6c
Hubbard squash, per lb.....None
Summer squash, per crate.....50@75c
Cucumbers, per box.....\$1.00@1.25
Lettuce, crate.....60c@1.00
Celery, Delta, crate.....\$1.00@1.50
Tomatoes, crate.....\$2.00@2.25
Rhubarb, bay, per box.....75c@1.15
do. San José.....\$1.15@1.25
Potatoes, ctn., Delta.....3.25@4.25
Salinas.....Cleaned up
Oregon.....\$4.50@4.75
New, per lb.....3½@4½c
Sweets, per lb.....None offered
Onions, green, per box.....40@75c
Delta reds, new, per sack.....\$1.40@1.60
Bermuda (seed), per ctn.....1.40@1.60
Garlic, lb.....1@4c

POULTRY.

Receipts of California poultry stocks continue in good supply, as they have been throughout the week. In spite of heavy arrivals, however, the local demand was able to take care of them in good shape. The fact that the domestic lines have been moving better is in a great measure accounted for by the fact that there has recently been a slackening off of Eastern shipments to this point. Broilers under one pound is the only line to show a decline for the week. Squabs were quoted on Wednesday at \$2.50 to \$3 per dozen. All other lines remain firm at former quotations. Ducks and geese, for some time disregarded, seem to have re-

gained interest and are now selling well.

Turkeys, live, lb.....20@22c
do, dressed, large, lb.....Nominal
Broilers, 1½ to 2 lbs.....25@28c
do, under 1 lb.....20@21c
do, 1½ lbs.....23@24c
Fryers.....28@30c
Hens, extra, per lb., colored.....21@25c
Small leghorn.....17@18c
Smooth young roosters, per lb. (3 lbs. and over).....30c
Old roosters, per lb.....12@14c
Geese, per lb.....19@20c
Squabs, per doz.....\$2.50@3.00
Ducks.....18@20c
Old.....17@18c
Belgian Hares (live).....14@15c

BUTTER.

The week's receipts totaled 601,800 pounds, against 541,100 pounds for the previous week, showing an increase of 60,000 pounds. This is another factor weighing down the market, for, as predicted last week, a break in the market has occurred. Prices dropped a half cent on Monday, a cent on Tuesday, and on Wednesday was 2½ cents below Saturday's quotations. There are several causes for this. The Eastern production is a month late this year, and the present time is the Eastern full season, thus taking the Eastern buyers out of the market for the present. Some Government orders are coming in, but they are easily taken care of. There seems to be no apparent reason for any advance at this time, and the market may be termed weak with a tendency to drop further.

Thurs. Fri. Sat. Mon. Tu. Wed.
Extras.....27 37 37½ 37 38 35
Prime firsts.....36 36½ 36½ 36½ 35½ 34½

EGGS.

During the week 17,005 cases of eggs arrived, less than the previous week's supply, which was 18,165 cases. In spite of a diminution of receipts, values have not been maintained, and they are weak to day at lower quotations. Some anxiety may be felt by dealers on account of the tremendous stocks in storage, exceeding those of last year considerably.

Thurs. Fri. Sat. Mon. Tu. Wed.
Extras.....32½ 31 31 31 31 31
Extra 1sts.....None 30 30 30 30
Extra pullets.....27½ 28½ 29 29 29½ 30
Ex. 1sts pul.....28 28 28 28 29 29

Special Deciduous Market Report

(By J. L. Nagle.)

Sacramento, June 11, 1917.

Eastern cherry markets up to date have realized exceptionally high prices. The demand has been in keeping with the supply and the quality of the fruit has been considerably above par. In most instances the quantity of the cherry crop was underestimated. Due to the difficulty in securing certain classes of lumber necessary for the manufacture of what is commonly known as the Eastern cherry box, cherries have been packed in some districts in twelve and twenty-basket crates and also in lug boxes. This is rather an innovation and an experiment as far as California is concerned, but has worked out very satisfactorily and it is not unlikely that a very large proportion of next season's cherry crop will be marketed in a different style package than has been commonly used in the past. The deciduous season is about two weeks late and when the bulk of our fruit comes in competition with Eastern fruits, this may prove somewhat of a handicap. The crop of shipping apricots is light but the quality is exceptional. What few cars have arrived in the East have found a ready market and indications are that the entire crop will move at good prices. Early varieties of plums and peaches are moving East in light supply and finding a ready market. The following prices have ruled for the week:

Boston.—Royal Anne cherries averaged \$1.95; Bing, \$3.00; Tartarian, \$2.00; Republican, \$2.10; Oregon, \$2.10; Rockport, \$1.50.

New York.—Tartarian cherries averaged \$1.92; Rockport, \$1.60; Royal Anne, \$1.95; Oregon, \$1.90; Nonpareil, \$2.25; Bing, \$2.50; Royal apricots, \$3.70; Seedling, \$2.55; Pringle, \$2.15; Mayflower peaches, \$1.70.

Chicago.—Tartarian cherries, \$1.60; Republican, \$1.90; Bing, \$2.30; Royal Anne, \$1.60; Oregon, \$1.90; Royal apricots, \$2.60; Newcastle, \$2.10; Seedling, \$2.42; Clyman plums, \$1.42.

Total shipments to June 12, 251 cars.
Total shipments same date, 1916, 740 cars.

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Total shipments to June 12, 251 cars.
Total shipments same date, 1916, 740 cars.

Special Citrus Market Report

Los Angeles, June 12, 1917.

Shipments of citrus fruits from Southern California from November 1 to June 10: Oranges, 28,564 cars, and lemons, 3065 cars. Same time last season: Oranges, 23,042 cars, and lemons, 4175 cars.

Shipments from Central California from November 1 to June 8: Oranges, 4229 cars, and lemons, 164 cars. Same time last season: Oranges, 5384 cars, and lemons, 146 cars.

There has been a further improvement in this market the past week. The eastern market situation continues strong. The navel season is fast drawing to a close and the Valencia shipments as yet are light. At all the eastern markets both oranges and lemons are reported higher than a week ago, and the demand very good. Locally the market has shown a stronger tone in sympathy with the situation east. Buying, however, has been moderate, as there is much other fruit and many berries on the market to attract the attention of buyers from oranges. Local packers are still paying 1@1½c per pound in the grove, picked, for navels and bidding 1½@2c per pound in the grove.

picked, for Valencias. At these prices they are making fair purchases. Grapefruit continues slow sale at 1½@2c in the grove, picked. Lemons are doing little better. Good shipping stock is bringing 1½@2c in the grove, picked, but lower grades are dull at much lower prices. Have to be sold for what they will bring.

AUCTION SALES.

New York, June 11.—Forty cars oranges and four cars lemons sold. Market strong and higher on oranges and strong on lemons. Weather cloudy. California navels averaged \$1.75@3.85. Valencias averaged \$3.00@3.80. Lemons averaged \$3.40@4.65.

Boston, June 11.—Twenty-three cars sold. Market stronger and higher on both oranges and lemons. California navels averaged \$2.25@4.00. Lemons averaged \$2.70@4.30.

Philadelphia, June 11.—Fourteen cars sold. Market stronger and higher on both oranges and lemons. California navels averaged \$1.90@3.35. Valencias averaged \$2.90@3.20. Lemons averaged \$4.40.

PREVAILING FOOD PRICES LARGELY SPECULATIVE.

At a meeting of all California canning organizations held in San Francisco last week, an agreement was made to offer to the United States the entire pack of the season at a price to be set by the Government. This matter is now before the Food Commission at Washington. The further complication of the marketing situation is the bill before Congress to empower a Food Commission to fix the price on all staple food products. Until this matter is settled, very little trading will be done. The fact that the world needs California food products, however, means that good prices are to be expected, though the present market is chaotic.

CHEESE.

There is little to be said about cheese this week. On change it proved very weak, in sympathy with its cousin, butter. Supplies reaching here aggregated, during the week, 315,000 pounds, overtopping those of the previous week of 271,500 pounds. Probably there will be less export demand.

Y. A.'s.....23½c
Fancy Calif. Flats, per lb.....23½c
Monterey cheese.....16@24c

DECIDUOUS FRUITS.

Storage apples, while ostensibly in the market, are really to be considered "out," as they are practically exhausted. A few—very few—green apples have arrived and are selling at from 15 cents to \$1 per box. Figs from the Coachella Valley are arriving pretty freely. Peaches and apricots have dropped in value owing to the heavier receipts as the season advances. Cherries are firm at former quotations.

Cherries, bulk, per lb.....5@10c
Royal Anne, per lb.....5@10c
Apricots, per crate.....\$1.10@1.25
Peaches, per crate.....1.00@1.25
Figs, per box.....1.00@1.50

CITRUS FRUITS.

It is only a matter of a couple of weeks when navel oranges will be a thing of the past, and Valencias will rule the orange market. Valencias took an advance Wednesday of 15 cents a box owing to the heavy demand engendered by the hot weather all over the country. The same conditions apply to lemons, which from indications, will advance probably a dollar during the next two weeks. It is an axiom among the trade that warm weather makes good prices for citrus fruit of all kinds, especially lemons.

Oranges:
Valencias.....\$3.00@3.25
Navels, fancy, per box.....3.00@3.25
do. Choice.....2.75@3.00
Tangerines.....1.75@2.25

Lemons:
Fancy, per box.....\$4.25@4.50
Choice.....3.25@3.75
Standard.....1.50@2.25
Lemonettes.....2.00@2.25
Grapefruit, fancy.....3.00@3.25

DRIED FRUITS.

The old refrain "quiet but steady" applies to the dried fruit line today. Due to lack of tonnage, there is no exporting of any consequence, so dealers are reduced for revenue to home trading only. No change in values is noted. Eastern buyers are already approaching the prune and apricot growers association in the Santa Clara Valley; but while wishing to receive orders at the base price, the Association has not yet fixed this. It may be 6 or 7 cents, but as yet nothing definite has been arranged. The crop of prunes in the Valley is very large and said to be a "bumper."

(Net to growers, bulk basis, f. o. b. shipping point.)

Apples, new crop.....9@9½c
Apricots, per lb.....16½@16¾c
Figs, black, 1916.....8c
do, 1917.....5½@6½c
do, white, 1917.....6@6½c
Calimyrna, 1917.....9@10c
Prunes, 4-size basis, 1917.....6½@7½c
Prunes, 1916.....8½@9c
Pears.....8@10c
Peaches, 1917.....8½@9½c

BERRIES.

Southern and Fresno straws are off the market for the season. Longworths hold their value well. Raspberries are now quotable by the chest at \$8 to \$12; but Loganberries have declined considerably owing to the quick ripening of the past week.

Strawberries (per chest).....\$5.00@6.00
Longworths.....6.00@8.00
Blackberries, crate.....\$5.00@6.00
Raspberries, per chest.....\$8.00@12.00
Loganberries, chest.....4.00@5.00
Gooseberries, lb.....7c

LOS ANGELES.

Los Angeles, June 12, 1917.

BUTTER.

Receipts of week ending June 12.....385,740
Receipts of same week last year.....451,040

There was a much freer movement to market the past week, yet with an improved consumptive demand the market was held steady throughout. While the receipts since our last review have been better, they were still lighter than the same week last year. There was taken into cold storage here for the week ending June 9, 1917, 83,145 pounds of butter against 49,390 pounds the same week last year, the excess of holdings now being only 33,692 pounds, against 54,946 pounds the end of the week previous. Chicago went off 1c and New York 1½c for the same time, but this had no influence upon the market here. Extra in Chicago Monday was 29@30½c, making a difference between that and the San Francisco market of only 2@2½c. Tuesday, with light receipts, the market held steady in a face of lower markets both in Chicago and San Francisco.

We quote:
California extra creamery.....38c
Prime first.....37c
First.....36c

Daily quotations:
1917—Wed. Th. Fri. Sat. Mon. Tu.
Extra.....38 38 38 38 38 38
1916—
Extra.....27 27 27 27 27 27

EGGS.

Receipts (railroads) for week ending June 12, 1917, 2,713 cases.
Receipts (railroads) for week ending June 12, 1916, 3,783 cases.

The market the past week developed a decidedly weaker tone. Receipts were better and the markets East broke sharply, which had a bearish influence upon the market here. But at the lower prices there was some disposition to take hold for storage purposes. Besides the receipts of fresh

GRAIN SACKS HIGH PRICED OWING TO SHORTAGE.

Barley and wheat sacks are now selling in quantity at 13 to 13½ cents each, as against 8 to 10 cents a year ago. We learn that the San Quentin prison output has been all disposed of; and, while the supply now available from other sources is good, yet the larger grain crop than was anticipated a month ago will doubtless cause a shortage before harvesting is completed. Barley is now being harvested and the yields are running heavy. Instead of a 450,000-ton crop, the estimates now are for fully 700,000 tons in California.

ranch eggs, there were 400 cases of Petalumas in during the week. There were taken into cold storage for the week ending June 7, 1917, only 643 cases, against 1,598 cases the same week last year. The excess of cold storage holdings June 7, 1917, was 16,989 cases, against 17,944 cases at the end of the week previous. Chicago declined 12½¢ on first and New York 2½¢ on first, resulting from better receipts and a falling off in the demand under the influence of high prices. The speculative trade seems less bullish inclined now than awhile back. Tuesday, with a marked dropping off in the receipts, the market on call was bid up ¼¢ and there was more trading than for some time.

Daily quotations:
1917— Wed. Thu. Fri. Sat. Mon. Tu.
Extra34 34 32 32 32 33
Case count34 34 31 31 31 32
Pullets32 32 30 30 30 30½
1916—
Case count25 25 24 24 24 24

VEGETABLES.

The market was better supplied the past week and the prices of many things showed a downward tendency and sales slow. Cabbage was in liberal supply and lower, but demand fair. Onions, string beans and peas coming in more freely and were slow sale and lower. Tomatoes were in very good demand and the best higher. Cucumbers coming in freely, slow and lower. Green corn was scarce and higher. Some lima beans were in from Imperial Valley and met with a fair demand. Summer squash in better supply and slow sale, but prices unchanged. New potatoes in good supply and weak.

We quote from growers:
New potatoes, per cwt.\$3.00@3.15
Peas, per lb.84¢@.84c
New onions, silver skins and Ber-
muda, per crate\$1.25@1.30
String beans, wax, per lb.44¢@45¢
do, Kentucky Wonders, per lb.44¢@5¢
Summer squash, per crate of four
baskets60¢@75¢
Imperial tomatoes, 4-bkt crate.\$1.65@1.75

Cucumbers, per box of 2½ to 3
dozen50¢@75¢
Green corn, lug\$1.00@1.25
Cabbage, per 100 lbs.60¢@75¢

BEANS.

If anything, the market was duller than ever the past week. As stocks are light, what few beans on hand are being held at old prices.

We quote from growers:
Lima18¢
Large white17¢
Small white16½¢
Pinks13¢
Blackeyes10½¢@11¢

HAY.

There was a little more doing in this market the past week. Receipts were not heavy, only 127 cars, and there was a better demand both from the country and local buyers. Demand not sufficiently strong to advance prices. Growers are finding trouble in getting help for baling.

We quote f. o. b. Los Angeles, old crop:
Barley hay, ton\$19.00@21.00
Out hay, ton20.00@22.00
Alfalfa, northern, per ton17.00@18.00
Alfalfa, local, ton19.00@20.00
Straw, ton11.00@12.00

FRUITS.

Market better supplied the past week both with peaches and apricots of better quality. Both sold fairly well and brought a little more money. Cherries in only moderate supply; good demand and higher. But few loquats in; season about over; hence we drop them from the list. Figs scarce and what few in brought more money.

We quote from growers:
Avocados, per doz.\$4.00@5.00
Cherries, black Tartarians, per lb.12¢@15¢
Royal Ann12¢@14¢
Soft White, per lb.12¢@14¢
Gooseberries, per lb.7¢@8¢
Apricots, per 4-basket crate, as to
pack\$1.50@1.60
Figs, Imperial Valley, 7-lb. box.\$1.75@2.00
Peaches, lug\$1.60@1.75

BERRIES.

Strawberries in only moderate supply the past week and are again higher and good demand. Raspberries continue to come in freely, are cheap and only fair demand. Loganberries slow sale and weak. Blackberries coming in more freely and lower, but fair demand at decline.

We quote from growers:
Strawberries—
Poor to choice, 30-basket
crate\$1.25@1.40
Fancy, 30-basket crate1.75@2.00
Blackberries, 30-basket crate1.10@1.20
Raspberries, 30-basket crate1.10@1.20
Loganberries, per case1.00@1.10

MELONS.

Cantaloupes coming in more freely and under increased offerings market is lower, but demand fair. Some watermelons were in during the week from Imperial Valley, but met with slow sale.

We quote from growers:
Cantaloupes, Imperial Valley, stand-
ard crates\$3.75@4.00
do, Pony crates3.00@3.25
Watermelons, per 100 lbs.3.75@4.00

POULTRY.

A steady, fair market was had the past week for most offerings. Receipts, while local, were fair, though mostly made up of young stuff. No Eastern poultry coming in. Broilers, fryers and heavy hens all in fair demand and so were ducks. Light hens slow, turkeys dull. But few turkeys coming in and what arriving thin.

We quote from growers:
Broilers, 1½ to 2 lbs.23¢@24¢
Fryers, 2½ to 3 lbs.24¢
Hens over 4 lbs.20¢@21¢
Hens under 4 lbs.14¢@15¢
Ducks17¢@18¢
Geese15¢
Roosters, 3 lbs. up (soft bones)25¢
Turkeys, heavy, 12 lbs. and up20¢@30¢
Turkeys, light24¢@25¢
Squabs, live, per doz.\$1.50@3.00
Dressed3.75@4.85

HONEY AND BEESWAX.

Better weather has favored honey making the past week and the late honey yield promises better. Orange honey lowered ½¢ during week, sage and alfalfa held steady. Beeswax steady. Demand fair.

We quote from growers:
White orange, extracted, per lb.13½¢
White sage, extracted, per lb.12¢
Light amber sage, extracted, per lb.9¢
Light amber alfalfa, extracted, lb.8½¢
Beeswax, per lb.32½¢

WEEKLY BUTTER AVERAGES.

		Cents per pound for Extras.			
		San Francisco		Los Angeles	
Week Ending		1916	1917	1916	1917
Jan.	9	26.65	34.91	28.16	36.90
"	16	27.83	35.83	28.10	37.00
"	23	28.85	36.91	28.50	35.00
"	30	28.33	38.48	36.66	38.87
Feb.	6	30.25	40.00	32.33	41.19
"	13	31.40	39.70	33.25	39.00
"	20	32.00	36.00	32.00	37.00
"	27	30.90	37.00	35.25	36.00
March	6	24.08	35.50	24.16	34.50
"	13	29.91	33.50	28.83	33.00
"	20	28.33	33.25	27.16	33.00
"	27	28.50	36.00	28.08	33.00
April	3	28.50	37.91	28.83	30.33
"	10	29.31	39.33	28.00	37.00
"	17	27.33	39.58	27.50	38.00
"	24	25.25	35.66	25.00	36.50
May	1	24.33	33.08	25.33	33.00
"	8	24.10	34.05	25.00	33.20
"	15	24.58	35.50	25.66	34.16
"	22	25.00	36.30	25.00	35.16
"	29	26.50	36.60	26.50	37.33
June	5	25.50	36.30	27.00	37.66
"	12	25.83	36.50	27.00	38.00

WEEKLY EGG AVERAGES.

		Cents per dozen for Extras.			
		San Francisco		Los Angeles	
Week Ending		1916	1917	1916	1917
Jan.	9	31.41	37.91	32.00	38.16
"	16	30.33	41.83	30.75	40.83
"	23	34.83	32.50	34.33	33.12
"	30	36.33	32.08	36.06	33.01
Feb.	6	35.66	34.99	35.50	34.70
"	13	28.90	33.30	28.00	31.66
"	20	22.66	33.01	20.33	20.75
"	27	20.30	29.00	18.50	27.66
March	6	18.33	24.75	18.91	26.08
"	13	19.50	25.46	19.06	25.01
"	20	20.00	25.66	20.83	28.00
"	27	21.41	27.16	21.00	20.25
April	3	21.75	28.58	21.00	30.41
"	10	22.00	29.46	21.00	32.08
"	17	21.16	32.33	20.91	32.08
"	24	21.83	32.91	22.58	32.83
May	1	21.00	32.00	22.58	31.83
"	8	21.20	32.75	21.41	32.00
"	15	24.58	34.20	20.83	32.50
"	22	25.46	33.40	22.50	34.00
"	29	25.00	33.80	22.50	33.50
June	5	25.00	33.20	24.61	34.66
"	12	25.00	31.16	24.16	33.00

Special Livestock Market Report

San Francisco, June 13, 1917.

CATTLE.

There has been considerable activity in the cattle market lately and stockgrowers have been able to maintain prices. It looks as though quotations would remain fairly uniform for some time to come, with any variation upward. Range calves are somewhat more plentiful, though the advice of the Government to hold stock back is influencing to some extent the policy of stockmen.

Grass Steers—

No. 1, weighing 900 to 1200 lbs.81¢@84¢
No. 1, weighing 1200 to 1400 lbs.81¢@83¢
Second quality8¢@84¢
Thin, undesirable6½¢@7½¢

Grass Cows and Heifers—

No. 163¢@7¢
Second quality64¢@64¢
Common to thin4¢@6¢
Undesirable4¢@6¢
Hay-fed Cattle. ½¢@¾¢ higher.....

Bulls and Stags—

Good6¢
Fair5½¢@5½¢
Thin4¢@5¢

Calves—

Lightweight94¢@94¢
Medium84½¢@84½¢
Heavy7¢@7¢

SHEEP.

The unprecedented prices offered for wool the country over have a strong bearing on sheep quotations, and if this continues prices are likely to go higher. The market supply of mutton about balances requirements. Only the lack of adequate feed supplies induces growers to let go their ewe lambs.

Lambs—

Yearling12¢@12½¢
Milk12¢@12½¢
Sheep, unshorn wethers.11¢
do. do. Ewes10¢
HOGS.—The supply of hogs is still below the market demands and likely to continue so until the summer feeders are finished in the fall. Prices tend upward. Hard, grain-fed, 100 to 15013¢
do. do. 150 to 30015¢@15½¢
do. do. 300 to 40014½¢@14½¢

DRESSED MEATS:

Steers, No. 113½¢
do. Second quality13¢
Cows and Heifers11¢@11½¢
Calves, as to size, etc.12¢@14¢
Lambs—Suckling19¢@20¢
do. Yearling18¢@19¢
Sheep—Wethers18¢
do. Ewes16¢@17¢

Hogs20¢
WOOL.—The wool market holds up with undiminished strength, all grades of fleece wools being in demand.

Los Angeles, June 12, 1917.

CATTLE.

There was a steadier tone to the market the past week. A break of 50¢ per cwt. the week before caused a dropping off in the offerings. But where feed was scarce and the cattle ready to come to market feeders were willing to accept quotations. Holders, however, supplied with feed were disposed to hold back and trust the future. Killers were all in the market, but were not urgent buyers.

Calves still dull and weak.

Per cwt. f. o. b. Los Angeles:
Beef steers, 1000 to 1100 lbs.\$8.50@9.00
Prime cows and heifers7.00@7.50
Good cows and heifers6.50@7.00
Calves, per cwt8.00@9.00

HOGS.

Good packing hogs made a further advance. Not many coming in and they altogether from California. The continued high markets east and north compelling killers to bid prices up in order to draw hogs this way. With hogs selling in Chicago \$14.55@15.85, we should not expect cheap hogs here. These are high prices; but with corn selling in the Central West at \$1.50@1.55 per bushel, and it taking a bushel of corn to make ten pounds of pork, it will be seen that hogs are no higher than the feed that it takes to make them. Killers, while all in the market, were only fair buyers.

Per cwt. f. o. b. Los Angeles:
Heavy, averaging 250@300 lbs.\$12.00@12.50
Mixed, 200@250 lbs.13.50@14.50
Light, 175@200 lbs.13.50@14.50
rough docked 20 pounds, piggy sows 40 pounds and stags 40 per cent.

SHEEP.

With a short lamb crop everywhere this spring and the high prices of wool, sheep men have been marketing their sheep and lambs slowly. Hence a steady, firm market. Killers were all in the market the past week, but with a light demand for mutton and lamb at the high price which it has to be sold, they are asking for no great number and killing is much lighter than this time last year.

Per cwt. f. o. b. Los Angeles:
Prime wethers9.00@10.00
Prime ewes9.50@10.00
Yearlings10.50@11.00
Lambs13.00@14.00

Publisher's Department.

In this issue we devote a large part of our space to sheep production in California. Each year we do this, because we believe sheep should have a larger place in agriculture of this State. As the range becomes more restricted and as the price of meat advances, the small farms must of necessity produce sheep. At the present price of mutton and wool, there can hardly be expected larger profits made in any other branch of production. Of course the present high prices will not continue indefinitely, but the small bands of sheep will pay well for several years to come. Get a few ewes and a good buck, raise some mangels and alfalfa, and with the feed the sheep can rustle on the place, they

will be kept economically and produce profitably.

New subscribers are coming in rapidly these days. During the past week we added 261 new paid names to our list. Every subscriber pays \$1 per year for the Rural Press.

Our book "Second Thousand Questions in California Agriculture Answered" is of particular value to fruit and grain growers, stock and poultry people, as well as dairymen and irrigation work. Send for a copy, \$1.50 postpaid.

The great possibilities in breeding purebred cattle are brought forcibly to mind by the dispersion sale held by Stevens Brothers Company at Liverpool, N. Y., May 15, 16 and 17. A total of 309 head of Holsteins brought \$242,665. The biggest price was paid for the great sire, King of the Pontiacs. He went to N. W. Salmon of Glenfield, N. Y., for \$10,500. The highest female was K. S. P. Diona, who went to the Fred F. Field Company for \$6,350.

Classified Advertisements

Rates in this directory, 3c per word each issue; or if carried weekly for one year, 2½¢ per word.

MISCELLANEOUS.

GROCERIES WHOLESALE.—Our prices are the Lowest and our quality the Highest. Dollars saved on every order. Freight paid within 100 miles. Send for catalog. Freese & Company, Mail Order Grocers, 1264 Devisadero st., San Francisco.

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AT LAST THE PERFECT SILO—THE Star Round; no hoops; no bolts; no experiments. Anyone can erect. Close price. Address D. O. Lively, 215 Hobart Bldg., San Francisco.

PATENTS THAT PROTECT are procured through Pacific Coast Patent Agency. Savings and Loan Building, Stockton, California. Established fifty years.

TO REDUCE THE HIGH COST OF LIVING, send for our Wholesale to Consumer Catalog. Smiths' Cash Store, 106 Clay st., San Francisco.

WANTED TO BUY—CANARIES—1 Coolidge Place, off Jackson, San Francisco.

SEEDS, PLANTS AND TREES.

SWEET POTATO PLANTS—Full count, carefully packed; 75¢ per 100 postpaid. Mail your check. Large quantities cheaper. C. J. Frank, Ontario, Cal.

WANTED.

WANTED—Young men and women to attend the Western Normal Course—Normal and Academic. The Normal Course gives an adequate preparation for teaching, at a great saving in time and money. Academic course gives practical finish to education. Write for Bulletin "A," Western Normal, 524 E. Market st., Stockton, Cal.

WANTED—Young married couple for ten-acre ranch, fully equipped, on shares, or will sell stock and rent; horses, cow and 1,600 hens. Box 610, Pacific Rural Press.

WANTED, A GARDENER—A man with good experience and character to work on shares. W. R. Tiekles, Elk Grove, Cal.

COUNTRY LANDS.

FARM PROPERTY—5½ acres in alfalfa, ¼ acre in fruit trees, grape vines and berries. New 8-room house with bath—\$1,000. **TEN ACRES**—Eight acres in seedless Thompsons, all upon poles, 5 years old, bearing. Adjacent Santa Fe depot. \$7,000—part cash. **A COZY HOME**—½ acre garden tract. House 5 rooms, mill and trees—\$1,500. Cheap for the place. Address C. W. Kahl, Le Grand, Cal. **LE GRAND** is a coming town. A branch railroad into Mariposa county. Irrigation ditch is on foot. High School and Grammar School. Two Protestant churches.

FOR SALE—640 acres of half section good wheat land, 26 miles east of Calgary, in irrigation block; raised 45 bushels wheat per acre last year; about 250 acres in crop; 350 acres will summer fallow; 25 acres in alfalfa; modern and complete improvements; \$5,000 cash, balance arranged; price per acre, \$60. Box 17, Cheadle, Alberta, Canada.

FOR SALE—One of the best improved 20-acre ranches on the Los Molinos project; buildings all new; price, \$10,000; cash \$4,000, balance on time and terms to suit purchaser. Geo. Book, Los Molinos, Cal.

DEEP LOAMY RIVER BOTTOM—25 acres alfalfa, 30 wooded pasture; irrigated; big barn; thirty good cows; Vina Ranch bulls used five years. Manuel Viter, Los Molinos.

STEVENS COUNTY—Lowest off land where stock-raising and dairying pay. Free booklet. Phoenix Lumber Co., Crop Department, Spokane, Washington.

STATE, GOVERNMENT AND INDIAN Lands—Bargains overlooked. Free New Blue Booklet. Joseph Clark, Sacramento.

WANTED to hear from owner of good ranch for sale. State cash price and description. D. F. Bush, Minneapolis, Minn.

ALMOND GROWERS PROTEST HIGH FREIGHT RATES.

Setting forth the claim that foreign almonds are grown on cheap lands with cheap labor, as contrasted with similar conditions in this State, and that the tariff tax does not offset the high freight rates from California to Eastern points, T. C. Tucker, manager of the California Almond Growers' Exchange, protested recently before Examiner George Wood of the Interstate Commerce Commission against the east-bound freight rate of \$1.40 on shipments of nuts to Kansas City. California is said to produce about \$1,000,000 worth of these nuts annually, the yearly imports from France and Italy amount to about \$4,000,000, and our almond growers are asking for a square deal so far as transportation charges are concerned.

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1,000 Acres planted in Alfalfa. For sale in tracts of 10 acres and up.
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THE Summer months are coming when tubes are subjected to their greatest strain. Replace any tubes which will not stand up under that strain. Forestall inconvenience.

Don't chance ruining perfectly good casings with worn-out tubes. See to it NOW that your tube equipment is right and ready to meet all the conditions of Summer driving—have complete Fisk equipment.

Fisk Tubes have been of laminated construction ever since they were first built—that is, built up layer upon layer of pure rubber.

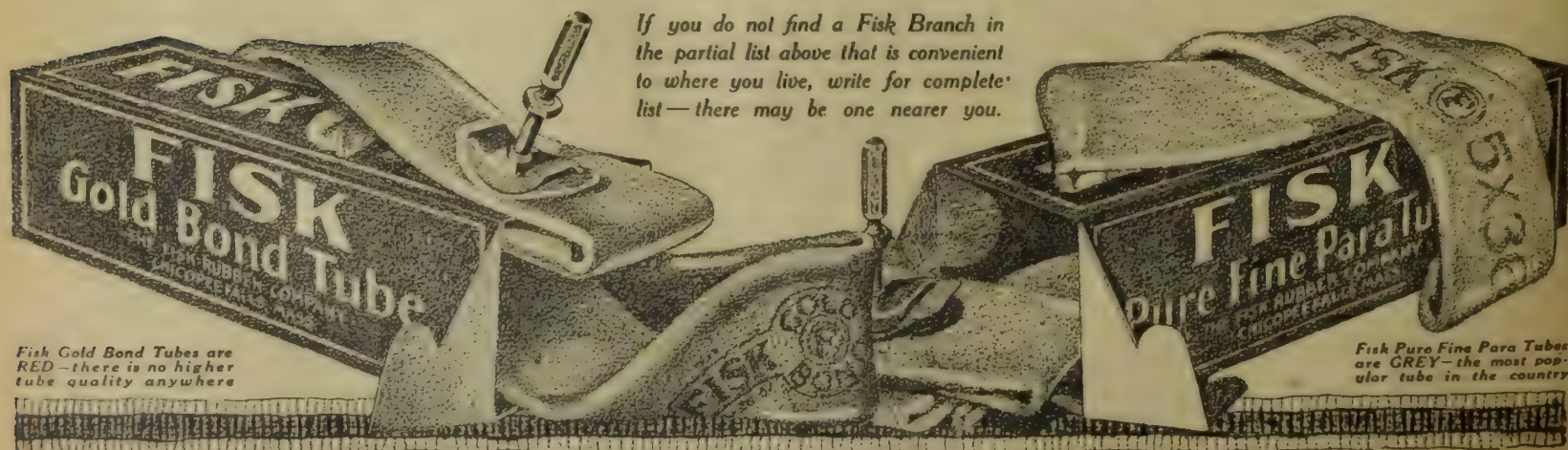
New Fisk Tubes bought NOW will give you better tire satisfaction and lower up-keep costs for the balance of the season.



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Fisk Gold Bond Tubes are RED—there is no higher tube quality anywhere

Fisk Pure Fine Para Tubes are GREY—the most popular tube in the country

If you do not find a Fisk Branch in the partial list above that is convenient to where you live, write for complete list—there may be one nearer you.

THE PACIFIC RURAL PRESS

SAN FRANCISCO

JUNE 23, 1917

LOS ANGELES

Equipment and Methods in Peach Drying

[Written for Pacific Rural Press.]



OW THAT every dried-peach grower can get a better price for better peaches, it pays to exercise care in handling, and to have labor-saving, fruit-saving equipment. It is none too soon to get the equipment ready and to engage help from the schools if the usual help be not available. With sulphur and fruit high priced, perhaps the first thing to look after is the sulphur house. Make it air-tight, preferably of concrete if possible, as mentioned in our paper recently, and then provide a little controllable ventilation so that the sulphur will burn. Then come the trays. If apricots are to be dried on the same trays, it may pay to have larger ones. We present the advice of Mrs. F. G. Weeks and her son, F. H. Weeks, who have forty acres of drying peaches in Tehama county, and who have studied the situation well in their part of the State. If more than one man can be used in the shed, provide 3x6 trays. They are heavy enough when filled with peaches and stacked twenty high. Make the trays 1 1/2 inches deep, using pieces 3/4 x 1 1/2 for sides and ends, with sides 6 feet long and end pieces 34 1/4 inches long.

The bottoms are 5 3/4 x 7 1/8 inches, 3 feet long, and the clincher strips are 3/4 x 1 1/2 inches. The Weeks' have used 1,000 such as these for three seasons with very little breakage. Use pine, not redwood. If the bottoms are made of too light wood, the trays twist when picked up full of peaches and spill the juice. Don't use one-man trays if you can use two men, for two-men trays hold three times as much as the others and are more convenient to handle. One man cannot lift a small tray so high, either. If trays are over 7 feet long, and of the same material, they are likely to sag in the middle when picked up loaded. Use 60-pound lug boxes to avoid wasted time traveling with light loads.

PROVIDE TIGHT STORAGE.

A special storage room may save its cost in a crop or two by keeping fruit from drying out too much and by keeping out insects. The model kind has concrete floor and walls, and enough bins 8 feet square to hold much of the crop. Many people throw their peaches into a corner as they come from the dry yard. This always leaves a thin edge on the pile of peaches which in the aggregate loses many pounds of weight. The thin edge is repeated in taking them out later. The bins will avoid this.

In taking peaches off the trays, keep the fat ones separate or they may mold. Grade the peaches roughly and keep slabs, etc., in different bins.

To tell when they are cured enough not to mold in bins, but not so dry as to lose weight for the grower, crush some of them in the hand. They are all right if they spring back to shape, but are too wet if they remain in a packed ball. A further test is to rub the skin with gentle pressure. If it does not loosen, the peach is dry enough.

Pick the peaches. Let them get fairly ripe, or they will be white and tasteless and light weight. To tell when they are ripe enough, one test is to break a peach in two. If the broken side is sharply jagged like broken iron, it is too green. If the points are rounder, it is ripe enough. If the peach mashes in the hand, it will make a dark slab.

Don't let the fruit get ahead of you so there are a lot of windfalls. But pick up those that drop every day, for an ordinary bruise does not show up unless it has time to penetrate through the peach.

Whole Dried Apricots Reduce Labor

[Written for Pacific Rural Press.]

Labor was short. Weather was warm. Apricots were ripening faster than they could be handled. Everybody was drying as fast as they could pick and cut the fruit. C. O. Silliman had the largest apricot orchard in

Pajaro Valley. Overripe apricots would make either slabs or slop. There was one thing to do.

The full-ripe apricots which dropped to the ground were put onto trays direct from the wagons without cutting. They were sulphured and dried whole. That was to save the firmer fruit which was picked from the trees and cut. A whole carload of whole dried apricots were produced that season. Fruit that would have been all slabs was perfect, dried whole.

PREFERS PEACHES DRIED WHOLE.

Since then Mr. Silliman has used whole dried apricots in his family, preferring them to the others, even if he



Extra Care in Handling, Drying and Storing Peaches Will Pay the Grower, Now that a Good Market by Grades Is Assured.

had to pay the same price per pound, including the pits. He gave the writer some, which were eaten with pleasure by our entire office force. We had to steal some of them away to test their cooking quality. There is a sort of pit (hydrocyanic acid) flavor to them which is decidedly agreeable. Being the ripest fruit, it was also the softest and sweetest. Only by soaking the fruit over night in cold water and handling it very gently, cooking over a slow fire, were we able to avoid mashing them. They were not so tart as ordinary dried apricots, and required practically no sugar, though the little sugar that is used should be cooked into them. The box we received had been packed over two years before, and the fruit was in perfect condition. Mr. Silliman sees no more reason for taking pits out of apricots than from prunes, especially the small sizes, which have been dried more or less without cutting in other parts of the State. There seems to him no reason for the waste of time, labor and fruit involved in cutting ripened apricots. It cost 10 cents per box last season. Besides, for ten

(Continued on page 748.)

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EDITORIALS

WHAT FARMING WILL DO FOR WAR.

EASTERN reports of amplitude of coming crops indicate that this country will be able to justify expectations placed upon it as a source of food for our European allies in the world's great struggle for liberty and humanity. Some of the pessimistic forecasts, based upon small visible supplies and unfavorable outlook last winter, have been shown to have been hysterical. The present outlook is for large production, but of course the demand promises to be very large and the danger of speculation unusually great unless regulated by Government action for stabilization of prices. As we write on Tuesday, the telegraph brings an outline of a statement made today, before the Senate at Washington, by Herbert C. Hoover, in which he says:

Provisions for the Government to buy and sell commodities will be necessary for use only as to a very few prime commodities. The aim is to stabilize prices and thus eliminate speculation. The balance wheel for stabilizing prices is gone. We need an artificial balance wheel. By setting up a wheat commission we can buy wheat, regulate its storage and transportation and handle it until exported or sold in this country. If we do not do this, wheat prices may relapse on account of our not being able to store and carry it, with speculators securing the sole benefit and farmers bearing the loss. We can contract with the allies for a certain return for every bushel of wheat we can sell. By controlling prices at interior terminals we can assure millers their supplies and simplify transportation.

Nothing is said about shortage in production but much of the danger of speculation reducing the producers' reward and placing under tribute consumers at home and in countries allied with us abroad. And those who hope to gain from such speculation are active in defending their chance. According to current reports, they have dug their trenches in the United States Senate and it is expected that the effort to dislodge them will be difficult. It seems clear that American farmers will generously discharge their duty toward winning the war, but there remains the chance that their merciful munitions may be selfishly dynamited before they can get into world-saving action.

* * *

WHAT THE WAR MAY DO FOR FARMING.

IT IS generally conceded that the current war, curse as it is upon the human race, will brighten the outlook for humanity in many ways. That is the reason this country proposes to win the war at whatever cost. One of the compensations may be the clearing away of selfish interference and making more direct and fair the relations between the food producing industry and those to whom it is ordained to minister. President Wilson himself says of the power he asks of Congress:

"The object of the measure is not to control the food of the country, but to release it from the control of speculators and other persons who will seek to make inordinate profits out of it and to protect the people against the extortions which would result. Those who oppose the measure ought very seriously to consider whether they are

not playing into the hands of such persons, and whether they are not making themselves responsible, should they succeed, for extraordinary and oppressive prices of food in the United States. Foodstuffs will, of course, inevitably be high, but it is possible, by perfectly legitimate means, to keep them from being unreasonably and oppressively high."

This is the issue which bids fair to occupy the upper house at Washington all this week or longer. Whatever may be the full result of the political and commercial conflict which will be waged, it cannot be doubted that some things will be done which will draw sharp lines between fair trading and gambling in farmers' crops. This has been sought by farmers generally for years. They have been making slow progress toward the reduction of the evil by organized effort. The war is sharply bringing to the public mind the justice of their contention and it must be recognized and enforced in some measure.

* * *

OUR READERS CALL FOR ORGANIZATION.

JUDGING by the drift of their communications, there is a strong, prevailing conviction among our readers that the only way to right agricultural wrongs, and to secure for the producer what properly belongs to him, is through organization. There is nothing new in such a conviction. It prevailed at the birth of this journal, forty-six years ago, and was not new even at that remote date. It has probably existed ever since food producers felt the first pressure of the overlords of trade or tyranny, and, for aught we know, the first manifestation of it may have been when the high chiefs and food-contractors began to "mobilize and speed up the farmers" to feed the army of mud and brick men at the building of the tower of Babel. It was probably at that remote date also that traders and politicians conceived their counter-conviction that they could best get the service they required from farmers by tying their legs and arms together and keeping their heads apart. And this has surely been the prevailing policy, for while all the classes to be profited by farm production have laid their own heads together, the farmers' heads have been kept wagging in all diverse directions from time immemorial. And they are doing the same to this very day, in spite of all the strenuous, and temporarily promising, efforts which have been made to get them to see and shout together for their own mutual interests and economic rights. Undoubtedly the most important question for the advancement of agriculture has always been how can the farmers be induced to get their heads together, and this is still the great question, and we cannot answer it. During the last forty years we have had three farmers' associations of national name and scope installed in this State. The oldest achieved great social service for farmers but forbade political action, and finally abandoned business effort because all its general institutions in that line were failures. The next was practically all politics and business effort and the two disagreed and wrecked the outfit. The youngest exalted education, science and co-operative business enterprise and is still creditable in these lines—but chiefly in a limited local way. None of these general efforts at State-wide organization has achieved its purpose, though all have ministered to the prosperity and higher life of their membership. None have arrived, not because their aims and purposes were not good but because no effort they could make enabled them to get enough farmers' heads wagging their ways.

* * *

CAN A DICTATOR STOP WAGGING?

WE THINK NOT. The heads have wagged too long and the owners of the heads enjoy the oblique wagging too much to slow down to a straight bowing which gives consent. Besides, the farmers' heads have been so abundantly batted in the eyes and pulled at the nose by all kinds of dictation, social, political and economic, that they involuntarily strike and dodge in all directions and have come to glory in what seems to be real independence in wagging. It seems to us that this country's half century's experience in failure to secure national membership and geographical breadth of influence for a gen-

eral agricultural association amply demonstrates that effective organization on the basis of direct action of a national membership is, under present conditions at least, impossible. And not only is it impossible to secure such national influence by this democratic method for the whole country, it seems also impossible for such a method to dominate the diverse agricultural interests of a single State. We believe no single organization includes in its membership a majority of the farmers of a single State, although a working majority has, we believe, been secured by affiliation of different organizations of similar purposes in some States at some times. What we are saying is intended as a background for such a picture as this, which one of our readers furnishes:

I hope that Harris Weinstock will have something to say as to whether it is advisable at the present time to attempt to organize all the farmers of the whole State into one organization—cutting out the parasitic jobbers entirely. The common impression is that such organizations as those of the raisin and citrus growers are a howling success. I don't know just how the raisin men stand, but I know that in spite of the immense work done by the citrus management they only claim to control about 60 per cent of the product, etc.

Of course, we could ask Col. Weinstock to hold forth on this subject, but we are pounding our own pulpit just now and like it too well to stop. To our mind, propositions like the above, to mobilize all the farmers into an association to displace middlemen, are impracticable for two reasons: because the farmers will not take hold and because the jobbers will not let go. There will not be any real fight on that front for the very old reason: "One's a'feared: t'other dassent." Whoever has a mind to wait and see a great democratic uprising of farmers in their own behalf had better carry his lunch with him. So far as this discussion goes, therefore, we may say that Col. Weinstock will not "attempt to organize all the farmers in the State into one organization" because such a thing has been demonstrated to be impossible.

* * *

WHY SPECIAL ASSOCIATIONS ARE THE ONLY HOPE.

IT IS our notion that the only hope of efficient organization lies in the possession of full economic information and the business sense to use it efficiently. The understanding of agriculture as a whole or in a very broad way is an academic qualification. It is the stock in trade of an instructor or a bureaucrat. It does not qualify its possessor to grow and sell cabbage. As it is with men so it is with associations, which are only multiples of men. An association of all the farmers could no more efficiently grow and sell cabbage than an association of all manufacturers could run a shoe factory nor an association of all merchants sell shoes. To possess full economic information and the business sense to use it efficiently requires an association of cabbage men in one case and an association of shoe men in the other. But there are, of course, some things affecting the cabbage industry which affect all other crops and some things about shoes which relate to all other merchandise. What these things are and how to use them to the advantage of all crop growers in the one case and of all manufacturers or merchants in the other can be learned and applied by a general association which can compare and correlate the insight and experience of many special associations, each of which is wise and masterful in its own line. And now, dropping all analogies, it seems to us clear that the only way to get an effective general association of farmers is not to try to assemble them by tens of thousands, as those which have hitherto failed to arrive have already done—but to work incessantly for strong associations of special producers who can possess themselves of the economic wisdom and business sense which they severally need in the handling of their special products, and then affiliate them, through their chosen representatives, in a general association which can work for general attitudes, policies and points of view which the whole industry, of which they are parts, demands for its success, prosperity and relative rights among the producing and commercial activities of mankind. As our correspondent,

quoted above, acknowledges, we have in California special associations of raisin growers, citrus growers (and very many others) which have not yet covered all of the products which are their specialties, and yet they have covered enough to save these specialties from financial ruin and have given to each of them a bright and dependable future. It is our conviction that these associations, working in their specialties, even with such percentages as they control, have done much more for the success of California agriculture than a general farmers' association ever could have done, even though it had every farmer in the

State on its membership roll. Each one of them has mastered its problems by full economic information and business sense, which no such general association could ever have secured by any system of subdivision, committee work or distributed directorate, humanly known and applied. It is the old story of specialization vs. generalization. Each has tackled its job with community of interest, special knowledge, wisely directed experiment, and the like, and has done its job. Competent generalization can now come by affiliation of special successes and then you may watch for the fireworks of fair play with farm crops.

By
the Editor

QUERIES AND REPLIES

Inquirer Must
Give Full Name
and Address

Postal Savings and Farm Loans.

To the Editor: If the government receives deposits from the people in the Postal Savings banks and pays the depositor 2 per cent interest and then loans it to the bankers at 2½ per cent interest, why can it not be loaned to the rancher at 2½ per cent interest? Federal authorities have acknowledged that one-half of one per cent is ample to defray the expense of the negotiation for loans to the Farm Loan associations. Does it not appear that the government favors the banker and not the farmer when it charges the farmer 5 per cent interest and the banker only 2½ per cent? And yet it is the farmer who makes it possible for the government and banker to exist at all. It would seem that bankers would do anything in the world for the farmer except get off their backs.—Subscriber, Lone Pine.

In the first place, there will probably never be enough in the postal savings banks to meet the demand for farm loans. In April last there was reported to be 115 millions in these banks. The applications for farm loans aggregated far more than that amount, and the prospect is that in future the postal savings will be in constantly diminishing ratio to the amount demanded for farm loans. We do not know how much there is now in postal savings banks, but it is probably only a fraction of the amount of April last. The depositors like the security of the government even at 2 per cent; have they not preferred the same security at 3½ per cent, as it was offered to them in the liberty loan? We presume so. Another reason why they liked 2 per cent on their savings was because they could get the money at any time to spend or to re-invest, and the reason why the government could only get 2½ per cent from the bankers was because the government could call in the money whenever the depositor demanded it. Money loaned on long-term farm mortgage bonds cannot be recovered on demand, and, though Uncle Sam carries a fairly large coin sack, it might bother him some to loan money on long terms and agree to pay back savings bank depositors on call! The fact is, Uncle Sam has to have other people's money for long-term loans for farming purposes just as he has to fight the Germans, and in arranging for farm loans he has to offer more interest than he needs to pay for what are more clearly recognized as patriotic purposes. Whether they are really more patriotic may be disputed, but the fact that most people think they are, settles that question. It seems that the least interest which will bring other people's money for farm loans is 4½ per cent.

As for slamming the bankers, we do not mind doing that ourselves when we think they need it, but it is only fair to remember that bankers as a rule do not handle their own money. They are handling other people's money, and they have as much trouble satisfying the demands of their customers as other business people do, and when they fail to do this their customers sell the use of their money in some other way or blow it into wild cats. It is the owners of the money who say what shall be done with it, not the banker who handles it, even though he does, as a rule, charge too much for handling it. In spite of this, however, the banker does not arbitrarily fix the interest rate. He is always operating between two forces—the owners of the money and the borrowers of it—and it is his business to buy the use of the money as low and sell the use of it as high as he can. In the essence of it, it is as unreasonable to place the weight of the blame on bankers as such, for a gen-

eral financial condition, as it is to swear at the station agent for an extortionate freight rate.

Slitting Bark of Fruit Trees.

To the Editor: I am thinking of slitting my young sugar prune trees from the graft up to where the shoots come out. I have been told it will prevent sour sap and help their growth. I have slit a few and they have opened up a quarter of an inch. Do you think it would be a benefit to them?—M. D. C., San Martin.

It is about as rational as to slit a cow's tail to cure "hollow horn" and belongs to the same period of agricultural darkness. We are willing to concede that there may be cases of old, neglected or unthrifty trees, the outer bark of which sometimes becomes very hard and tightly drawn, where a shallow slitting (just through the outer bark) may enable the tree to respond to better growing conditions which may be furnished to it. We have never been quite sure of this, but are willing to grant it. But this is reasonable as compared with slitting the bark of a young tree for which we can see no reason nor excuse. As for sour sap, it is due to too little sap in circulation, from one of several causes, and slitting would tend to aggravate rather than cure the trouble. Of course a healthy tree will heal over a wound, but that is no evidence that it is better for being wounded.

Berries For a Dust Screen.

To the Editor: I have grapes and almonds interplanted, the outer row of trees about six feet from a fence. I am thinking it would be advisable to plant near the fence between the almond trees, which are twenty feet apart, two or three blackberry or loganberry bushes. Would these spread out so that it would prevent my cultivating properly between the trees and the fence? And would it be necessary to put water on the berries several times through the season? My object in planting the berries would be to keep the dust coming from the road upon the grapes. Last year there were three rows of grapes along that strip that could not be used because too thickly covered with dust.—J. C. A., Stockton.

If you plant a non-suckering berry like the Loganberry, you can train it flat against the fence and not reach out much below ground. It will be easy enough to prune back the top growth as you desire. To act as a dust screen you need plenty of large leaves, and it will require water to get them. The Himalaya berry is worth consideration for your purpose, because it is such a free grower and the old wood keeps active in fruit and foliage—not requiring removal of old wood as the Loganberry does.

Summer Pruning Bartlett's?

To the Editor: Kindly advise regarding the summer pruning of Bartlett pears.—V. P., Owensmouth.

On young Bartlett pears which are now growing vigorously and will have plenty of moisture to continue growth late in the summer, pinching of tips of new growth can now be done to induce lower growth of laterals and check the disposition of the variety to sky-scraping. Under ordinary conditions, however, such treatment is not applied, but the young tree is usually allowed to make all the growth it will, to be shortened at the winter pruning. Summer pruning of bearing trees consists of cutting out blight continually, as it manifests itself. Theoretically, summer pruning of bearing

trees is available as a method of hastening or increasing fruiting, but we are not aware that anyone is doing that regularly in commercial orcharding, nor that it has been demonstrated to be desirable.

Summer Care of Sour-Sapped Trees.

To the Editor: I planned to plant a few squashes in my young peach orchard in which some trees are going back from sour sap. I planned to irrigate the squashes a little. But now I am afraid that irrigating the squashes may increase the sour sap injury and prevent the trees from recovering. Is that the case?—A. E., Stockton.

It is not. Too much water in winter is not cured by too little in summer, and injury to top growth by frost in spring is not compensated for by hardship to the roots afterwards. The only chance the trees have to recover from winter and spring injury lies in your producing the best conditions you can for summer and fall growth. The squash cover will cool the ground and reasonable irrigation given them will help the trees.

Non-Bearing Grape Vine.

To the Editor: I am sending the blossoms of my grape vine, which is five years old and has acted this way every year. I have put sulphur on it and have sprayed it for the last two years. Will you kindly advise me what to do for it?—F. C. B., Angels Camp.

Your vine has only staminate flowers. For lack of pistils in its imperfect flowers, it can never bear fruit. It is rather unusual to encounter such a vine, but it can hardly be counted rare, for some wild vines have that habit and seedlings may have. Your vine is therefore grown from a cutting of such a vine or a seedling which shows that variation. You can do nothing to change its habit, but you may graft a fruit bearing vine upon it.

A Question in Fruit Thinning.

To the Editor: When apple and pear trees are fruiting heavily on one side, with nothing on the other, and spurs carrying three to five fruits, would it be good practice to thin out these spurs, or would it be better to allow them to remain to the extent of the tree's capacity to make good size fruit, according to one's best judgment?—E. G., Berkeley.

If you are quite sure that the fruit a tree carries will reach good merchantable size without reducing number of fruits, thinning should not be done; but if you are not quite sure, reduce the clusters, but leave a few trees unthinned as a check on your judgment.

What Are Small Potatoes Worth?

To the Editor: Please to tell me what small potatoes are worth to cook for pigs when feed-stuff sells at the following prices: Bran per pound, 2½ cents; rolled barley, 2¼ cents; cocoanut, 2 cents; milk, skimmed, 5 cents a gallon.—H. P., Santa Cruz.

If well matured and sound, they may be, roughly speaking, worth half a cent a pound—less the cost of cooking.

Cutting Back a Cherokee Rose.

To the Editor: I have a Cherokee rose which I wish to cut back so as to train somewhat differently. When shall I cut it or will it make no difference as to what time of the year it is done?—L. D. H., Lakeside.

You can cut back considerably at any time without injury. Very severe cutting should be done after the leaves fall.

Fig Leaves Falling.

To the Editor: Can you tell what causes the fig leaves to fall off at this time of year? The trees are large and in rich bottom land of Russian river.—E. J. N., Cloverdale.

We know of nothing which would cause such a spring drop of leaves but frost. Have you had any? How do vines at the same level behave?

California Weather Record

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau at San Francisco for the week ending at 5 p. m., June 19, 1917:

Stations—	Rainfall Data.		Temperature	
	Past Week.	Seasonal To Date.	Normal To Date.	Data. Max. Min. m.
Eureka	31.36	45.84	60	44
Red Bluff	19.26	24.95	106	60
Sacramento	12.95	20.09	106	54
San Francisco	15.78	22.27	87	46
San Jose	12.03	16.79	94	46
Fresno	7.25	9.63	103	60
Fresno Obispo	23.03	20.51	116	46
Los Angeles	15.26	16.44	106	54
San Diego	10.13	10.01	84	56

Gumming of Plums in the Foothills.

To the Editor: Two years ago last fall I started painting the larger wounds and pruning cuts on my young Hungarian plum trees—doing five or six rows on one side of the orchard, and after some delay working from the other side toward the center—but I did not complete the job that year. The neglect of these trees in the center has been apparent ever since. I lost more trees and limbs there from gummosis than elsewhere, although some of the treated trees were on ground with much poorer drainage, which lowered the condition of the trees.

I have since cut out all the diseased bark I could find, disclosed by a bit of gum, and treated the wounds with Bordeaux paste during March and April—the earliest being best. This treatment is in line with recommendations by Prof. Fawcett for treatment of trees afflicted with fungous diseases. I have also sprayed in November with lime-sulphur and painted the wounds, using asphaltum dissolved with linseed oil and distillate.

The condition of the trees as to

gumming this spring is a considerable improvement over last year, which I credit to the accumulated preventives.

I propose this fall to spray with Bordeaux mixture and follow that up with a crude oil emulsion to hold the fungicide, and waterproof small abrasions in the bark, also a further painting of the wounds with asphaltum paint. If this plan is not correct theoretically, I would like to know it.—Walter Egbert, Colfax.

[You are surely "exercising due diligence." The only question we see about your procedure is whether it is necessary to assume the cost in labor and materials of the multiplied treatments. In using the crude oil emulsion you must, of course, be sure you get a real emulsion and continue agitation to avoid collection of free oil. Theoretically, we should expect the oil to hold the bluestone so fast that it could not dissolve out for action.—Editor.]

Suggestions on Pruning Thompsons.

To the Editor: I have five acres of two-year-old Thompson seedless vines. They made an extra strong growth from the first, so this winter I left one or two (not more than two) canes on the strongest of the vines, from two to four feet long. I have them on a wire about two and a half feet from the ground. They are starting a vigorous growth and putting on a very heavy crop of blossom buds. I can count from ten to as high as forty bunches of buds per vine. Is such a crop apt to be too much strain on such young vines? Or will they be all right if I go over and pull off all non-fruiting shoots and pinch the others? Or should I pull off the weaker of the fruiting canes?—G. R. A., Modesto.

[Answer by Prof. F. T. Biolett.]

It would have been better if G. R. A. had left only one instead of two canes. He would have got just as much crop and of better quality. However, if the vines are particu-

larly vigorous no harm is done. He can cut off one of these canes next year and leave the other cane to make the permanent vine. It would be a mistake to remove one of the canes now, while they are growing vigorously. It would also be a mistake to remove any of the shoots, except those near the ground. He should let all the shoots grow whether they have fruit on or not. The growth of these shoots will strengthen the root system of the vine and provide abundance of fruit wood for next year. If the shoots grow very vigorously he might tip them—that is, pinch off a couple of inches from the end of each shoot when the shoots are two or three feet long. This will protect them from the wind and force them to produce laterals which would be good fruit wood for next year.

Whole Dried Apricots Reduce Labor.

(Continued from first page.)

days in the rush of the season, Mr. Silliman needs 50 extra hands which he ordinarily cannot get; and surely will find unavailable this year if he dries the crop rather than selling to the cannery.

MARKET PROSPECTS GOOD.

Before organization of the prune and apricot growers, Mr. Silliman could not advise drying whole; because packers would not undertake to market them. Some refused to take them at all or even to include a few boxes in their carloads for their eastern representatives to distribute among their customers to get their opinions. Finally, one packer's representative sent some to San Fran-

cisco where Mr. Silliman happened to be in the office when an Eastern distributor came in. The Eastern man took eight or ten tons on the spot and called for more last year. If they could be sold for two-thirds or three-fourths of the price of halved apricots, it is thought there would be more food value per dollar and more money net to the grower.

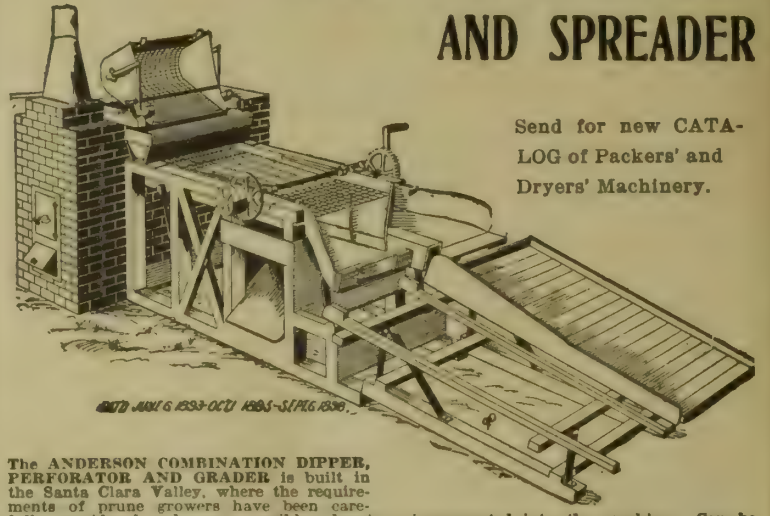
Apricots are successfully dried whole, up to 2½ inches in diameter. Mr. Silliman sulphurs only to sterilize which is imperative; but not to bleach the fruit. It takes twice as long to sulphur, but a tray holds twice as many. It takes twice as long to dry the fruit, but the yard holds twice as many. To test whether sulphur has penetrated deep enough, cut through the fruit. The larger and greener the apricot the slower sulphur fumes penetrate. One apricot too green for the canner was dried successfully.

In a half-apricot, sulphur penetrates only one-third to one-half as far from the skin side as from the pit side. If taken out when it lacks one-fourth of the thickness of the flesh of getting clear through, it will finish penetrating after six or eight hours in the sun. In sulphuring

whole apricots the sulphur should be half through the flesh before laying fruit in the dry yard. Mr. Sill-

man has tried drying without sulphur, but the dried fruit ferments and sours.

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Here and There in the Fruit Business

[Written for Pacific Rural Press.]

Orange Fertilizer Should Be Balanced.

"One of the scrubbiest orange orchards in the colony," is the way F. R. Irwin describes the condition of his twenty-year orchard fifteen years ago. Now he thinks it about the best. The crop from a scant nine and one-half acres last year netted him \$2,000 and was all off for the Christmas trade or earlier.

The Irwins until the past three years hauled manure to this orchard whenever the team was not busy. When they couldn't put it into the orchard they dumped it in the coral and spread it later. The trees were heavily manured, but it became noticeable that the fruit was rough, oversized, late, sour and coarse.

In the past three autumns the manuring has been lighter and a commercial fertilizer containing 5 per cent potash has been spread ten to fifteen pounds per tree in a band three feet wide and at least three feet away from the trunk. Winter rains soak it in, and the quality of fruit has improved. Plenty of manure is good for oranges, believes Mr. Irwin, if it is balanced with potash and

Lime for Split Figs.

Split figs are probably not due to overpollenization, think G. P. Rixford of the United States Department of Agriculture and Henry Markarian, one of the most experienced fig growers of Fresno county. Some fig trees in the midst of a bunch of capri trees do not have split fruit. But Mr. Markarian says split figs are due to soil conditions and late irrigation. They should not be irrigated after July 15, but should have plenty of water in the soil then. Mr. Rixford, however, points to orchards where trees on ditch banks have no more splits than the others.

The best remedy Mr. Markarian has found for split figs is hydrated lime, three tons per acre for quick results. Until the year before last some of the trees bearing biggest figs lost their crop by splitting and souring so that the juice ran out and stuck to the trees. Among these, where he drilled in one and a half tons per acre of lime and then cross-drilled as much more, he got less than 5 per cent of splits.

Uses Screweyes in Wiring Trees

In the Pacific Rural Press of May 6 a very good system of wiring trees

was given. Here is another: Fasten screweyes directly into each limb at the point from which you wish to extend a wire and use bale wire from it to another screweye in another limb on the opposite side of the tree. The limb on one side of the tree serves as a counter-balance to the one on the other. Use iron screweyes and screw in so that a straight pull is given on them by the wire. Iron does not hurt trees, as I have known cases where nails were purposely driven into the trunk of trees because the tree needed iron. Many acres of citrus trees have been wired for several years past at Fullerton. I have noticed walnuts wired this way around Ontario and quite an acreage of apricots are wired this way at Hemet. In about three years the bark of the tree will almost hide the screweye.—C. F. B.

Santa Clara Fruit Prospects.

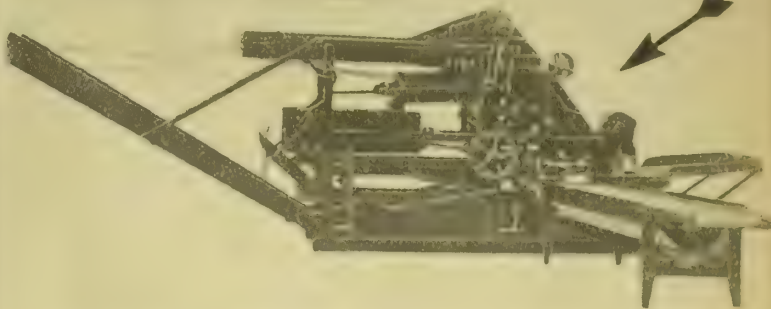
While word is passing around that Santa Clara County has the biggest prune crop in years, it is not so easy to find it on the trees. Imperials generally are well set, weather having been better for them about blooming time than for the French. Blenheim apricots which are the principal variety, were so badly hit by frost and fungus about blooming, that it is hard to see half a crop, though some orchards are loaded. In some instances Hemskirks and Moor-parks are set heavier than Blenheims. Peaches appear to have set a heavy crop. Some orchards are already propped. Cherries are mostly gone. Pears promise a splendid crop in most orchards.

Disked Olive Cover Crop.

Dr. Rearden of Butte county got full benefit of the thick bur clover cover crop in his olive orchard this year. When seen last May, there was a thick mat of it all over the ground, turning yellow. The trees were very vigorous, in fine color, and almost every branch and twig full of fruit buds. The orchard had recently been irrigated, for the doctor has plenty of water, small furrows three or four feet apart having been made last fall. The orchard is not plowed, according to F. R. Irwin, who takes care of it. As soon as the ground was dry enough, it was to be disked, and after irrigations a month apart.

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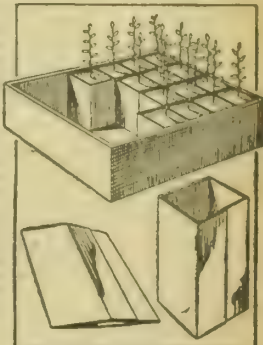
that will keep Squirrels, Rabbits and Gophers from barking your trees and give perfect protection from hot sun, sandstorms, barking in cultivation, etc. Tell us your pest and we will tell you what kind of a wrap to use. We make a number of kinds and can save every tree for you from pests.

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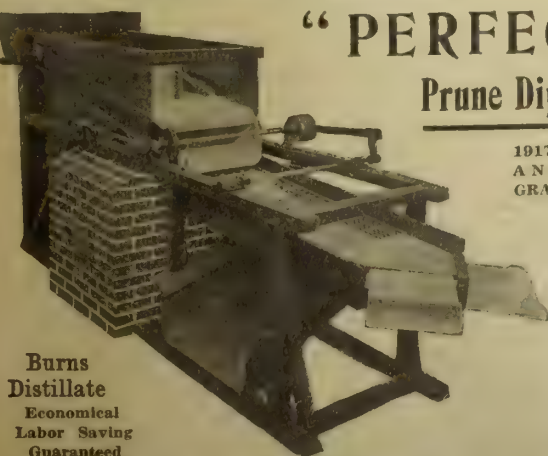
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SANTA ROSA, CAL.

Cantaloupe Picking System Increases Crop.

[Written for Pacific Rural Press.]

Lots of people do not have cantaloupes up to the last of the season because they walk on the crowns to pick the first and second settings, but George D. Mead of the Turlock district has a beautiful yield of fine melons right up to frost, beginning in mid-July in an ordinary season. In his first year, with hired pickers, he suffered like the rest, and it was a sorry looking patch when the rush was over.

The reason his late cantaloupes mature is that shortly before picking begins he trains the vines so there is a path between each row. As the "crown set" is still too far to reach from the path conveniently, he makes the rule that pickers must not lift their feet off the ground among the vines, but slide their toes under the vines till they can reach the melons. The vines must not be picked off the ground any more than this requires. Since his family have been helping, it is not hard to enforce the rule, and it is not particularly more work to pick that way.

TELLING THE RIPE ONES.

The curl does not always tell whether a cantaloupe is ripe enough. But there are cracks about the base of the stem when it is ready to pick for Eastern shipment, and it comes off with a little pressure of the thumb, leaving a smooth "cup" in the melon. If too green, sharp pieces of the stem will remain in the cup. The netting on an unripe melon is flattened, but when it has sugared up and ripened enough the netting will be full rounded clear up to the stem if there is any netting that far.

There seems to be several distinct settings, though blooming is continuous. There is seldom more than one ripe melon on the same branch

in the Mead patch, and it is the one nearest the crown. The last melons to pick are those next to the path. There is usually a shoot from the same point of the vine where a cantaloupe joins it. This shoot is a foot or two long when the melon is ripe, and has buds for the next setting.

PICKING CANTALOUPE RIGHT.

Picking begins as soon as it is light enough to see; for they should be kept as cool as possible. There is very little dew at that season. The whole patch is picked once a day. Every ripe melon is picked, even if overripe; for the first season's experience seemed to show that overripe melons rob those maturing farther out on the vine, and they do not drop off, as the Meads expected the first year.

The stem is pressed off with the thumb before picking up the melon. The fruit itself is handled carefully all the way through, for bruises show up after shipment and knock off more than their proportional value from the whole crate. Such picking avoids bending the vine sharply, which would affect the melons farther out if it does not kill them.

DRIVEWAYS CROSSWISE.

Owing to the Mead System of laying off driveways crosswise of the rows and frequently enough so the picker's sack is usually full when he arrives at a drive, there is no walking across rows to empty the sacks into the field crates. There is no lost time; for as soon as the bag is emptied, the picker proceeds on the same row in the next block.

Right after breakfast, the melons are hauled to the shade to be packed. The size of crates and the number of cantaloupes for each size are fixed by the State standardization law.

Dries Out Brush Roots to Kill Them.

[Written for Pacific Rural Press.]

In clearing and planting the cut-over redwood land of Humboldt county many farmers have found it necessary to leave the redwood stumps in, until they can get capital to blast and drag them out. Much acreage is profitably farmed among the stumps, but in the first and second years there is often serious difficulty with the brush roots of timberberry, briars, etc. These hold the land so loose that it can scarcely be packed enough to grow crops, and where cultivated the season after being cleared of the brush the roots sprout and have to be cleared out again.

Lack of help and capital did Pete Philipsen a good turn last year. The four and a half acres that he finished clearing of brush June 17 was simply plowed and harrowed twice

and sowed partly to bald barley and partly to oats. The dry summer killed the roots so they rotted last winter and spring. No underbrush has grown on this piece, and it will be in good shape for cultivation next year. The barley and oats volunteered this spring. The barley was cut late in May, but the volunteer oats on June 8 were standing close to six feet tall, a pretty good stand, still green and growing, though headed out.

On another place, Mr. Philipsen had previously cleared the land and cultivated a crop the following season. Brush grew rankly.

So on the two and a half acres cleared recently Mr. Philipsen is doing intentionally what he had to do on the four and a half acres—letting it dry for a season to kill the roots.

LIFTER GUARDS FOR LODGED GRAIN.

To the Editor: In your last issue W. H. W. of Turlock asks about the best method of harvesting lodged grain. Having been a grain farmer myself in former years, I had to meet this difficulty occasionally. In my experience I found the most satisfactory results obtained by putting lifter guards on my header about 18 inches apart on the sickle bar. They are made of spring steel to be flexible and extend forward of the

sickle bar about 15 inches and return with an upward curve. They lift the lodged grain so the knives can cut under it. Any blacksmith can make and attach them.—J. W. Ryce, Selma.

MILO ON HARD LAND.

"I sowed milo on hard land in July six years ago and got a fine stand," says Frank Hasper of Imperial county. "I sowed it like barley and flooded right away. Murky, hot weather followed, as usual."

The U. S. Weather Bureau during the crop seasons furnishes special weather warning services and infor-

mation to growers of corn, wheat, rice, sugar, tobacco, alfalfa, apples, pears, peaches, grapes, etc.

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Field and Garden Suggestions

[Written for Pacific Rural Press.]

Strength of Nevada Alfalfa.

It is claimed by many that the alfalfa raised in the Fallon district contains from one to two hundred per cent more food value than that which is raised elsewhere. The general average is about five tons per acre per season, but where care is exercised in preparing the land the yield runs considerably higher.

On the L. A. Beckstead ranch, south of Fallon, twenty acres yielded 150 tons last year, it being three years old at that time. Mr. Beckstead was formerly in the dairy business, but owing to the pressure of other duties has been selling off most of his stock.

The writer was very much surprised to find on this ranch the Holstein bull, Prince Gelsche Aaggie Walker, a son of the famous Prince Gelsche Walker, who was recently purchased by the Santa Anita Rancho for \$12,500. Mr. Beckstead's bull has been fed on alfalfa only for the past two years and is in very good condition.

Mr. Matley's herd stud, Matineux, who was Reserve Champion at the P.-P. I. E., has also been fed on alfalfa for the past two years and is looking extremely good at the present time.

Velvet Beans Available.

Samples of velvet beans, such as are grown with corn in Georgia, are available for distribution. These beans need warm nights and a support like corn to hold them up. They are planted in the corn and ground up with the stalks and corn into a practically balanced feed. The Williams' Patent Crusher and Pulverizer Company of San Francisco will send samples of the seed to farmers who will take care of them and report results. Planting them during the later cultivations may practically double the feed produced per acre.

The Bluepod Bean.

The bluepod is an early-maturing, heavy-producing, small white bean produced or worked out from the or-

dinary, old-time crop of small whites. The bluepod is most generally grown from Ventura to San Luis Obispo counties, in the coast regions. It was originated in Santa Barbara county.

Mr. H. C. McCabe of Lompoc, Santa Barbara county, tells about noticing in his crop of whites a few years ago certain bean plants that had a bluish cast to the pod, and almost invariably were early maturing and heavy producers. It was from these blue pods that he selected his seed each year until a permanent grade was established, which today is called the bluepod.—Chas. Barnum.

Sowed Alfalfa in July.

Alfalfa has been sowed successfully in late June or early July in Imperial Valley. Frank Hasper irrigated and planted some corn on "soft" light land in June. The corn grew knee high on that irrigation. Then he sowed alfalfa and irrigated right away; for "baby" alfalfa cannot be irrigated here on account of the sediment left by irrigation water. Three or four weeks later the alfalfa had five or six leaves, and it was irrigated again. That crop went to seed. The corn was cut in September and cattle turned in. The field was disked in October. The corn grew again next spring, and alfalfa made as pretty a stand as could be wished.

Dangers at Potato Harvest.

Two serious potato troubles will afflict growers who are not careful in harvesting. The fungus causing watery rot resulting in "leaky potatoes" is widely distributed in the soil and will affect potatoes with which it comes in contact if their skins are broken or punctured. Keep injured tubers separate and dry the injured surfaces quickly. The tuber moth lays eggs on piles of potatoes exposed in the field overnight. Worms that hatch from the eggs bore the potatoes in every direction. Cover potatoes left in the field over night with sacks.

Garden on Fruit Ranch.

One of the biggest orchardists in the Vacaville district has a garden which is a "big help," for it provides early vegetables fresher than they can be bought, and the work required is done evenings. Last spring they had peas from the middle of April on. When the peas were gone they were followed with watermelons. Several messes of beet greens about May 1 cost nothing, for they had to be thinned out anyhow.

Water Kills Star Thistles.

Star thistles are killed in Tehama county by watering them in July or August. B. M. Brown tells how he has killed a number of patches. This spring he was ditching to a grain field to get some more of them.

All that is necessary is to soak the ground from the surface downward, and keep the surface wet for 24 hours. This sours the roots, and within 10 days you can pull out the roots, but their bark will be left in the ground.

Subsoiled Orchard Too Much.

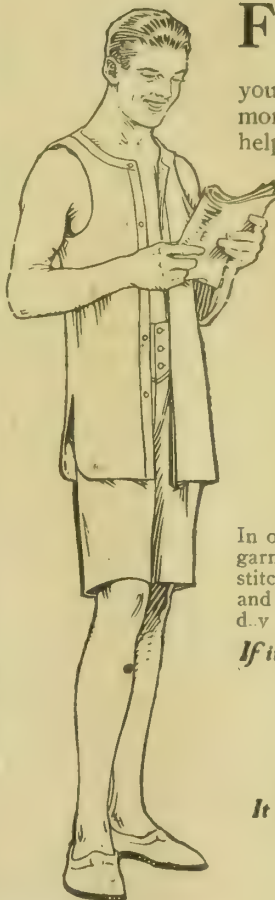
Subsoiling 24 to 30 inches deep at intervals of six feet in the centers of peach trees set 24 feet apart in

deep, loamy soil, fifteen years previously, killed the trees, as told us by Frank Watson of Butte county. Eight animals on the subsoiler twist-

ed it out of shape, cutting the big roots, and the trees, which were not in the best shape, could not stand the shock.



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PUMP PERMITS ORCHARD ALFALFA.

[Written for Pacific Rural Press.]

E. F. Haven's pumping outfit on ten acres will pretty soon pay for itself by irrigating a neighbor's 25 acres in the Winters district of Yolo county; and at the same time permits Mr. Haven to grow good alfalfa in his apricot orchard without injury to the trees.

When Mr. Haven came from the East over four years ago, he noticed a neighbor's 10-acre orchard planted to alfalfa. Every year he noticed that the neighbor got as good apricots, and as many per acre as he did with clean cultivation. His neighbor got alfalfa extra, and avoided cost of cultivation, as well as injury to the tree roots, which continued to grow in the rich surface soil.

So last fall Mr. Haven seeded about five acres of orchard with 12 pounds alfalfa seed per acre, and this spring had nice alfalfa on most of it early in May.

The orchard with alfalfa requires more water, lack of which would be disastrous. The centrifugal pump run by 10 h. p. electric motor, however, furnishes plenty at the rate of 150 gallons per minute. It took four days and a few hours to irrigate the 10 acres, including the orchard and alfalfa.

POTATO CROP DUE TO PUMP.

[Written for Pacific Rural Press.]

A pump to irrigate potatoes proved to be a very profitable necessity for E. O. McClure in 1916. He lived in the Modesto irrigation district where ditch water was available only once every five weeks; and then in such a body that to use it on his one-third acre would have covered the plants, which must be avoided. Besides, potatoes must have water when they need it, to make good tuber growth.

A 3½-inch pump run by a 7½ h. p. motor delivered about 35 inches of water from the domestic well whenever it was needed.

TWO CROPS OF POTATOES.

Along in March, Mr. McClure planted two sacks of white rose on

the one-third acre. He dug 30 sacks of salable potatoes and used all but two sacks. These were planted August 1 on the same ground after flooding it. They were irrigated and cultivated every two or three weeks after the potatoes set; and 47 sacks were dug, which sold for \$118 at \$2.75 per cwt.

GRINDS LIME FOR FARM BUREAU.

[Written for Pacific Rural Press.]

Not all of Humboldt county farms need lime, though about 1,000 tons per year have been used through the Farm Bureau for the past three years, according to Secretary R. W. Werner. Farm Adviser A. H. Christiansen located a ledge of limestone back in the mountains where it could be obtained cheap in summer, but not at all in winter. A steam engine and grinder were put in by H. C. Andersen with capacity of about 10 tons per 16-hour day. Farmers haul it to their farms through the summer and apply it in spring or fall. When supply gets ahead of demand, the ground limestone is put into bunkers of 400 tons capacity at Rio Dell, where it is available any time. The Farm Bureau attends to the storing and distribution.

MILKS WHILE SEPARATING.

[Written for Pacific Rural Press.]

Twenty dollars from each of nine cows for April butterfat, besides the fresh skim milk kept on the ranch to feed purebred Poland Chinas, sounds like prosperity for Nate Hauck of Alton, Humboldt county. When we saw him in June, he was separating about 450 pounds of milk daily, taking 25 minutes morning and evening to do it. But the separating was not the long grind it used to be, for a ¼-horsepower electric motor has been installed to run it at a more constant speed than he used to be able to do by hand, and Mr. Hauck can milk while the machine is separating.

PIPE SIZE TO CARRY WATER.

To the Editor: I have a 5-horsepower motor and 2½-inch pump (capacity 250 gallons per minute), with 4-inch discharge. Puts water into concrete sump 4 feet high. Will a 6-inch concrete pipe carry this to a point 300 feet away, where the surface is 2 feet higher than at the well?—C. D., Acampo.

Due to the loss by friction, this quantity of water delivered under your conditions will keep your sump practically full and it may be well to add a few inches to the height of its sides to prevent possible overflow.

Mechanical power must fill up the gaps left by the withdrawal of men and horses from the ranks of the Agricultural Army.



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Bean cutters should be ordered as early as possible this year, as the acreage planted is double that of any previous year and there is a shortage in the proper grade of steel for their manufacture.

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IT WILL DO MORE KINDS OF WORK THAN ANY FARM ENGINE MADE BUILT LIGHT—BUILT RIGHT—GUARANTEED

Has wide range of speed—300 to 950 R. P. M.—and will operate wood saw, pumps, washing machines, cream separators, ensilage cutters, sprayers, threshers, barley rollers, grain grinders, electric generators, hoists, power blacksmith tools, concrete mixers, etc., to best capacity. Will furnish power to mowers, reapers, manure spreaders, etc.

BUY A CUSHMAN THAT YOU CAN WORK EVERY DAY A 4 H. P. will drive 3-inch centrifugal, an 8 H. P. will drive 5-inch centrifugal with 20-foot head on 6½ gallons of distillate in 10 hours. See your dealer or write for information to

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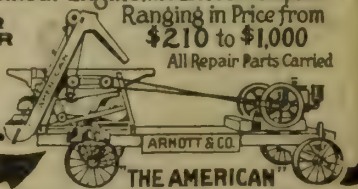


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CRITICS' AND CUDDLERS' CORNER

Subscribers are welcome to praise or to condemn (in letters of not over 200 words) anything which appears in the reading columns of this journal. Contributors to this department may drive and counter-attack each other as they see fit without endorsement or response on our part.—Editors.

What Is the Matter With the Farmer?

To the Editor: I thank Carl Baum for his answer, in your issue of June 9, to my article, but he has not changed my views. I can agree with him that we have made amazing progress along certain lines but the main thing of all, the very foundation upon which everything depends—co-operation in the buying things and in selling of his farm products. There will be no change until the farmer puts his foot down and says "we have got to get one big man and one big organization that will embrace the farmers of the whole State." The green farmer is pitted against a man who understands his business, with the result that he always comes out on the losing side. Very few writers really know the farmer. Writers are generally men that have been successful; they associate with successful men. In all neighborhoods where I have lived fully half the farms have been owned by old people. Probably they started in full of hope, but years slipped by and their land has become impoverished until it's nip and tuck to get even a poor crop. They have seen the town banker, the storekeeper, the commission man and others wax fat from the products of their farm, and they see no way out. They become soured. Such people will oppose any movement. I know of men who will fly into a rage at the very mention of our "Farm Adviser," although they have never met him. There is but one possible way in which to transform such men, and that is by proving to them that their neighbors are selling and buying better than they do. It's useless to appeal to them in any other way.—Chas. Blom, Napa.

Speeding Up California Lands.

To the Editor: We all know that irrigated land in small farms in Southern California can and will raise two crops; and, if properly handled and timed, will produce five crops in two years. Of course, it takes work, water and fertilizer, with a lot of head thoroughly mixed in. It is evidently far from a gen-

eral practice, partly from lack of knowledge of what can be done under the conditions here, and most farmers are satisfied with one crop and that half cared for. Now, if the Eastern farmers can get a profit out of land worth \$200 to \$250 per acre with one crop of grain, and that not always one hundred per cent, why can't a man on ten acres here, by doing practically all of his own work, and no winter feed and fuel bill to pay, have a pretty fine thing of it and not hurt himself, either? He can use two acres for house, outbuildings, orchard, garden and grow alfalfa enough for one good horse, one cow, pigs and chickens. Then he will have eight acres for continuous cropping, with tomatoes, cabbage, beans, sweet corn and many others to choose from in their best seasons. His land should not be idle a minute.—T. M. Edmondson, Los Angeles.

Too Much Advice to Farmers.

To the Editor: I have been reading letters written on the labor questions both pro and con, mostly by labor leaders and Mr. Lubin of Sacramento, assailing the farmers for living conditions on the farms, wages, etc. But I still have to read my first letter written by a farmer or to hear a speech by a farmer telling Mr. Lubin that he shall pay so much to his clerks and shall sell his wares for such a price. In fact, they consider that Mr. Lubin's own business, but whenever he gets a chance he pokes the farmer on all sides. He never tells of what he pays his help or he never has spoken of his arduous task of giving his employes a shower bath every night and tucking them away safely in their little beds. I would suggest that Mr. Lubin buy a ranch, if he does not own one, and fix everything up fine with Brussels carpets, good beds and bedding, etc., and after one year take an inventory and report how much he has left; that is, if he uses transient labor as the balance are forced to employ. The ranchers are law abiding citizens and do not wish to be ruled or ruined.—B. M. Coe, Bogue.

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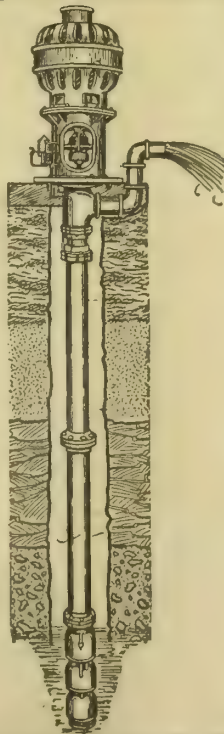
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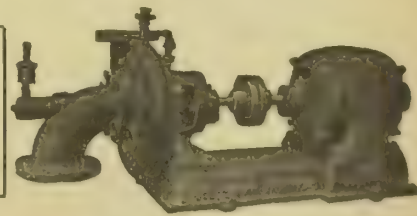
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General Agricultural Review

Field Crops.

Barley hay is selling for \$20 and \$21 baled in Pomona.

A new cannery is to be built at Santa Clara.

The first carload of cantaloupes to Eastern markets went out from Imperial Valley last week.

The Oroville Register says the Ehmann Olive Company is to double the size of its plant.

Two hundred and ninety-eight thousand acres are included in a proposed Kaweah irrigation district.

Heavy frosts have damaged large crops of beans, corn and potatoes in Trinity county. The temperature fell to 27 degrees last week.

The area planted to watermelons in California is estimated by the United States Department of Agriculture at 3,600 acres.

C. W. Jenkins of Sutter County notes that an ordinary corn planter is allright for tepary beans, but the plates are so thin that they crack blackeyes.

Plans for the expenditure of nearly \$1,000,000 at Hueneme, sixty miles north of Los Angeles, are being perfected by the McCrosky Packing Company.

Word comes from Salt Lake that there is an acute hay shortage in the inter-mountain district. The production this year will be only half of that in 1916.

The Oroville district announces that it will be a competitor for the honor of being selected as the place where California will make its initial experiment in State colonization.

Barley buyers have been active in Sacramento and vicinity, and some large sales have been reported at \$2 a hundred. The yield is exceptionally good this year.

The Pacific Pea Packing Company in Oakdale closed down after a month's run, having canned nearly a million and a half cans of peas, the biggest run in its history.

Growing crops of barley, hay and some wheat, covering some 400 acres, near Woodland, were destroyed by fire last Tuesday (June 18). The residence of State Horticultural Commissioner G. H. Hecke was entirely consumed. Incendiarism is suspected.

Grape sugar is beginning to assume a new aspect. Eastern buyers, through agents in Fresno county, are said to be contracting for large quantities at prices that will produce better returns than wine-making.

The potato situation in Southern California is highly satisfactory to growers. Up to the close of last week Los Angeles shippers were paying \$3.00@ \$3.25 per cwt. for good new potatoes. These prices are about double as high as last year's.

A fine paying crop of potatoes is reported from the Brack tract, in the Delta section northeast of Stockton. A large field of spuds produced 300 boxes of 65 pounds each, which sold for \$2.70 per box. The land will be irrigated and planted to beans at once.

Dee Kimura, the principal lettuce grower in the Imperial Valley who has just finished his last shipment East, says that the growing of lettuce in that section promises to become as important as the growing of cantaloupes. Only 435 cars were shipped this season, but next season shipments are expected to reach 1000 cars.

Geo. M. Cooley, president of the San Bernardino Valley Produce Association, says that instead of raising 25 per cent of the potatoes consumed, the San Bernardino Valley is raising a surplus this year of 300 cars of early potatoes, that are selling at \$3.55 per cwt. for shipment.

A grain gradingschool is being conducted by the Oregon Agricultural

College, designed to enable farmers, millers, and grain dealers to determine the classes and grades of all Northwest wheats, so that the milling and marketing values can be ascertained before the grain is sent to market.

A careful report by A. T. Spencer to Sutter County Horticultural Commissioner H. P. Stadler, shows that from Tisdale Weir to the mouth of Feather River, there were 16,000 acres of beans in 1916, which yielded 133,000 sacks; and that there are ready to plant 35,000 acres in the same district this season.

The Bureau of Crop Estimates has received reports relating to the condition on June 1, 1917, of truck crops grown for canning purposes. On the basis of 100 representing a normal condition, California's condition was: Beans (snap), 95; Corn (sweet), 90; Cabbage, 82; Cucumbers, 91; Peas (green), 88; Strawberries, 95; Tomatoes, 96.

Now that the bean planting season is over and bean growers failed to take all the beans in speculators' hands, and the consuming trade refuses to take many beans, in the Los Angeles market, at the high prices that have prevailed, holders are offering to sell limas at 3c lower than a week ago, and white beans 2c lower

and there is little buying at these declines.

America's 1917 wheat crop as forecast June 8 by the Department of Agriculture will fall far below normal, despite a prospect for a more than ordinary yield of spring wheat. A total yield, estimated at 656,000,000 bushels, will give the country 16,000,000 more than last year's crop, but with the heavy demand from abroad, and virtually no reserve store, it will not meet war needs, unless the country goes in for rigid economy.

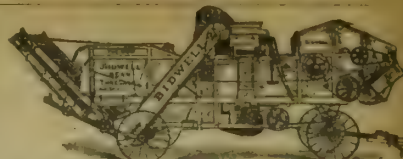
J. M. Gerald of Calexico sold last week eighteen bales of cotton at 25c per pound to the New England Mills of Roxbury, Conn. The growing crop is very promising, the plants ranging from six to twenty inches high and is stooling out in good shape. Cotton raisers are refusing to contract their crop at 20c. Some are holding for the spot price of 25c, and even 30c is being talked of. It is said there are 124,000 acres in cotton on both sides of the border.

Citrus, Nuts, and Semi-Tropical.

Walnuts promise a good full crop in the Pomona district.

Difficulty in securing pickers and packers will delay the pack at Lindsay, and prolong the orange season until after the first of next month.

While the olive bloom was extra heavy in Lindsay this season, for some reason the fruit did not set to the trees as it should, and the indications are that the yield will not be as heavy as it was last fall.



If you'd thresh your Pea and Bean Crops at a profit, and so clean that they will bring an extra price, get a

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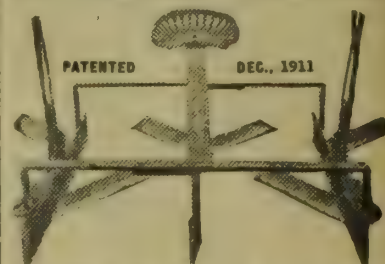
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Write for name of Distributor near you.

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Farmers, order early if you want the Golden Gate Weed Cutter and Mulcher, as the demand this year will be great, as it not only cuts weeds, but kills them, and leaves finely pulverized top soil. Cuts any depth. Prevents evaporation by working under the soil without disturbing soil on top. Write for circular.

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G. H. Bowman Manager.

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Very truly yours,
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They know from the records of their service departments—and we know from exhaustive tests—that Zerolene, correctly refined from selected California asphalt-base crude, gives perfect lubrication with least carbon deposit.

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ZEROLENE
The Standard Oil for Motor Cars

Sufficient acreage has been signed up to assure the establishment of an olive-processing and olive-oil plant at Lindsay by the State Associated Olive Growers' Association.

Oranges will score a hundred per cent crop for the season of 1917, according to figures compiled by the California Development Board and the Southern Pacific Company.

It is announced from Monrovia that the shortage in shooks for orange boxes will cut a figure in the marketing of this season's Valencia orange crop. The late spring in the northwest and inability of lumber men to get into the timber early is the cause.

In the citrus fruit industry San Bernardino county leads, with Los Angeles, Riverside, Orange and Tulare counties closely following, according to the statistical report of the State Board of Horticulture.

Sootless orchard heaters are being tried out under the auspices of the Pomona Chamber of Commerce. If successful they will be generally adopted as a means of fighting winter frosts in the orange groves.

The intensely hot weather in Redlands Thursday and Friday of last week, while causing much discomfort, the thermometer reaching 112 degrees and hurting garden truck, cooked the scale on the orange trees and it is thought the heat did as much good as damage.

Shipments of citrus fruits by water from the port of Catania, Italy, during March, 1917, were 133,882 boxes, as against 43,682 boxes during March, 1916. Egypt received 104,030 boxes, against 7,900 in 1916; Saloniki, 23,798 boxes, against 7,760; and Great Britain, 6,054 boxes, against 3,115.

The Butte County Citrus Association, which ships only 8 to 1 oranges, returned net to the growers \$1.58 per box last season, and \$1.78 per box the year before. They also shipped out the first carload of Sunkist oranges from the State in 1916 on November 9, according to Sec. Oscar Warner and J. A. Lawrence, who was president then.

The packing houses in the Redlands district have finished on navel oranges, the few sweets and seedlings. They have started on Valencias and there are probably 1000 cars of Valencias to go forward. The cool weather held back the growth of the Valencias and they will mature slowly enough to permit packers to spread shipments over the next five months to the close of the orange season.

The Goleta Walnut Association made up of Goleta and Carpinteria growers expect to handle 1200 tons of walnuts this year. Last year they handled 743 tons. Growers in that district say that walnuts are maturing much earlier than last year and the sizes now are larger than a year ago. There is little blight and little trouble from aphids. The outlook is the best ever had.

Deciduous Fruits.

The apricot crop of Kings county is 60 per cent of normal, the peach crop 100 per cent, and the prune crop 100 per cent.

Eastern buyers are reported as doing business with the Prune and Apricot Growers' Association on a large scale, with orders for the 1917 crop piling up.

There will be 6000 tons of apricots in the Hemet Valley this year and the growers are receiving \$60 and \$65 per ton for the fruit. The crop is about 70 per cent of normal, says an exchange.

The Tulare Peach Growers' Canning Association has announced the prices of the crop sold recently to the California Packing Company at \$27.50 per ton for freestones, and Phillip clings \$50 per ton.

From statistics compiled by the State Board of Horticulture taken from reports furnished by commissioners of the various counties of the State, Santa Clara county raises 30 per cent more prunes than all counties combined.

The Earliana, a blue plum produced by R. Burton of Solano county,

has proved seven to 10 days earlier than Clyman, though smaller. Of eight baskets produced last season, six packed 5x6 and two packed 5x5. The tree is a vigorous grower.

The California Fruit Canners' Association plant in Visalia has determined upon packing apricots this year. There is a heavy crop about Visalia this year, and under present weather conditions it will be ripe by June 26, when packing is expected to be started.

W. E. Chanslor of Los Angeles has bought of Arthur E. Hull, the Hull ranch of 320 acres ten miles southeast of Victorville in San Bernardino County, for \$250,000. One hundred and thirty-five acres are in bearing orchard, one hundred acres in bearing five-year-old apple trees and thirty-five acres in three-year-old pear trees.

The sum of \$334,000 will be paid by the directors of the California Peach Growers, Inc., to the growers in the State. This will net the growers an average of 5 3/4 c a pound on 1916 peaches, according to grade of crops, and it is thought that when the entire crop is disposed of the growers will receive about 6 c a pound.

Grapes.

Owing to the shortage of sugar pine, the material from which raisin trays are made, there is a shortage of trays.

A largely increased pack of grapes will be made at the Visalia cannery of the California Fruit Canners' Association this year, it is reported.

Grape leaf hoppers have been giving vineyardists in Fresno county trouble, according to Fred P. Roulard, County Horticultural Commissioner.

Feeding made by the University at the University Farm at Davis shows that dried grapes may be successfully used to replace half the grain of the ordinary ration of hogs. They are best fed in connection with grain, alfalfa and similar feed.

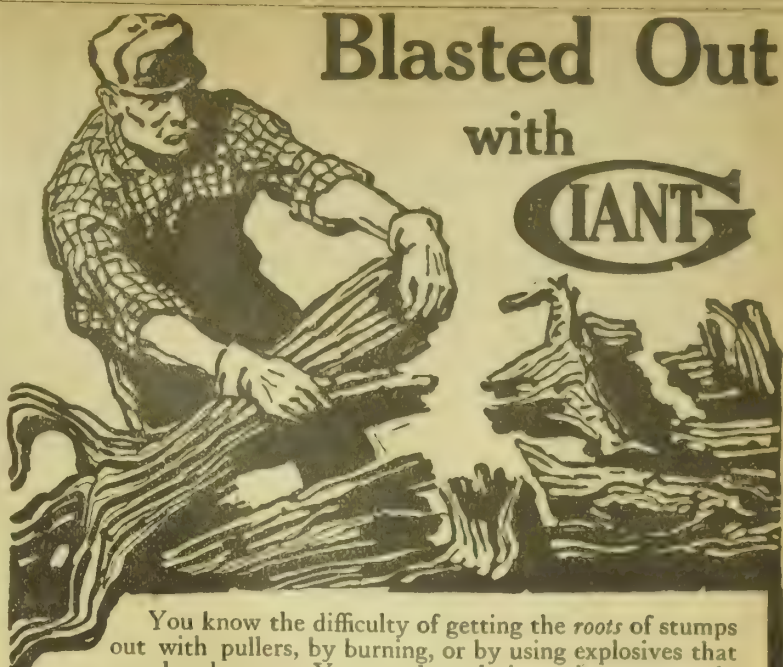
The California Wine Association has taken an appeal from the decision of the Superior Court with reference to the suit against it by the Clovis Fruit Company. The trouble arose over the action of the Wine Association in refusing to accept wine grapes under old contracts in 1915.

At Dinuba it is proposed to form an organization to be known as the Valley Fruit Growers' Association to adjust the question of labor for the coming harvest. For picking grapes, the prices, 3c a tray for Muscats and 2 1/2 c for Thompsons, were favored for the coming crop. The cost of a membership is five cents an acre. There is an enrollment of over 7,000 acres.

PRUNE GRADER AND DIPPER (IMPROVED).

Last year F. J. Yandle of Santa Rosa, placed on the market an improved type of prune grader and dipper, which did very good work. Since then he has improved the machine, especially the heating apparatus. The oil burner this year is twice the size that of last season, being now 12x16 inches, burning distillate oil; the brick work is now built with a baffle wall on the back end, so as to spread the flame over the entire bottom of tank and up the sides of water line before entering smoke stack; and here is placed a super-heater, which supplies additional hot water all the time, with no extra fuel expense. The machine is automatic throughout and fully patented. First comes the dirt screen and leaf extractor, then the prunes pass into dipper clean, and are sufficiently scalded, then the dipper delivers them automatically on to the grader screens, which give three sizes and delivers them to the trays.

Since completing the machine, Mr. Yandle has taken into partnership with him, Frank A. Brush, the Santa Rosa banker, and they propose to push its manufacture and sale. Factory and sales headquarters will be maintained at Santa Rosa.



You know the difficulty of getting the roots of stumps out with pullers, by burning, or by using explosives that merely shatter. You need explosives that not only shatter but also lift and heave—that tear the roots and make clearing easy. You can save work, time and money by using

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There are two Giant Farm Powders—Eureka Stumping Powder, for dry work, and Giant Stumping Powder, for wet work. Test them alongside of any others. Write us and we will have our nearest distributor supply you—at lowest market prices—with a trial case that will prove to you the economy of using Giant Farm Powders.

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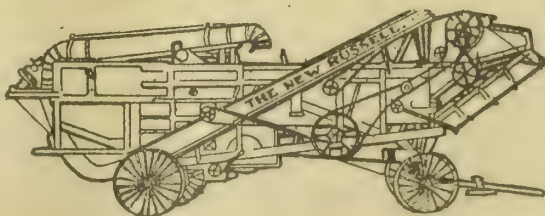
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Your horses are glad when you use Mica Axle Grease. The powdered mica makes a smoother spindle. The wagon pulls twice as easy, and the grease lasts twice as long.

STANDARD OIL
COMPANY
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MICA AXLE GREASE

Developing Berkshire Pigs for Breeding.

[Written for Pacific Rural Press.]

When the American Berkshire Association decided to maintain a view herd at the Panama-Pacific Exposition, they chose John F. Myers to take charge, because Mr. Myers had proved his ability with Berkshires by raising an average of eight pigs per litter during the five years he had raised them for himself.

When, after the Exposition, the association decided to maintain in the field a diagnostician of the obscure troubles due to the faulty feeding, breeding, or equipment, they chose Mr. Myers. He had been successfully doing the same kind of work privately before the Exposition. For a year he went wherever called in eastern and central states; and showed many breeders the cause of unthriftiness in their pigs. But lack of finance discontinued this field work of the association in 1917. Then members of the Western Berkshire Congress asked Mr. Myers to visit their various ranches long enough to get their feeding systems on the best basis, and to show wherein their equipment and breeding could be improved economically.

STRIKING REMARKS BY J. F. MYERS.

Feeds in California are as fine as anywhere in America, except where we lack green pasture, alfalfa, etc.

Ground barley is practically equal in value for hogs to Indian or sorghum corn, if fed with something else.

Skim milk is worth, per hundred pounds, six times the price of pork per pound, if fed with grain at the rate of three pounds milk per pound of grain. If hogs are worth 12 cents, skim milk fed this way is worth 72 cents per hundred pounds.

All hogs ought to have free access at all times, to wood ashes, salt, charcoal, some form of lime other than quicklime, in separate containers; also fresh water.

California rice bran or meal with bits of the hulls in it, has knocked out lots of pigs. Hulls stick in the intestines, leading to constipation, scours, and runts.

A sow should gain a pound per day from the time she is bred until she farrows. Gilts and very thin old sows should gain more.

Wean the sow—not the pigs. Leave the pigs where they have been and move the sow.

CARE BEFORE FARROWING.

Ten or fourteen days before farrowing, put the sow into a house and lot by herself. The house need not cost over \$15. The lot should be at least a half acre and be covered with green pasture. Lacking green pasture, cut green stuff to feed her.

RATIONS FOR PIGS BEING DEVELOPED FOR BREEDING PURPOSES.

Where pigs are on good pasture the daily ration may be reduced one-third. Make into slop or feed dry in self-feeders.

Month feeding period	RATION NO. 1.				Ration daily per 100 pounds live weight, feeds in pounds			
	Monthly mixture feeds in pounds	Finely ground barley or corn	Wheat middlings	Tankage	Mixture	Water	Skim milk	
3rd	45	50	5	6	3.8	11		
4th	50	44	6	6	3.9	11		
5th	55	41	4	4	4.0	10.5		
6th	60	35	5	5	4.1	10		
7th	70	26	4	4	3.6	9		
8th	84	10	6	6	3.0	9		
9th	88	10	7	7	2.6	9		
10th	83	10	7	7	2.0	9		
11th	83	10	7	7	2.3	9		
12th	83	10	7	7	2.0	9		
RATION NO. 2.								
3rd	60	40			2.6		12	
4th	56	44			2.7		11	
5th	54	36			2.8		11	
6th	47	33			2.9		10	
7th	72	23			2.4		8	
8th	75	25			2.5	1	8	
9th	71	29			2.4	2	8	
10th	70	30			2.3	2	8	
11th	70	30			2.2	2	8	
12th	70	30			2.2	2	8	

This acts as a salad and keeps her temperature down. Watch and feel of her udder occasionally to learn the condition of her milk. It will get her tame so you can help in farrowing. If she is developing milk too soon or too freely, reduce the grain.

FEED AFTER FARROWING.

Too much milk at the start gives pigs scours. The sow's milk should increase for a while as the pigs grow older. This is accomplished by feeding according to the schedule herewith, modified by Mr. Myers from Prof. Wm. Dietrich's rations. The amount of feed must be varied according to age and condition of the sow and size of litter. Get five boxes side by side and prepare a quantity of each mixture.

RATION FOR SOWS SUCKLING LITTERS.

[Feed as a slop; or dry in self feeders. All parts by weight.]

Days after farrowing	Mixture to feed	Pounds of mixture to feed twice daily per 100 pounds live weight of sow plus weight of litter.	Mixture	Water
1	1	.1		3
2	1	.2		3
3	1	.3		3.25
4	2	.4		3.25
5	2	.5		3.25
6	2	.6		3.5
7	3	.7		3.5
8	3	.8		3.5
9	3	.9		3.75
10	4	1.0		3.75
11	4	1.1		3.75
12	5	1.2		4.0
13	5	1.2		4.5
14	5	1.2		4.5
15	5	1.2		4.5
16	5	1.2		4.5

At this time the sow is on full feed and should be fed this same ration. (No. 5), mixture until weaning time, say eight to 12 weeks old.

Mixture 1.—Wheat bran one part; wheat middlings one part.

Mixture 2.—Wheat bran one part; wheat middlings two parts; finely ground barley, corn, or corn meal two parts.

Mixture 3.—Wheat bran two parts; wheat middlings six parts; digester tankage 60 per cent, one part; finely ground barley, corn, or corn meal, eight parts.

Mixture 4.—Wheat bran two parts; wheat middlings six parts; finely ground barley, corn, or corn meal, 12 parts; digester tankage 60 per cent, one part.

Mixture 5.—Wheat bran two parts; wheat middlings six parts; finely ground barley, corn, or corn meal, 14 parts; digester tankage 60 per cent, one part.

Feed as slop; or dry and thoroughly mixed in a self feeder. Ground barley costs \$1 per ton more than rolled barley, but is easily worth the difference if fed in slop. It should be finely ground if ground at all. Do not feed rolled barley in slop, for the pigs do not chew it. Rolled barley is all right if soaked and drained. It works a little better in self feeders if dry, than ground barley. Do not allow soaked, rolled or whole barley to sour.

If the sow is making much milk, let up on the feed several days before weaning. Then, on the third day before taking the sow away, shut the pigs away from her except three times a day. Let them suckle twice next day and once the last day. On these last three days, give the sow practically no feed.

FEED FOR PIGS AFTER WEANING.

The following ration will keep weaned pigs growing steadily. Since size counts for so much, you can't afford to stunt them by either overfeeding or underfeeding.

First Annual Sale

OF

Purebred Berkshires

We have decided to inaugurate a custom of annual public auction sales. Our first sale will be held at

Escalon, August 2, 1917

(The day following the Carruthers Sale at Mayfield)

The bred sows and open gilts for this sale have been carefully selected from our herd of 250 purebred swine. They were sired by Grand Leader 2nd, Solano Emblem and Fashion Longfellow. They will be in pig to Grand Leader 2nd and to Royal Superbus 220200, the great boar we chose to fill the place made vacant when we sold Grand Leader to go East. Royal Superbus carries the same blood lines which have made Grand Leader's get such consistent winners wherever they have been shown. He is, in fact, a half brother to Grand Leader, both having been sired by that great sire, Superbus. Royal Superbus is a very smooth, deep-bodied boar, with good hams and heavy bone.

Catalog of Sale Ready Soon. Write for Yours Now.

AT PRESENT OUR MOST ATTRACTIVE OFFERING IS SOME WELL-GROWN STRONG SERVICE BOARS, 3 TO 15 MONTHS OLD, WEIGHING 350 TO 500 LBS. A LOT BEYOND WHAT IS NORMALLY OBTAINABLE FOR IMMEDIATE AND HEAVY SERVICE.

Grapewild Farms

A. B. HUMPHREY, Prop.

ESCALON,

SAN JOAQUIN COUNTY,

CALIFORNIA

Mighty Good Pigs Moderately Priced

ANCHORAGE FARM NOW HAS FOR SALE SOME VERY GOOD SPRING PIGS, Sired by MAYHEWS LEADER 6TH, A PRIZE WINNER AT THE P.-P. I. E., AND A SON OF THE \$3,000 WORLD'S CHAMPION, GRAND LEADER 2ND.

THESE PIGS WILL BRING FINE BLOOD INTO ANY HERD. THEY ARE MODERATELY PRICED AND ANCHORAGE FARM STANDS BEHIND EVERY ONE. SEND FOR DETAILS.

We are glad to answer your letters. Address



All Anchorage Farm Pigs are cholera immune.

THE HOME OF STAR LEADER

GREATEST BERKSHIRE IN THE WEST

Butte City Berkshires

We have pigs for sale from Mayhews Leader 6th, a great breeding son of the \$3,000 World's Grand Champion, Grand Leader 2nd; also from Escalon Star, a son of \$1,500 Star Leader.

Also Shetland Ponies, Shorthorn Cattle and Shropshire Sheep.

Butte City Ranch

BUTTE CITY,

GLENN COUNTY, CAL.

BERKSHIRES



A few fine fall pigs, strong in Bandmaster, Masterpiece and Rival's Champion blood. They are strong and active, with good top lines, heart girth and moderate heads. Glad to show them or send full particulars and prices.

MAPLEWOODE RANCH

E. M. HOLGE, Owner

HOMER HEWINS, Jr., Manager

CALISTOGA, CAL.

Expert Hints on Advertising Hogs

[Resume of an address delivered by R. H. Whitten at the California Swine Breeders' Association at Davis, Cal., May 30.]

If you, Mr. Hog Breeder, who can't get satisfactory results from advertising, would only put yourself in the place of the average person who reads your advertisement, you would stop crying that "advertising doesn't pay." You would cease blaming the newspapers and magazines. Instead, you would compose some new advertisements with punch and pulling power. Remember this: you cannot expect a paper to get the inquiries for you. No matter how good a paper may be, it can only act as a distributing medium for advertisements. The effect that the advertisement has upon those persons depends upon you, not upon the publication.

When you place an advertisement you enter the field of competition—not alone with other breeders of your kind of hogs, but with every breeder who advertises in the publication. For, while some readers may be looking for advertisements of particular breeds, many who are just thinking of taking up hog raising may not be decided upon any certain breed, and others already raising hogs may be dissatisfied with the breed they have and may be considering a change.

A reader does not answer every advertisement in a magazine. He just glances through the pages, picks out a few advertisements that particularly appeal to him, and answers them. He very seldom notices the commonplace, conventional advertisements. Consequently, no matter if your stock is better than that of some other breeder, you must not expect a reader to buy it in preference to his unless your advertisement also is better.

Advertising is simply salesmanship in print. And salesmanship is an exact science. There is no chance about it. Every result can be traced to a given cause, and, if you expect your ads to pull, you must learn the causes which bring about success.

SECURING ATTENTION.

In writing an advertisement you should aim to first secure attention, then create desire, and finally inspire the resolve to order your stock or to send for your literature. Attraction must be the keynote of your advertisement. This applies both to the general make-up and to the headlines. By the judicious use of borders, photographs and drawings, or by having something unusual in the type or arrangement, you can give your advertisement both attractiveness and distinctiveness. I like the idea of having something about the advertisement—the border, or an illustration, or a catchy phrase, or a combination of them—the same every time. The general wording should be changed frequently, but if something striking is made permanent it will be remembered, like a trademark.

Pictures tell a story quicker and better than cold type, and they leave a more lasting impression. A poor picture only spoils sales that otherwise could be made.

It is often said that the headline determines the strength of an advertisement, and there is considerable truth in the statement, for if the headline is not catchy enough to attract attention the balance of the advertisement will never be read. But when I say "catchy" I don't mean

smart. Many amateurs think that to attract attention they must say something clever—perhaps humorous. But to combine humor and salesmanship is about the most difficult thing in the world. When a person finishes reading your advertisement you want him to say, not "What a clever ad!" but "By jiminy, that's what I'm going to buy!" Don't use general statements, either. Such headlines as "For Sale," "Notice," "Attention," and "Announcement" don't connect with a reader's needs; they don't strike a point of contact; they don't hit him in a vulnerable spot. Start your ad with some such expression as "Make Hogs Pay," "Breed Up Your Herd," "Money in Hogs," "Do Your Hogs Pay?" or "Hogs for Profit."

CREATING DESIRE.

Occasionally some grouchy advertiser will say that you can offer your goods to readers, but whether or not they purchase depends entirely upon them. He gives as his reason that old saying, "You can lead a horse to water, but you can't make him drink." But that adage is a back number, as is any person who believes it. You can make a horse drink if you first make him thirsty by salting his hay, and you can make a reader order what you have for sale if you salt your advertisement by using descriptions that will create a desire for your stock. You have good reasons why you raise a certain breed. You have reasons galore for their excellence. Then give some of the more important ones to the readers of your advertisement. Mention the size, bone, stretch, mellowness, quick growing and easy feeding qualities; the vigor, prolificacy and prepotency. If you produce show stock, bring that to the front. Mention your winnings and those of your customers. The best way to compose an advertisement is to write just as you would talk to a visitor. These points mentioned are the ones you would mention to a visitor, so put them in your ad. Use short, familiar words and short sentences, and make every expression crisp, clean-cut and right to the point. Every word which does not add strength to your advertisement weakens it.

INSPIRING RESOLVE.

But it is not enough to create a desire for your stock. The reader may be sincere in his decision to order from you, but unless your advertisement causes him to take immediate action, something may happen that will change his plans. So, after completing your description, it is best to add a few words to develop action, such as "Order Early," or "Write at Once." Even such an expression as "Send for Circular" or "Write for Prices" helps to develop action. Key each advertisement, if you use more than one publication. Keep track of the number of replies received from each, and also the cost per inquiry. The paper with the highest rate may prove the cheapest in the end by furnishing a large number of inquiries at a low cost for each.

I like to have a line appearing under my name and address to give a good farewell impression to the reader. I generally use the expression "Satisfaction or Your Money Back," and find it a winner.

(To be continued.)

Announcement

Hear Ye! Hear Ye!

BE IT KNOWN that owing to crowded conditions the good herd at Normandy Farms, Visalia, California, owned by Arlington M. Smith, headed by the good boar Winona Royal Champion 5th, Junior Champion of the Western Berkshire Congress Show at the California State Fair, 1916, and the junior pig sensation of last fall circuit, containing many grand sows of wonderful show ring reputation and production record, bred to grand old sires the country over, have been moved to a larger acreage to be known hereafter as

A1 Ranch

That among many recent purchases of high-class additions, in which neither time nor money have been spared, the good boar Charmers Star Master, a sire of considerable reputation and breeding record, was brought west from the herd of E. J. Barker of Thorntown, Ind.

BE IT FURTHER KNOWN that A1 shall stand for all that is good in Berkshires; the size, early maturity, prolificacy and vitality that makes this good breed a universal favorite among farmers; the quality and style that excites the imaginative and the high dressing percentage and high-class product that appeals to the packer, retailer and consumer

The management of A1 RANCH earnestly solicits all correspondence of anyone interested in Berkshires. Write for farm catalog just out and learn more of this herd.

A1 RANCH

ARLINGTON M. SMITH

VISALIA, CALIFORNIA

Stop!
Look!
Investigate!
Large Profits!

AN INVESTMENT THAT IS BETTER THAN GOLD BONDS.

A way to increase your crops enormously, aye, more than that, an INSURANCE AGAINST DROUGHT. Don't delay, but send at once for illustrated catalog, telling all about the best IRRIGATION PIPE the world has ever known.

When you buy pipe don't experiment—it is costly. We build the best pipe that science can produce and have spent over a quarter of a century developing our present high standard. We no longer experiment—we know.

For IRRIGATION use either our STANDARD REMCO MACHINE BANDED REDWOOD PIPE, designed for pressures up to 400 feet head, or our SPECIAL IRRIGATION PIPE, designed for pressures up to 50 feet head.

Every foot of pipe we ship is guaranteed.

If your pipe bears the "REMCO" stamp you may be sure that your pipe troubles are over and that you have a pipe that will give you service long after the so-called "cheap" pipes have gone to the junk heap.

Redwood Manufacturers Company

Also Makers of the Famous "Remco" Tanks and Silos.

Office:
1608 HOBART BLDG.
SAN FRANCISCO, CAL.

Factory:
PITTSBURG, CONTRA COSTA
COUNTY, CAL.

California Hog Book

BY W. S. GUILFORD
Price \$2.00 per Copy, Postpaid.

Pacific Rural Press, 525 Market St., San Francisco

Live Stock and Dairy Notes

Livestock breeders all over the State are invited to send on postal cards, notes regarding their sales, State and County Fair intentions, new stock, etc.

The Dairy.

California furnishes over half of the 3,080,000 pounds of butter contracted for by the United States Navy.

The milk dealers of Redlands have advanced the price of milk from 5c to 6c a pint and from 10c to 11c a quart.

A Jersey cow, Dosoris Park Lily, bred, owned and tested by the estate of Chas. Pratt, Glen Cove, N. Y., has made two consecutive years' records of over 900 pounds of butterfat.

At the Lynch ranch near Paso Robles three young ladies put 15 cowboys to shame in roping wild cattle. The ladies were the two daughters of Henry W. Lynch, and Miss Bessie Pinkerton of the Pleyto ranch.

8,942,120 pounds of creamery butter were reported in 292 storages on June 1, 1917. The total holdings reported by 217 storages were 8,431,140 pounds as compared with 7,016,731 pounds June 1, 1916, an increase of 20.2 per cent.

The San Joaquin Valley Dairy-men's Association has effected a temporary organization at Fresno. The body will be a non-profit co-operative association, in no way competing with co-operative creameries already established in the Valley.

R. F. Fisher of Carlotta has a registered Holstein, Sugar Queen Topsy, on which he hopes to win the Holstein prize for 305 days' production as a two-year-old. She produced 13,984 pounds milk containing 486.9 pounds fat and dropped a calf two months after the close of the test. One of his aged cows, Princess Zozo Pletertje 2nd, produced 20,252 pounds milk containing 735.68 pounds fat in 365 days. The shorter test period is preferred in order to keep breeding periods uniform.

F. A. Heroux of Modesto, who attended the National Holstein-Friesian Association Conference at Worcester, Mass., also the great National Guaranty sale, is shipping a small but rather select group of the Blacks and Whites to Stanislaus county. In the lot is a young son of King of the Pontiacs out of a 20-pound two-year-old heifer, also Model Domino Glista purchased from E. A. Powell, Lakeside Stock Farm, Syracuse, N. Y., along with four other females from same farm, one 30-pound A. R. O. cow in the lot. Another of 26-41 in seven days and a two-year-old granddaughter of King Segis with an A. R. O. of 22-12 in seven days, both purchased at Worcester along with

10 other young, undeveloped, but well-bred females purchased at Worcester and various other points in New York State.

Of the 159 cows in the Ferndale Cow Testing Association which made over 60 pounds fat in May, 1917, 107 are listed as Jerseys and 8 as hyphenated Jerseys. Most of these have high percentage of Durham blood.

The Pacific National Dairy Show for 1917 will occur November 16 to 23, inclusive, at which time a general exhibit of dairy stock, dairy machinery and dairy products in general will be displayed at Portland, Oregon.

Butter in cold storage in Los Angeles, May 31, 1917, was 45,033 pounds, a gain of 14,159 pounds since the week before. The same date last year 90,087 pounds were in store, making an increase over a year ago of 54,946 pounds. The gain the same week last year from the one previous was 13,432 pounds, showing but little difference in the accumulation in store now and this time last year.

Swine and Swinememen.

Homer Hewins of Maplewoode Ranch, reports some fine spring litters of his purebred Berkshires.

The National Duroc-Jersey Record Association has purchased Liberty War Bonds to the extent of \$1000.

Sam Robinson prefers white hogs for Imperial county except for their tendency to get sore ears due to sunburn. He is trying out Durocs and Berkshires this season to decide which seems best. Then he will go into purebreds.

Arlington M. Smith has moved his Berkshires from Normandy Farms to larger quarters at Al Ranch, Visalia. Mr. Smith recently brought from the East and added to his herd, Charming's Star Master, a sire bred along the best Berkshire lines.

W. S. Guilford recently secured for his Butte City Berkshire herd a son of the great English boar Epochal. This makes 5 great boars now in this herd. The others being, Iowa Champion Peer 2nd, Mayhews Leader 6th, Superior Lustre and Dukes Combination 13th.

Farmers in the Bryn Mawr section of the upper end of San Bernardino county are giving increased attention to hog raising, and the number of hogs in that section has greatly increased the past six months. More attention is also being given to cattle raising, the high price of meat attracting ranchmen to livestock.

R. M. Dunlap brought from the East this week two Duroc-Jersey gilts for A. J. Welch of Redwood City. These were secured from Crow & Son of Hutchinson, Kansas. The senior yearling was shown through the circuit last fall and won many prizes. The other sow is one of the best the Crows had. Mr. Welch has already a fine lot of hogs on his ranch and will show at the State Fair this fall.

Nate Hauck of Alton will be at the State Fair this year with two beautiful fall gilts and five spring pigs, which have been entered in the Poland-China futurity. They are to be sold at the Poland-China Association sale during the Fair. His smooth, big-boned, squarely-built, big yearling boar, which took second at the State Fair last year, is still on the job and in fine working shape, but will not be taken to the Fair this year.

A. B. Humphrey, proprietor of Grapewild Farms, has decided to inaugurate an annual public sale of purebred Berkshires. The date of the first sale will be August 2, 1917, at Grapewild Farms near Escalon. This sale will afford an opportunity to secure females sired by Grand Leader 2nd, the World's Champion Boar, who recently was sold and is now at the head of one of the big Eastern

herds. There will also be sows and gilts bred to Grand Leader and to Royal Superbus, a half brother to Grand Leader, recently secured to take his place at the head of the herd. Mr. Humphrey reports that Royal Superbus is developing wonderfully in spite of very heavy service.

Livestock Miscellaneous.

W. F. Holt sold last week his 4,800 acre stock ranch near Piru, Ventura county, to Sterling Price, a wealthy Orange county beet rancher, for \$50,000 cash.

Imperial Valley creameries are filling large contracts with the Government for butter to be used by the

Army and Navy. This butter is made entirely from sweet cream and kept up to the highest possible standard.

The prices of meat animals—hogs, cattle, sheep, and chickens—to producers of the United States increased 1.2 per cent from April 15 to May 15, this year. In the past seven years prices decreased in like period 1.2 per cent.

Beef Cattle.

The U. S. Department of the Interior notified Governor Stephens that sections of Yosemite National Park will be opened to cattle grazing as soon as snow is sufficiently off the range. Sections of the Park will be thrown open for cattle-grazing in

Keep Your Hogs Healthy

ROWES AUTOMATIC HOG OILER does the trick. It is on guard all the time. The cheapest insurance against parasites and disease.



Pacific Dairy Machinery Co.

56 CLAY STREET

SAN FRANCISCO

Milk and Cream Coolers.

Milk Cans.

Cheese and Butter Salt.

Gasoline Engines.

Pumps.

Diablo Separators.

Feed Carriers.

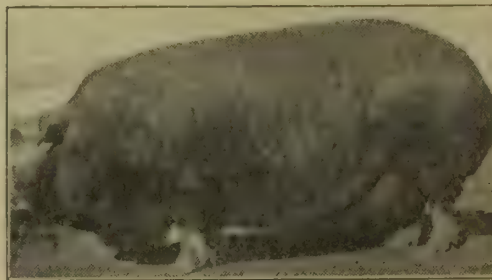
Litter Carriers.

Stanchions.

Cheese Making Supplies.

Boilers.

BASSETT'S POLAND CHINAS



For many years at widely separated show rings, under many different judges of varying type ideals, my Poland Chinas have been consistent prize-winners. My herd is large and I cull closely. The animals sent out as breeders are the very tops of a large number. I KNOW that my kind of Poland China is a profitable farmer's hog, for I send carloads of them to the packer every year—uniform in size, high in quality, quickly and economically matured and finished.

Young stock, \$30 Up.

M. BASSETT,

Box 1, Hanford, Cal.

GRAND CHAMPION SOW,
P.-P. I. E., 1915; Sacramento, 1916.

Linview Sale

I am offering for sale my entire herd of

BIG TYPE POLAND-CHINAS

consisting of 10 brood sows and about 30 pigs and shoats. Also my GIANT JOE boar. My herd is second to none in the State and my prices will surprise you. Other business compels the sale. Write or call.

O. L. LINN

LINVIEW, MODESTO, CAL.

BERKSHIRES

FOR SALE

3 boar pigs just weaned, sire Successor's Duke 8th 190138, dam Successor's Bernice 6th 190141.

GEO. M. YORK
MODESTO, CALIFORNIA

RHOADES & RHOADES

Expert Live Stock Auctioneers.

Purebred Stock Sales a Specialty

Sales Conducted in All Parts of Calif.

Ben A. Rhoades, Auctioneer

1501-3-5 So. Main St., Los Angeles, Cal.

PURE-BRED SHROPSHIRE FOR SALE

500 RAMS, one and two years old, 300 yearling EWES

These sheep are of SUPERIOR QUALITY and are offered in lots to suit at

REASONABLE PRICES

MILLER & LUX, Inc.

1314 Merchants Exchange Bldg.,

San Francisco

TAM WORTHS

(The Bacon Hog)
Largest Herd in the State

DUROC-JERSEYS

Mature Stock and Weanlings of both sexes.

Sure to please.

SWINELAND FARM,

W. O. Pearson, Prop. Woodland, Cal.

Smalley No. 14 Feed Cutter

WITH MEAL ATTACHMENT

Used very little. Good as new. Also 8-inch Burr Grain Grinder. For sale by

M. VAN HOOK

Dos Palos, California

1000 One and Two-Year-Old

SHROPSHIRE RAMS

By Imported Canadian Sires and Purebred Ewes. For further particulars call or address:

C. E. BARNHART

Phone No. 251-F-2

SUISUN, CALIFORNIA

Dealers
in
PAPER

Blake, Moffitt & Towne

37-45 1st St., San Francisco
Blake, Moffitt & Towne, Los Angeles
Blake, McFall Co., Portland, Ore.

order to save thousands of head of stock which otherwise would have to be butchered because of the lack of forage.

Several thousand head of cattle will be delivered in Ely, Nevada, for shipment to Kansas City, it is reported.

Cattle shipments from the Porterville district for the spring season of 1917 will reach a total of \$500,000 in value, according to local estimates.

Eleven cars of beef cattle, including 270 cows and steers, were shipped out of Hollister recently by the Pacheco Cattle Company to J. C. Mitchell, a Denver livestock dealer.

A Southern California syndicate has bought of W. W. Landers his stock ranch of 4,000 acres situated on the south bank of Kern river in Tulare county for \$150,000. Included in the sale are 1,500 range cattle.

H. M. Barngrover of San Jose writes us he has recently shipped to his Veramont Ranch in Plumas county 9 head of registered Hereford yearling heifers and a bull. The bull is California Prince 2nd, a choice son of Prince Lad 11th, the sire of the celebrated steer, California Favorite.

R. M. Dunlap returned the first of the week from a trip through the Central States and brought with him nine head of Scotch cows with five calves afoot, for the Ormondale Co. of Redwood City. One of these was secured from E. Ogden & Son of Marysville, Mo.—a two-year-old Mayflower 4th shown last fall as a senior yearling and won several firsts. She is bred to Bellows Bros.' Radium, a \$10,000 bull. Also the Ormondale Co. secured a splendid senior calf, which they expect to show this fall.

Sheep.

The highest price paid for wool on this coast was 63½¢ per pound for 35,000 pounds recently at Lebanon, Ore. It is stated that options are being taken for Willamette Valley, Ore., wool at 65¢ per pound.

The various organizations of Canada forming the United Wool Growers' Association will hold their annual wool sales this year between July 1 and August 10. The Dominion Department of Agriculture is arranging for a warehouse in Toronto or some other point in eastern Canada for the use of the various wool growers' associations of Canada, and it is understood that if reasonably good prices are not offered at the sales the wool will be sent to the warehouse to be disposed of at a later date.

The University Farm has lately added to its flock six choice Romney ewes, recently imported by S. H. Coffin of North Yakima, Washington. They were bred by the famous Romney breeder, E. Short of Pararangi Station, Fielding, New Zealand, and are yearlings past. The ram was bought at the P. P. I. E., being exhibited by the New Zealand Government and was the first prize ram lamb. The breed originated in a low-lying tract of land or marsh in the county of Kent in southeastern England and is known as the Romney Marsh. They were good grazers, rarely receiving any feed other than pasture throughout the year. The breed is hardy, and because of being raised on low ground they are regarded as being resistant to foot rot, and readily adapt themselves to either range or farm conditions.

LIVESTOCK DIRECTORY.

Rates in this directory, 3c per word each issue; or if carried weekly for one year, 2½¢ per word.

SWINE.

Poland-Chinas.

SPECIAL SALE of weaned boar pigs of the famous Whitten Ranch Poland-Chinas. Get one and grow him out. He will put money-making qualities into your herd. Prices very low; satisfaction guaranteed. Send for free booklet, "Hogs for Profit." Packed with valuable information; tells how to become successful. Ranch in Tulare county, but address owner, R. H. Whitten, 610A Security building, Los Angeles.

BOARS of serviceable age all sold. We have a few choice gilts bred to John Henry, an exceedingly choice boar. Also have a fine lot of fall pigs, either sex. Bar N Ranch, E. A. Noyes & Son, props., Sutter, Calif.

REGISTERED POLAND-CHINAS—Young boars ready for service. Weanling pigs, both sexes. Prices attractive for quick sales. J. H. Cook, Paradise, Cal.

CRAWSHAW'S CALIFORNIA CHINAS are prolific and profitable. Can fill your order for weanlings, either sex, for \$15.00 each. J. A. Crawshaw, Hanford, Cal.

LAKESIDE STOCK FARM POLAND-CHINAS are money-makers. Satisfaction or money refunded. Geo. V. Beckman & Sons, Lodi, Cal.

NOW BOOKING ORDERS for spring pigs, either sex, from my prize-winning, large type Poland-China hogs. H. I. Marsh, Modesto, Cal.

POLAND-CHINAS—Big type combined with quality. Choice bred sows, gilts, boars. W. D. Trewitt, Box 82A, Hanford, Cal.

REGISTERED POLAND-CHINA SWINE—Prize winners. Finest stock in the State. \$20 up. M. Bassett, Hanford, Cal.

POLAND-CHINA HOGS—Large type. 200 lbs. in 6 months. I guarantee to please you. O. L. Linn, Linsview, Modesto, Cal.

BIG-TYPE POLAND-CHINAS—Stock from the best herds of the Middle West. N. Hauck, Alton, Humboldt county, Cal.

REGISTERED POLAND-CHINAS and Duroc-Jerseys. Cholera immune for life. T. H. Beckman, Lodi, Cal.

POLAND-CHINAS—Three extra fine boars, one large and two medium type. W. Bernstein, Hanford, Cal.

POLAND-CHINAS—Large type. The Browning Stock Farm. W. H. Browning, Woodland, Cal.

POLAND-CHINAS—A few gilts left at \$15 each. Edward A. Hall, R. F. D. 1, Watsonville, Cal.

REGISTERED POLAND-CHINAS—J. H. Haneborough, Route 4, Modesto, Cal.

REAOAKS RANCH herd of registered Poland-Chinas. W. J. Hanna, Gilroy.

Berkshires.

GRAPEWILD FARM BERKSHIRES—World's Fair Grand Champion Grand Leader 2nd heads our herd, not only himself a champion, but the sire of Champions. At the 1916 California State fair his daughters won first in all of the senior sow classes, including the Grand Champion Sow. At the 1916 Oregon State Fair a Grand Leader sow was Junior Champion. We are offering a number of choice boars of exceptional breeding and are also booking orders for fall pigs. A. B. Humphrey, Escalon, San Joaquin Co., Cal.

BERKSHIRES sired by Mayhew's Leader 10th one of outstanding sons of Champion, Grand Leader 2nd. Weaned pigs, \$15 each. They are dandies. Heavy boned kind that will grow into large hogs. Dallas Baché, Hollister, Cal.

REGISTERED BERKSHIRES—Progeny of Improver B. Young stock now ready for sale. Start your herd with breed and strain of established reputation for California conditions. Geo. G. Meckfessel, Berlin, Cal.

BERKSHIRES—I have one of the best herds on the Pacific Coast, including Grand Champion Sow, Reserve Grand Champion Boar under one year, Third Aged Boar, etc. Frank A. Brush, Santa Rosa, Cal.

EFFICIENCY FIRST BERKSHIRES—Ten firsts, all championships Nevada State Fair, 1916. Laurel Champion and Grand Leader breeding; any age. Joseph Wilson, Jr., Mason, Nevada.

BERKSHIRES—Young stock from prolific stock now ready. Can furnish trios or more if desired. Write for prices. W. G. Thompson, Napa, Cal.

IMMUNIZED NORMANDY BERKSHIRES—Good type. Breeding stock, any age, for sale at all times. Cast iron guarantee. Arlington Smith, Visalia, Cal.

ROSE CREST BERKSHIRES—Rivals Champion Best blood. Open and bred gilts. Service boars. F. L. Hall, Ferris, Cal.

CARRUTHERS FARMS BERKSHIRES—Cholera immune. Second annual sale August 2, 1917. Mayfield, Cal.

REGISTERED BERKSHIRES—Young stock for sale sired by a first prize son of Laurel Champion; prices right. Imperial Stock Farm, Morgan Hill, Cal.

MODEL HERD BERKSHIRES—Bred for size and quality. Weanlings and gilts. J. L. Gish, Laws, Cal.

HOPLAND STOCK FARM—Registered Berkshires. Prices on application. Hopland, Cal.

REGISTERED BERKSHIRES—Geo. M. York, Modesto, Cal.

BERKSHIRES—Fair Oaks Ranch, Willits, Cal.

Duroc-Jerseys.

PRICED FOR IMMEDIATE SALE—Entire breeding herd, including Champion, First, Second and Silver trophy winners. The offering is composed of outstanding show animals, show prospects, their dams and coming fall show herd. Winnings of eight entries at State Fair and Butte County Exposition: 2 silver cups, 2 Champions, 6 Firsts, 2 Seconds, 1 Third. Prices \$20 and up. Haden Smith, Woodland.

RANCHO RUBIO DUROCS—Only a few September gilts left. One coking good fall boar by Orion Model, son of the last International Grand Champion. Place your orders now for weaned boar pigs. Best I ever raised. Elmer Lamb, Ceres, Cal.

REGISTERED DUROC-JERSEYS—Service boars from prize-winning stock are money-makers. They grow faster. New England California Corporation, Ripon, Cal.

DUROC-JERSEYS—Herd boars. E. N.'s Colonel and Tulare Boy. Sweepstakes winner at Fresno, 1915. Choice breeding stock. J. P. Walker, Visalia.

MOST MONEY IN DUROC-JERSEYS—Bred sows and weanlings, either sex, at all times. Delta Farm and Live Stock Co., Colton, Cal.

REGISTERED DUROCS of guaranteed breeding. All ages. Weaned pigs, \$10. H. B. Boudier & Son, Napa.

HEAVY BONED DUROCS—A few service boars for sale. Ormondale Co., Route 1, Redwood City, Cal.

REGISTERED DUROCS—Crimson Wonder stock. Young stock, both sexes. L. D. Collins, Denair, Cal.

REGISTERED DUROC-JERSEY SWINE—Both sexes. Big-boned type. B. F. Randall, Hardwick.

CROLEY'S BALANCED HOG FEED—the cheapest feed to fatten hogs. Write Geo. H. Croley Co., Inc., Live Stock Supplies, 631-637 Brannan st., San Francisco.

WINTON DUROC-JERSEY FARM, Winton, Cal.—High-class purebred hogs, both sexes, any age.

BIG TYPE DUROCS—Well grown: out February and March; pigs of either sex in any quantity we ship only the tops and butcher the culls. F. M. Johnson, Napa, Cal.

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An Official Register of Tuberculosis-Free Herds for California

[By Charles Keane, D. V. S., State Veterinarian.]

[The Rural Press takes pleasure in printing below a synopsis of the address delivered by State Veterinarian Keane before the California Holstein-Friesian Breeders' Association at its recent session at Chico. In this address is discussed an important phase of the bovine tuberculosis problem with a view to the ultimate control and eradication of this dread disease. The doctor said:]

The movement to establish official registers of tuberculosis free herds, while of recent origin, has gained some impetus. The Federal Government, through its Department of Agriculture, has been carrying on a propaganda in relation to this subject since 1915. In a recent letter from the Chief of the Bureau of Animal Industry we are advised that Federal accredited tuberculosis free herds have been established in the District of Columbia and in twelve other States. Practically all of the beef and dairy breeds are represented in a total of some 104 of these accredited herds. Of the total number nearly one-half of these herds are of Holstein-Friesian breed. State registers have been established in three States.

The advantages of owning an officially accredited tuberculosis free herd are manifest, among which might be mentioned the benefits brought about in the herd by freedom from tuberculosis; publicity and consequently greater advantages and opportunities in selling and possibly better prices; and freedom from the necessity of having animals tuberculin tested prior to interstate shipment.

It has been further proposed that publicity at live stock exhibitions and State and county fairs may be given to these accredited herds by placards to be placed upon their pins. This action, it is expected, will ultimately lead to the establishment of separate exhibition classes for these herds. These records, being public documents, will, of course, be published from time to time, showing the names and addresses of the breeders whose herds are included in same, as well as such additional data as might be of advantage to possible purchasers of animals of the breed.

Shall California adopt such a register? From our official viewpoint, we believe the establishment of an official register of tuberculosis free herds in this State will be just one more step toward the ultimate goal that we are seeking—namely, the control of bovine tuberculosis. While not overlooking the effect such a movement, if adopted, might have on

breeders, our ultimate object is to aid our great and growing dairy industry.

If California should establish such an official register our plans would very likely differ somewhat from those of other States; for in addition to the establishment of accredited adult herds by plans somewhat similar to those adopted in other States, we should like to also offer you the proposition of establishing accredited junior herds; and we shall give you a brief outline of our ideas in relation thereto:

There are some breeders who might find it practically or economically impossible to adopt certification by means of testing and segregation of reactors as it is conducted in other States. In such herds, if certification were desired, the work could start with the calves by removing them from their dams shortly after birth and placing them in a spot which is entirely sequestered on the same premises from where the balance of the herd is located, or by finding a new suitable location for them. These calves would be fed milk that is sterile, as far as tuberculosis infection is concerned, or they could be supplied with nurse cows which had previously passed the necessary official examinations and tests to insure as far as possible their freedom from tuberculosis. As the young herd grows up the members in it would be tested by the State regularly, preferably semi-annually, and the herd would be visited from time to time in order to insure that the regulations in connection with such certification were properly carried out. By the establishment of such an accredited junior herd the breeder who now has an infected herd would be laying a foundation for a new clean herd and would likewise be in the position of selling clean, tuberculosis-free animals just as if he had already had an entirely clean herd without the severe drain and expense that it often costs to secure this much sought objective. It is quite certain, however, that in the course of a few years any breeder adopting such a plan would be maintaining two herds, namely, an old, infected herd and a young, clean herd. We feel quite sure that if such a plan were adopted by any breeder, it would ultimately lead to the maintenance of but one clean tuberculosis-free herd built up in the manner that I have briefly described. Looking at this subject from all angles, it appears to me that the buyer is becoming very discriminating as time goes on and is ultimately

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going to demand breeding animals from non-reacting herds.

A number of States have recently made special provisions for the acceptance of cattle from other States originating in accredited herds. The Northwestern Live Stock Sanitary Association, at a recent meeting, adopted a resolution recommending that all of the eight States in the association require a sixty-day rest on purebred cattle shipped into those States unless such cattle came from accredited herds.



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R. F. WILSON, Stockton, Cal.

F. STENZEL WINS RURAL PRESS PRIZE IN STATE DAIRY CONTEST.

Our records show that five grades owned by F. Stenzel, San Lorenzo, had the highest production of butter fat for the month of May, among the cows entered in the State Dairy Cow Competition, viz., 2177.0 pounds milk, 84.640 pounds butter fat (average distance from calving 116 days at the beginning of the month). Mr. Stenzel is, therefore, entitled to the Pacific Rural Press prize for the month of May and I would ask you, therefore, to send him a check for the prize money. Ten other herds had five grades that qualified for the Pacific Rural Press prize for May as follows: J. W. Coppini, average production of butter fat 79.446 pounds; G. E. Trigg, 74.865 pounds; I. Iversen, 67.840 pounds; Hollow-Hill Farm, 64.280 pounds; K. W. Abbott, 55.934 pounds; Floyd Beebe, 64.047 pounds; Bohnett Bros., 49.241 pounds; L. Hess, 44.278 pounds; J. M. Christen, 33.679 pounds; Southern California State Hospital, 51.081 pounds.

Berkeley, June 14. F. W. WOLL, Superintendent of Dairy Tests.

Beef Raisers Jobbed (?)

[Written for Pacific Rural Press.]

Cattle in the Alturas district of Modoc county are grazed in national forests and public domains until July and August, when they are taken down to the valley ranches and fed or pastured until September and October, when they are generally sold. Last fall, just before the beef cattle were gathered, said P. S. Dorris, prominent cattleman of Modoc county, at the recent farmers' meeting in San Francisco, butchers who buy in that section met in Reno and apportioned to each his district, in which none of the rest would compete; and reached an understanding as to prices. The arrangement was said to be so well organized and adhered to that it was impossible for Modoc people to get any other buyer to look at or offer a price on their cattle. Meanwhile, feed on ranches was rapidly used up or bought by the big manipulators, and the beef had to be sold. A buyer would come into his district, look around a few days, buy a few head, and go away, telling stockmen his firm had all they could use for the present, but that he would be back in a few days. By that time more people would be pinched for feed and would sell at a sacrifice. The operation was repeated until practically all of the stock were bought at his own price.

One San Francisco butcher sent a

buyer into a district about 70 miles from Alturas and paid \$5 to \$10 per head more than Alturas people could get. The buyer in Alturas district was informed of this. He went immediately to San Francisco, says Mr. Dorris; prices dropped to the general level, and the competing buyer bought no more beef. The price he had paid proved that the beef was considered worth that much more than other districts were being paid, but it was also proved that stockmen could be forced to sell for less.

When the "manipulators" had bought up practically all of the stock a "sudden" shortage developed, the stockman had lost his profit, and the consumer paid all the traffic would bear. In many cases, stockmen made less, if anything at all, in two years than "manipulators" made in ten days to two months.

The "manipulators" knew the supply of cattle and feed, of which the farmers were relatively ignorant. The only solution, thinks Mr. Dorris, is for stockmen to organize and operate a market committee, with capital to carry stockmen who can't keep their cattle until it will bring a justifiable price, and who will keep members posted on available supplies of stock and feed that would affect right prices.

BEAN STRAW AND CORN SILAGE.

To the Editor: Would corn silage and bean straw make a successful feed for dairy cattle? or for dry stock or sheep? I shall have the straw from 100 acres of beans this fall and am thinking of planting corn for a 60 or 70-ton silo, if I could make a success of feeding it to either sheep or cattle. The cattle seem to eat the straw with relish here in the spring. But I have always fed it with alfalfa hay. Hay will be very scarce and high here this fall, so any suggestions you could give me as to how I could feed the straw to an advantage would be welcome.—S. D. P., Turlock.

Bean straw balances well with corn silage—both for nutrients and for dryness and succulence. It will work well both with cattle and sheep. For dairy cows it is good also, but a little alfalfa hay or protein meals could be added to advantage. It will certainly be of advantage to have the amount of bean straw which now seems to be promised for feeding during the coming fall and winter.—Editor.

TAMWORTHS AT HOLTVILLE.

H. E. Betts of Holtville is one who is putting into practice the slogan of "More and better hogs." He has a fine herd of Tamworths, the herd header being Swineland King 2nd; dam, Hazel M 2nd and sired by Nimrod 3rd. Mr. Betts uses no wallows for his hogs. The



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VETERINARY QUERIES

[Answered by Dr. H. B. Winttingham, Petaluma, Cal.]

[Subscribers wishing an immediate reply should send money order for \$1.00. No charge for questions answered through this department. Name and address of subscriber must accompany each query.]

Shoats Die Mysteriously.

To the Editor: Have lost several shoats lately and am not able to determine cause. The pigs are about three to four months old. The first indications of trouble are loss of appetite and inclination to lie around. Had one taken suddenly with lameness or stiffness in front legs, which got better after a day or so and the pig was able to walk about, but refused to eat or drink anything and died in five or six days. I opened one and there did not appear to be anything wrong inside. Stomach was filled with yellowish fluid and appeared to be somewhat inflamed and reddish on inside.—G. M. E., Tulare.

This looks like rheumatism. Give 5 grains hexamethylamine and sodium salicylate each to each pig twice a day.

Calf Probably Had Pneumonia.

To the Editor: I have two calves each one about four or five months old and both sucking the same cow. One of the calves, a heifer, began to walk around like she was stiff and began to fall off. She coughs some and had sore eyes for awhile and is getting thinner all of the time. This calf never had the scours all winter, but since she has been on green grass she has the scours a little.—E. W. C., Patterson.

The sick calf probably had an attack of pneumonia, which left her with a chronic pleuritic affection.

Test the Filly for Glanders.

To the Editor: Several months ago small lumps appeared between the jaw bones and along the throat of my filly. These remained for two or three weeks and disappeared. Then, in about a month, appeared again and kept enlarging till now there is considerable swelling all around the jaws and well up toward the ears. The swelling is quite firm and doesn't seem sore. The animal is in apparently good health; eats well and keeps in good condition.—E. W. L., Covelo.

It would be advisable to have this animal tested for glanders before any other diagnosis is made.

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San Francisco

A Ruptured Colt.

To the Editor: My colt has a rupture of the navel a little larger than a hen egg. It started a few days after birth. I put lime water in the milk two or three times a day. Would it be advisable to put everything back up and then tie the skin close up to the belly, or what can be done?—E. J. P., Templeton.

These ruptures usually disappear in the first half year of life. If at that time it is still there, an operation is advisable and should be done by a qualified veterinarian.

Jersey Has Hard Lumps on Body.

To the Editor: Our Jersey cow has little hard lumps over her entire body, and well above the bag behind where the hair is short the skin, in quite a large patch, is hard and crusted and risen a little above the other skin and a yellow transparent matter is oozing out. Can you tell me what the trouble is and what to do?—C. D. H., Santa Cruz.

Give one-half ounce doses of Fowler's Solution three times a day.

Mare with Warts on Udder.

To the Editor: John Elkema of Tranquillity has a mare heavy with foal, aged 5 or 6 years, that has a lot of little warts on her udder and one large one on leg about four inches across. The large wart bleeds some. What should be done?—G., Fresno.

Paint warts with a 2 per cent solution chromic acid daily.

Treatment for Thrush.

To the Editor: I have a horse with the thrush, commonly so-called. I used for one application blue vitrol dissolved in hot water. It helped, I think. What is your advice?—F. K. S., Pixley.

Your treatment is all right.

Pig Paralyzed.

To the Editor: What can I do for a pig that has been paralyzed in the hind legs for about three weeks?—P. S., Sacramento.

If this pig is pregnant the trouble will pass off when she farrows. In any case give teaspoonful syrup iron iodide three times a day.

Sows Get Trembly Legs and Die.

To the Editor: My sows get stiff and trembly in the hind legs and are not able to get up without help and finally die.—J. G., Dos Palos.

Give ten grains each of dried iron sulphate and hexamethylamine to each sow in the feed twice a day.

Mule Colt with Sore Navel.

To the Editor: I have a mare mule colt about one month old. Its navel never disappeared and has always been little sore. What shall I do for it?—L. E. P., Wasco.

Paint this with tincture iodine daily.

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Write for new booklet, "The Control of Blackleg." It tells about Anti-Blackleg Serum which cures Blackleg and may be used simultaneously with vaccine to combat outbreaks and safely protect valuable stock.

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Eastern Agent

Poultry for Profit

[Written for Pacific Rural Press by Susan Swaysgood, Pomona.]

QUESTIONS ANSWERED.

TURKEY AND RABBIT TROUBLES.

To the Editor: Will you please tell me what is the matter with my turks? They are from three weeks old to two months, are sick only a few hours, and then die. Only miss about one feed. I feed curd, cornmeal and chick feed. I have rabbits that have sore ears. What is the cause, the cure, and is it contagious?—W. B. S., Modesto.

The information is too meager for proper diagnosis, but I believe your turks are dying with lice. Head lice are hard to find on turkey poult. If you will dust the mother hen good with good insect powder, then put one or two drops of oil of cedar on the turks' head feathers I think your troubles will cease. Sore ears on rabbits are contagious, but by spraying the hutches and using some good ointment or carbolated vaseline on the ears you can easily cure it and keep it down. It is hard to say what causes it in individual flocks. Primarily it is dirty hutches and neglect of sanitation.

CHICKS NOT FEATHERING OUT WELL.

To the Editor: We have six-week old R. I. Red chicks that are not feathering out well. What is the cause? Is it advisable to buy baby chicks at this time of year?—J. R. I., Willows.

Some fault in your brooding or feeding. Give a little more bone meal and animal food; it takes mineral to make feathers. If the fault is in the brooding it is because the hover is too hot, or the chicks are crowded. To second question: Yes, if you can furnish shade for very warm days the chicks will lay almost as soon as if hatched early this year. Weather has been so cold I would prefer late hatched chicks.

RABBITS WITH DISEASED LIVER.

To the Editor: On killing rabbits we have found a few whose livers were affected as per sample sent you. They show no symptoms of sickness, looking well and eating as usual. We feed alfalfa meal, moistened very slightly with water, morning and night and give rolled barley at noon. There is water before them all the time. What is the matter?—Mrs. H. E., Stockton.

It is very probable that your rabbits have coccidiosis. This disease is caused by a parasite and the first sign of it is that the young rabbits get pot-bellied. This is not always the case. There is no way of telling, because it may be that the old rabbits have the disease in a chronic form and they pass it on. It is highly contagious. The United States Dept. of Agr. urges the separation of hutches, instead of having them in tiers, and spraying often with a good disinfectant. Your feed is very poor. Feed a little bran, vegetables or oats and keep rock salt in the pens.

TO PACK EGGS IN LIME WATER.

To the Editor: How do you put up eggs in lime water for winter use? How much lime do you use, and how much water does it take for a four-gallon jar?—J. M., Paicines.

Take 16 ounces of quick lime, eight ounces of salt, boiling water one gallon. Make as much as you want, using these proportions to every gallon of water. To make the above, pour boiling water over the lime, stirring well to keep from burning. Add the salt, stir until it quits boiling and when cold pour off

the clear liquid. Pour this over your eggs, and keep a weight on them.

HOT WEATHER NOTES.

The warm days have come at last, just as everybody knew they would, but how many are prepared for them? If we are to get the best results from stock we should get this lesson of preparedness.

To be prepared for hot days we should have some shade for all kinds of stock, both young and old; we should have clean cool nests, so that if two hens happen to get in one nest they won't be so hot that broken eggs will result from the accident. Have plenty of nests; the hens won't always use them, but it is better to give them the chance. Have a cool place for your sitting hens and keep some of the ground moist so that they can have a bath when they get off to eat, and besides wet, cool ground is good for the eggs.

Feed your green feed about noon, if you only feed it once a day. This helps them through the hottest part of the day, then let them seek shelter till towards five o'clock.

GREEN FEED.

If you have not got plenty of green feed it is not too late yet to plant, provided you have irrigation water. The green feed grown with plenty of water is much more digestible than that grown on dry land, and yet that is better than none; so let every one try to do what he can under his conditions.

LEG WEAKNESS.

This trouble affects brooder chicks especially, and when it appears just reduce the starchy feed. Feed sprouted oats and put in the mash feed one part fine bone meal to five parts other feed. Sour milk or buttermilk is also good for leg weakness. All breeds are liable to it, but it is generally worse among the heavy breeds, where the body grows too heavy for the legs. Sometimes it causes a good bird to be a little bow-legged, but if it is caused by too quick growth, it won't hurt to breed from him as the next generation would be all right.

DIRECTIONS FOR PRESERVING EGGS.

The water glass method is the best and easiest, but not the cheapest. Now, as the quality varies in strength, it is better to allow for it. Boil seven or eight quarts of water and let cool, mix this with one quart of white water glass (sodium silicate), and when you gather fresh eggs pour the mixture over and weight the eggs down so that they are kept under the solution all the time.

THE LIME METHOD.

Take 16 ounces of good quick lime, pour over it one gallon of boiling water, stir all the time to keep the lime from burning. Add half a pound of salt, then allow the whole to settle. Pour off the clear liquid and that is what you use to pack your eggs in. Keep covered as in the case of water glass.

THE SALT AND BRAN METHOD.

Get a clean grocery box and line with paper, then mix good clean bran and salt, about one-fourth salt will do, and pack your freshly gathered clean eggs, not touching each other, large end down in the mixture. When it is full, cover about two inches of the mixture over the

top layer and paste paper over the top. Set away in a cool dry cellar and you will have eggs at Christmas as good as fresh-laid ones.

Purebred and Commercial

[Written for the Pacific Rural Press by Harry Mortenson, Suisun.]

HOW TO PRODUCE GUARANTEED EGGS.

(Continued from last week.)

The first point, and the most important now with the high price of feed, is to have good birds. This can be accomplished by culling rigidly from year to year. The poultryman who does not cull his flocks will soon go out of business. Now is the time to begin culling. Some birds have quit laying and should be marketed.

HOW TO CULL HENS.

Experiments have proven that a hen lays the color out of her vent, legs, beak and earlobes in a season. First, she will lay the yellow out of her vent, then beak and earlobes, and finally the legs. A good layer has scarcely any yellow in her body at the end of a laying season. A mediocre one may have some color left in her legs, while a poor layer will be as yellow as saffron. Of course, this holds true only with yellow-skinned fowls. The above, together with the pelvic bone test—that is, the distance between the pelvic bones—is one of the tests used by the University Farm. The best and in fact the only accurate method is the trap-nest, but the average farmer is not equipped to use the trap-nest.

LATE MOLTERS BEST LAYERS.

A hen that commences to molt now is not a good layer. She will not pay for her feed another year. Some years ago all poultrymen discarded their late molters because it was thought that the sooner a hen molted the sooner she would begin laying, but such is not the case. The best layer at the Davis Farm, Lady California, lost a few feathers at a time, commencing the molt in the winter.

HAVE HIGH-PRODUCING MALES AT THE HEAD OF FLOCK.

Breed from known, not unknown, males as well as females. The rooster is half the flock. Do not mate two-dollar hens with a fifty cent cock, for you will get chicks that will not pay for their feed. If you are not in a position to do scientific breeding, thereby building up your strain, buy eggs or chicks from someone who makes a business of it. The hit-or-miss system always misses.

MONGRELS BAD INVESTMENT.

Mongrel hens lay mongrel eggs, which bring the lowest market prices. That is to say, a mixed lot of hens will lay eggs of all colors as we stated in last week's issue. Such a product will leave no profit.

CONSTANT SUPPLY NECESSARY.

The main point is to secure a constant supply the year round. Artificial spring conditions in the winter if you have the right kind of hens will secure eggs when they are high. Electric lights turned on early in the morning has proven a success.

PROPER STORAGE.

After eggs are gathered, they should be placed in a cool dry place. A temperature of 31 to 34 degrees is most desirable. Fertile eggs commence to incubate inside of the hen, therefore the necessity of removing the eggs quickly to a cool place. Do

not store near onions, cabbage, fish, rancid butter and citrus fruits.

MARKET FREQUENTLY.

Do not keep the eggs longer than one week. If you have not enough to ship, club in with your neighbors, but be sure the neighbor produces good products or both will lose their reputation. The effect of one bad egg in a case will cause the consumer to doubt your goods for a long time. The producers should co-operate. Form a community egg circle. The result would be an improved quality of product, and higher prices.

Poultry Breeders' Directory

Rates in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

BABY CHICKS—HATCHING EGGS—White, Brown Leghorns, R. I. Reds, Barred Rocks; sturdy chicks from well-mated fowls; prompt; efficient service. Write for circular. Campbell Poultry Ranch, Campbell, Cal.

BARRED PLYMOUTH ROCKS—Winners at leading shows and wonderful layers. Choice stock for sale. "Nothing better in poultry." Catalog free. Chas. H. Voden, box 396, Los Gatos, Cal.


INCUBATORS—For Essex Model Incubators at factory prices, write Geo. H. Croley Co., Inc., Poultry Supplies, 631-637 Brannan St., San Francisco.

CHICKENS, DUCKS, GEES, GUINEAS, Pea Fowl, Pigeons. Wm. A. French, 545 W. Park St., Stockton, Cal.

WHITE PLYMOUTH ROCKS—Hatching eggs from splendid layers. Mrs. J. B. Tupper, Route 4, Ceres, Cal.

EASTMAN'S BRED-TO-LAY Barred Plymouth Rocks. Fairmead Poultry Farm, Fairmead, Cal.

BRONZE TURKEYS—Albert M. Hart, Clemente, Cal.



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WANTED.

WANTED—Young men and women to attend the Western Normal Course—Normal and Academic. The Normal Course gives an adequate preparation for teaching, at a great saving in time and money. Academic course gives practical finish to education. Write for Bulletin "A," Western Normal, 624 E. Market St., Stockton, Cal.

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FOR SALE—640 acres of half section good wheat land, 24 miles east of Calgary, in irrigation block; raised 45 bushels wheat per acre last year; about 250 acres in crop; 350 acres will summer fallow; 25 acres in alfalfa; modern and complete improvements; \$3,000 cash, balance arranged; price per acre, \$60. Box 17, Cheadle, Alberta, Canada.

DEEP LOAMY RIVER BOTTOM—25 acres alfalfa, 30 wooded pasture; irrigated; big barn; thirty good cows; Vina Ranch built used five years. Manuel Viter, Los Mochinos.

STEVENS COUNTY—Largest off land where stock raising and dairying pay. Free booklet. Phoenix Lumber Co., Crop Department, Spokane, Washington.

STATE, GOVERNMENT AND INDIAN Lands—Bargains overlooked. Free New Blue Booklet. Joseph Clark, Sacramento.

HUMBOLDT STOCK RANCHES—Dairy land, C. E. Robertson, 105 Montgomery street, San Francisco, or Fortuna, Cal.

Mrs. Best's Letter.

BRIDAL OUTFITS

My dear Friends: I am sure any of the June brides would be interested in the display and sale of underwear that is now under way in the city stores and it would be of equal interest to every mother who was outfitting a daughter to go away to school this winter. There is a wide range of prices as well as of styles, but all the garments are dainty and light of weight. Heavy muslin underwear seems to be a thing of the past. Even though a garment is plain, it is of sheer material. The bridal sets, of course, are elaborate, but it is not of those I want to tell you.

THE ENVELOPE CHEMISE.

The envelope chemise, which is a combination of chemise and corset cover, is proving very popular and is made of sheer muslin, crepe-de-chine or washable satin. If of muslin, it is white, of course, and is trimmed either with hand embroidery or lace and insertion. If of silk, it is more popular in pink than white, because although the silk in both colors washes beautifully the white turns yellow in time, while, as the pink loses its color, it can be renewed either by using a few drops of red ink in the rinsing water or a small piece of red crepe paper to give the desired color. These silk garments cost a little more than double the muslin ones, but they wear well and if you want something for extra nice wear are well worth the money. These envelope chemise are worn on the outside of the corset and are on the whole better for slender women than for stout ones.

THE CAMISOLE.

For common wear, the brassiere is still good for stout women, but more slender ones favor the fuller corset cover of muslin, either lace or embroidery trimmed, but for better dressing the camisole has taken the place of the corset cover. This is usually made of silk or washable satin and is just a straight strip of the goods with lace trimming on the top and an elastic around the waist. Strips of ribbon over the shoulder hold it in position. These are very easy to make at home, so we can all possess them, even if the price in the stores seems too high. They run in price from \$1 upward, but could be made for less than that.

CORSET COVERS AND NIGHTGOWNS.

In the corset covers, nightgowns, in fact all lingerie, there is wash ribbon used, so that it can be washed and kept clean and sweet without sacrificing the beauty of it. The nightgowns are all low necked and short sleeved and many of them have lace yokes. The beautiful Philippine embroidery is seen on many of them and they would be very durable if carefully washed. Crepe-de-chine is used also for gowns.

PETTICOATS.

The petticoats have a wide range according to their uses. For substantial every day wear are the white piques, most of them made with a flounce finished with a scalloped edge, or the white sateens simply finished with a tucked ruffle. For better use are the silk jersey with a messaline flounce, or the crepe-de-chine with flounces edged with lace or the taffeta with corded ruffles.

THE HOME CIRCLE

And the most popular of all for use with summer dresses is the muslin skirt with the deep lace flounce. This flounce is made of row upon row of either lace or insertion and after each laundering is just like new.

ROSABELLA BEST.

PROTECTION AGAINST MOTHS.

At the time of spring house cleaning, all furs, woolen goods, feathers and other articles made of animal products should be carried out into the sun to be well beaten and aired. After sunning well and brushing thoroughly, all articles that will not be used during the summer should be carefully wrapped in newspaper or tar paper, sealing the opening with flour paste. These parcels should be carefully labeled. If articles are placed in boxes instead of wrapping paper, the box should have strips of paper pasted around the covers and joints to make it moth proof.

Woolen garments and furs not sealed against moths should be taken from the closets or wardrobes once a week to sun and air in the open. The closets and drawers should be kept free from moths by washing the woodwork in hot soap suds and following that if necessary by spraying with gasoline. Blankets should be sunned well and put away clean in wrapping paper or boxes.

If a carpet becomes infested while on the floor, sponge the spots freely with gasoline and apply around the edges as well. If possible it is better to take up the carpet and clean thoroughly and wash the floor with strong soap suds.

There are a number of articles that are moth repellants, but they do not destroy moths. Among these are gum camphor, fine cut tobacco, pepper, borax, or moth balls. These may be scattered through the articles in drawers and are to a certain extent, a safeguard against the ravages of moths.

CARE OF OILCLOTH.

Oilcloth should not be scrubbed with a stiff brush nor saturated with water. The surface is nothing but paint and if it becomes soaked, especially with water containing washing compounds, it quickly decays. Use a sponge or soft cloth with very little soap and wash and wipe quickly. After it is clean, a thin coating of wax or a floor oil mixed with wax may be applied. This makes a hard surface that is easily kept clean.

WHEN THE SHOE PINCHES.

Lay over the tight place without removing the shoe, a cloth wrung out of hot water. The leather will stretch and the foot be permanently eased. Shoes which are hard from being wet may be softened by rubbing with castor oil.

TOO THIN OR SLIM—THERE'S A DIFFERENCE.

There is a vast difference in being slim and too thin. A slim figure, in the strict sense of the term, is one that is also graceful and prettily rounded. A thin figure is one of ungainly angles about which there is nothing graceful. Women should realize that no day should be so full of duties that there is no time for rest and for the woman who is too thin this is especially applicable. A half hour each day, spent in a darkened room, lying down will relax both mind and muscles.

FAIRIES.

In the the deep, dark marshes,
Have you see pink mallows bloom?
Like flittering, fluttering fairies,
They brighten all the gloom.

The artists try to paint them,
Yet I have never seen
They could portray their petals
Of filmy, glistening sheen.

They tempt you, like gay fairies,
To follow them about.
It would be a doubtful venture:
You might get in—not out.
—Christian Register.

RICE CHARTREUSE.

Line a greased pudding dish one inch thick with cooked rice; then take one pound of beef chopped fine, with one teaspoon salt, one-half cup gravy or milk, one-half cup bread crumbs, one egg, one pimiento, onion juice, paprika and chopped parsley to taste, and pack in the mould. Cover with the rice and steam three-quarters of an hour if the meat was already cooked, longer if it were not. Cover with tomato sauce when ready to serve. For that, melt two tablespoons butter and add one tablespoon of flour and one cup of cooked, strained tomato. Let come to a boil and season with salt and pepper.

TO CLEAN CLOCKS.

To clean a clock, saturate a cloth or pad of cotton with kerosene oil and place it inside the clock on a small dish, so that the woodwork will not become saturated. As it evaporates, foreign substances on the wheels of the works will become loosened and drop. Repeat if necessary. For an alarm clock, one may remove the works from the case and put in a dish that can be covered and pour over kerosene oil. Let stand until all grease and dust have been removed. Return the works to the case without wiping off all the oil.

RHUBARB CAKE.

One cup rhubarb 'sauce, 1 teaspoon soda, 1 cup sugar, ½ cup seeded raisins, ½ cup walnuts broken very small, ½ cup butter or other shortening, 2 cups flour, 1 teaspoon each of cinnamon, cloves and nutmeg. Mix soda with rhubarb, cream butter with sugar, sift flour with spices into butter and sugar mixture, add rhubarb, raisins and nuts, mix thoroughly, bake two hours in loaf pan in very slow oven.

RAISIN GRAHAM BREAD.

One cup of sour milk, one-quarter cup molasses, one-quarter cup of sugar, one and a half cups Graham flour, one teaspoonful each of salt and soda, one cup chopped and floured seeded raisins, two tablespoonfuls of melted shortening; stir well and pour into greased pan, let stand for ten minutes, then put in the oven and bake for three-quarters of an hour.

Good Health.

[By H. E. Foster, M. D.]

Hot Weather and Ill-Health.

The last week or two Californians have experienced a decided rise in temperature, more noticeable especially in the interior valleys and in Southern California. In periods of excessive heat it is generally observed that there is an increase in sickness, and that this sickness manifests itself mainly in the form of gastro-intestinal disturbances, liver congestion, and sometimes skin eruptions due mainly to digestive disorders. In endeavoring to explain these disagreeable effects of a heated spell, various theories are advanced. It is said that disease germs are more active at these times, that foods tend to spoil more rapidly, and that there is a general weakening of the vital forces. One authority believes that the increased excretion of water through the skin and the correspondingly reduced elimination of water through the filtering apparatus of the kidneys, has much to do with this characteristic disturbance. In the elimination of the moisture of the body through the kidneys much of the poisonous material (naturally occurring in the body, through the normal breaking down of its tissues) is expelled, being held in solution. The sweat-excreting apparatus is less effective in this respect, consequently these poisonous products of the broken-down tissues are retained in the system in undue quantities and for undue lengths of time. Now, to counteract this tendency it is well to exclude from the bill of fare meat, eggs, and other foods rich in protein, and substitute in their place a fruit and vegetable diet largely. It is also well to drink plenty of water or other mild drinks so as to increase elimination through the kidney route. Citrus fruits are especially to be recommended at these times.

Sanitation on the Ranch.

The distribution of the various buildings on the ranch place should be made first with reference to sanitary considerations. The dwelling house should be placed at an elevation high enough to secure proper drainage if the contour of the farm affords such a site. It should also be placed so as to obtain as much direct sunshine as possible, which will minimize dampness and secure the benefit of the disinfecting power of the sun's rays. It should be placed higher than the barn and other outbuildings so as to avoid receiving the drainage from these places and far enough away to be free from the disagreeable odors and pestiferous insects which originate there. The milk house should also be placed with due regard to sanitary considerations. The situation should be as cool as possible, susceptible of ventilation, and remote from the source of odors and insects. Keep all buildings as far away as possible from stagnant water (or keep the stagnant water away from the buildings), for such water is a prolific source of troublesome insects and miasmatic effluvia. In other words, see that the situation of the house is dry, well-ventilated, sunny, and well-drained. See also that the well is so situated that the drainage from the various buildings

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Size	Plain	Non-Skid	1 year Guaranteed Tubes
28x3	\$ 7.85	\$ 8.90	\$2.05
30x3	8.30	9.30	2.15
30x3 1/2	10.75	12.35	2.40
31x3 1/2	11.15	12.50	2.50
32x3 1/2	11.90	14.30	2.55
34x3 1/2	13.10	14.40	2.70
30x4	15.50	16.90	3.20
31x4	16.25	17.80	3.30
32x4	16.50	18.00	3.40
33x4	17.25	18.40	3.50
34x4	17.50	19.85	3.60
35x4	18.25	20.50	3.70
36x4	18.50	20.70	3.80
37x4	21.95	22.95	4.10
33x4 1/2	22.95	25.20	4.35
34x4 1/2	23.60	25.65	4.45
35x4 1/2	23.80	25.90	4.55
36x4 1/2	24.00	27.65	4.60
37x4 1/2	25.40	27.95	4.70
35x5	27.65	29.85	5.20
36x5	28.10	30.60	5.35
37x5	28.95	32.75	5.45
38x5 1/2	33.00	36.50	5.85

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roundabout is not thrown in its direction, to find access thereto and contaminate its water.

HOME-MADE COOLER FOR FOODS.

The principle of cooling by evaporation of water, which is employed in the Spanish water-cooler or olla, has long been used for keeping milk and butter, meats, etc., in California. It is employed in many ways. The following is a form of cooler that is being commended from Southern States by extension workers of the United States Department of Agriculture:

This refrigerator consists of a wooden frame covered with Canton flannel, burlap or heavy duck. It is desirable that the frame be screened, although this is not necessary. Wicks, made of the same material as the covering, resting in a pan of water on top of the cooler, conduct the water over the sides and ends of the pan and allow it to seep down the sides of the box. The evaporation from this moistened covering causes a lower temperature inside. On dry, hot days a temperature of 50 degrees has been known to be obtained in the cooler. This is the way to build it:

Make a screened case 3 1/2 feet high with the other dimensions 12 by 15 inches. If a solid top is used, simply place the water pan on this. Otherwise fit the pan closely into the opening of the top frame and support it by 1-inch cleats fastened to the inside of the frame. Place two movable shelves in the frame, 12 to 15 inches apart. Use a biscuit pan 12 by 14 inches on the top to hold the water, and where the refrigerator is to be used indoors have the whole thing standing in a large pan to catch any drip. The pans and case may be painted white, allowed to dry, and then enameled. A covering of white Canton flannel should be made to fit the frame. Have the smooth side out and button the covering on the frame with buggy or automobile curtain hooks and eyes, arranged so that the door may be opened without unfastening these hooks. This can easily be done by putting one row of hooks on the edge of the door near the latch and the other just opposite the opening with the hem on each side extended far enough to cover the crack at the edge of the door, so as to keep out the warm outside air and retain the cooled air. This dress or covering will have to be hooked around the top edge also. Two double strips one-half the width of each side should be sewed on the top of each side covering, and allowed to extend over about 2 1/2 or 3 inches in the pan of water. The bottom of the covering should extend into the lower pan.

Place the refrigerator in a shady place where air will circulate around it freely. If buttons and buttonholes are used on the Canton flannel instead of buggy hooks, the cost will be reduced.

The feminine habit of dwelling on the good qualities of one's neighbor may be classed as an indoor sport.



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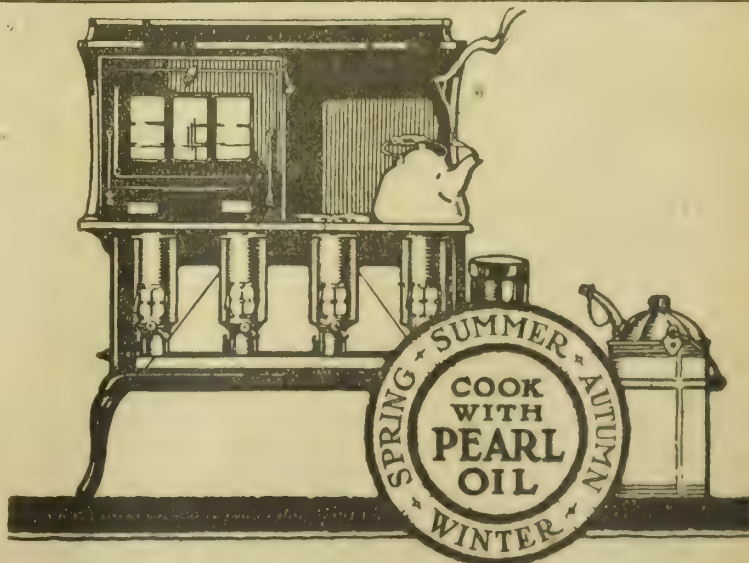
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2209 Westlake Avenue, Seattle

SAN FRANCISCO.

San Francisco, June 20, 1917.

WHEAT.

Scarcity of arrivals does not seem to accentuate values, which are weak, with declines in Northern Bluestem and Red. In Chicago a depression in values is reported to be due to the promise of heavy wheat crops throughout the country, and this doubtless has had a reflex action on this market. There is very little Russian Red left and that in the local warehouses is "pinched" and of very poor quality. It is practically unquotable. Summing up, the market here is listless and unstable.

Sonora wheat, re-cleaned.....None offered
Northern Club.....None offered
California Club, per ctt.....None offered
Northern Bluestem.....\$4.75@4.80
Northern Red.....4.55@4.60
Russian Red.....Nominal

BARLEY.

During the week there has been some speculation, causing a stiffening in values, and choice feed has advanced 5c. A partial reason for this sudden bracing up of the market may be the prospective Government demand for feed barley for the use of the cavalry. The United States Army is always a large buyer of barley in war time. Holders are cautious and unwilling to let go of their stocks.

Shipping, ctt.....Nominal
Brewing.....Nominal
Choice feed, ctt.....\$2.10@2.15

OATS.

Trading in oats is limited to transactions of a jobbing character. The attendance at the call board meetings during the past week has been so remarkably small as to indicate clearly the general apathy among traders usually dealing in oats. White feed is quotable at former prices, with no new crop offering as yet.

White feed, per ctt.....\$2.55@2.60

BEANS.

Calm pervades the bean market, and all lines remain unchanged. However, with old stocks dwindling in proportion, it seems inevitable that values will be on a higher basis before the arrivals of new crop. A considerable acreage is yet to be planted, some of which will be more experimentation on the part of comparative amateurs in bean-growing, a good deal of it planted on land altogether unsuitable for beans, the result of which will not prove to be a factor in the market. On Wednesday there was some call for red kidneys, causing a slight advance.

Bayos, per ctt.....\$10.50@11.00
Blackeyes.....9.25@9.50
Cranberry beans.....11.25@11.50
Horse beans.....5.50@6.00
Small whites (south).....15.50@15.75
Large whites.....15.50@15.75
Pinks.....10.50@11.00
Limas (south, re-cleaned).....13.75@14.00
Red kidney.....13.50@14.50
Mexican reds.....11.25@11.50
Tepary beans.....None offered
Garbanzos.....\$6.25@6.50

CORN.

Sales of Eastern yellow are being made for milling purposes, and the large purchases in the East for export, causing advances there, no doubt had the effect of raising values here. California corn was not able to bear up against a slackening of demand on the part of feeders, because of the extreme heat in the valleys making it undesirable for stock.

(First-hand prices on strictly first-class grain, San Francisco.)
Eastern yellow, per ctt, bulk.....\$3.30@3.40
California, sacked.....3.30@3.35
Milo Maize.....None offered
Egyptian.....3.75@3.90

HAY.

Receipts of hay for the past week amounted to 1,433 tons. Most of this amount has been old hay, placed at our market quotations. It is expected that the old hay will be entirely cleaned up during the coming week, with only new crop available. An occasional car or two of new hay has arrived, but not enough to establish a market basis. Harvesting is going on rapidly, and some little buying has been done. There is a wide range in prices paid in different localities, causing an unsettled situation that will take time for adjustment. So far the weather has been excellent for curing purposes, and the quality of the crop is good. Alfalfa of first cutting is arriving in moderate quantities and sells readily. No second cutting has appeared on the market yet, though some is expected shortly. There is likely to be no straw in the market for a month or two.

Wheat, No. 1.....\$27.00@28.00
No. 2.....25.50@26.50
Tame oats.....29.00@30.00
Wild oats.....Nominal
Barley.....\$25.00@27.00
Alfalfa, new first cut.....14.00@15.50
Stock hay, new.....10.00@12.00
Straw, per bale.....1.00@1.10

FEEDSTUFFS.

Continuance of the extreme heat in the valleys may be expected to cause a return of feeders to millstuffs, as the green feed is drying up rapidly. This will prove a boon to holders of feedstuffs, for prices have been gradually dropping. Bran, middlings and shorts have fallen off in prices considerably. Beet pulp, on account of scarcity, has advanced. No oil-cake, tankage or rice middlings are offered.

(Per ton, San Francisco.)

Beet Pulp, per ton.....\$38.00@40.00
Alfalfa meal, per ton.....30.00@32.00
Bran, per ton.....38.00@40.00
Oil Cake.....None offered
Coconut cake or meal.....\$28.00@30.00
Cracked corn.....72.00@75.00
Middlings.....49.00@50.00
Rolled barley.....45.00@46.00
Tencage.....None offered
Rolled oats.....\$53.00@54.00
Rice middlings.....None offered
Rice bran.....\$30.00@32.00
Shorts.....43.00@45.00

POTATOES, ONIONS, ETC.

There is quite a little shipping demand, which eases off the supplies, but local buyers are shy, on account of the prevailing high prices. Deltas are still offer-

THE MARKET REPORTS

Figures Given are Independent and Reliable.
Prices Quoted as Paid to Producers.

ing at former ruling prices, but there are no Salinas to be had. Oregon's are cheaper, as the call is mainly for new potatoes. The onion market is slow of movement and Delta reds have dropped in price. There is some complaint of the quality of shipments. Green onions are in heavier supply and cheaper. The old garlic is practically out and only new garlic is worth quoting. String and wax beans have improved in volume of receipts, but have declined in price correspondingly. Some fancy summer squash are arriving from the River which command as high as \$1.75 a lug.

Asparagus, per box.....\$1.50@2.25
Peas, per lb.....2@3c
String beans, per lb.....2@3c
Wax beans, per lb.....2@3c
Hubbard squash, per lb.....None
Summer squash, per crate.....50@75c
Cucumbers, per box.....\$1.00@1.25
Lettuce, crate.....50c@1.00
Celery, Delta, crate.....\$1.00@1.50
Tomatoes, crate.....\$2.00@2.25
Rhubarb, bay, per box.....75c@1.15
do, San Jose.....\$1.15@1.25
Potatoes, ctt, Delta.....3.25@4.25
Salinas.....Cleaned up
Oregon.....\$1.00@1.50
New, per ctt.....\$2.75@3.50
Sweets, per lb.....None offered
Onions, green, per box.....50@60c
Delta reds, new, per sack.....\$1.25@1.50
Bermuda (seed), per ctt.....1.40@1.60
Garlic, lb.....3@4c

POULTRY.

It is seldom a market is on such an even basis as this has been this week. Receipts of all lines have been moderate—just about enough to cover the demand. All lines are holding their own in value; and, unless arrivals increase very materially, no change in prices is to be expected.

Turkeys, live, lb.....20@22c
do, dressed, large, lb.....Nominal
Broilers, 1½ to 2 lbs.....23@25c
do, under 1 lb.....20@21c
do, 1½ lbs.....23@24c
Fryers.....28@30c
Hens, extra, per lb., colored.....21@23c
Small leghorn.....17@18c
Smooth young roosters, per lb. (3 lbs. and over).....30c
Old roosters, per lb.....12@14c
Geese, per lb.....19@20c
Squabs, per doz.....\$2.15@3.00
Ducks.....15@20c
Old.....17@18c
Belgian Hares (live).....14@15c

BUTTER.

Since the drop of last week, the market has reacted, and, advancing quickly, reached a maximum of 37½ on Tuesday, owing to very light receipts. Wednesday's call, however, found a decline of half a cent; and if the hot weather continues, further declines may be looked for. In hot weather the consumption of butter, especially extras, is less than during ordinary weather, and therefore the thermometer is at this time a factor in making prices. The Eastern market continues weak, allowing of no shipping there at a profit, and dealers are forced to depend on the local market.

Thurs. Fri. Sat. Mon. Tu. Wed.
Extras.....34½ 35 35½ 36½ 37½ 37
Prime firsts.....34 34½ 35 36 37 36½

EGGS.

Extras, extra pullets and extra firsts were off a trifle on Wednesday and a

weaker feeling was noticeable. Receipts of eggs are now at their highest during the laying season, and there may be some holding back until a stronger market develops. While the market is unsettled, apparently, there seems to be no reason to anticipate any decline of moment at this time.

Thurs. Fri. Sat. Mon. Tu. Wed.
Extras.....30½ 31 31½ 32 32 31½
Extra 1sts.....30 30 30 31 31 31
Extra pullets.....29 29½ 30 30 30 29
Ex. 1sts pul.....29 29 29 29 29 28½

CHEESE.

Young Americas have tightened up a half-cent since last week's quotations, but flats show a decline. There is no doubt that, owing to lack of export demand, the cheese market is weak. Transactions in the market during the last few days have been light.

Y. A.'s.....24c
Fancy Calif. Flats, per lb.....21c
Monterey cheese.....16@17c

DECIDUOUS FRUITS.

Reports from the valleys state that the unusual heat is scalding some of the fruit, and all varieties are ripening very fast. Cherries have arrived in such large supply that bulk cherries are quoted at a considerable decline from last week's prices. Some plums in crates are arriving, and fetch from \$1 to \$1.25. Green apples arrive in small quantities, but they are not enough to establish a quotation. Apricots, due to difference in quality, show a wider range in price this week.

Cherries, bulk, per lb.....4@7c
Royal Anne, per lb.....9@10c
Apricots, per crate.....\$1.00@1.50
Peaches, per crate.....1.00@1.25
Figs, per box.....1.00@1.50
Plums, crates.....1.00@1.25

CITRUS FRUITS.

The demand for citrus fruits has been so great lately that prices have gone "kiting." Lemons have advanced by leaps and bounds and fancies now sell readily at \$6 flat, choice at \$5.25, and standards as high as \$4. Dealers predict that they will touch \$7 within a week. In spite of larger receipts, Valencia's have stiffened up, influenced by the advance in lemon values. Navels fetch a little better prices, but the supply of them in the market is nearly exhausted.

Oranges:
Valencias.....\$3.25@3.50
Navels, fancy, per box.....3.00@3.50
do, Choice.....2.75@3.00
Tangerines.....1.75@2.25
Lemons:
Fancy, per box.....\$3.00
Choice.....5.25
Standard.....\$3.75@4.00
Lemonettes.....3.25@3.50
Grapefruit, fancy.....3.00@3.25

DRIED FRUITS.

Values in all lines register no change, owing to a lack of transactions. No weakness has developed, and apples are quoted as very firm, in company with apricots and peaches. Prunes are enigmatical, as no base price has yet been fixed by the Association, which plans to announce none until after July 1st. New dried apricots and peaches, should the summer be exceptionally warm in the valleys, may arrive here possibly a little earlier than September 1st.

Special Citrus Market Report

Los Angeles, June 19, 1917.

Shipments of citrus fruits from Southern California from November 1 to June 17: 29,942 cars of oranges and 5384 cars of lemons. Same time last year: Oranges, 24,155 cars, and lemons, 4583 cars.

Shipments from Central California from November 1 to June 15: Oranges, 4417 cars, and lemons, 164 cars. Same time last year: Oranges, 5390 cars, and lemons, 148 cars. The improvement in the eastern markets noted in our last review was maintained throughout the past week.

While the receipts were very good both of miscellaneous varieties and valencias that are now going forward more freely, the trade took them at good prices. The light arrivals of deciduous fruits east owing to the backwardness of the season helping the citrus market out. Lemons showed less life than oranges, the cold weather east being against the market for them. Still a fair demand was reported and prices were held steady with a week ago. The local market sympathized to some extent with the situation east, though prices here showed no improvement. A little better movement was had in all choice fruit, however. Lemons under

the very hot weather were more active than for some time, but prices unchanged. Local packers are still paying 1½¢ per pound for navel and miscellaneous oranges and 1¼¢ per pound in the grove, picked. Grapefruit still slow sale at 1¼¢ per pound in the grove, picked. Lemons, while meeting with a better demand, sold no higher as stocks on hand were good owing to the dullness of the market of late. Packers buying fairly and paying 1¼¢ per pound in the grove, picked, for the best of them. Poor stock has to be sold for what it will bring.

AUCTION SALES.

New York, June 13.—Fifty-one cars oranges and three cars lemons sold. Orange market strong and higher, especially small sizes. Lemon market unchanged. Weather fair. California navels averaged \$1.80@4.05. Valencias averaged \$2.45@4.45. Lemons averaged \$2.10@4.05.
Boston, June 13.—No market, holiday.
Philadelphia, June 13.—Fourteen cars sold. Market strong and higher on oranges; lower on lemons. California navels averaged \$1.80@3.10. Valencias, \$3.10@3.35. Lemons averaged \$1.30@4.10.

THE 1916 DRIED FRUIT CROP SOLD.

The announcement is made by the California Associated Raisin Company of the complete disposal of the 1916 crop of raisins. The peach growers' organization reported some weeks ago that all dried peaches were sold, and it is known that practically all apricots, prunes and pears have been marketed. California will produce large crops of all the above fruits this year, and prices are expected to be high. So far but little buying has been done, owing to the uncertainty occasioned by the war. Some orders for 1917 crop are being accepted by the various growers' organizations, subject to price to be fixed later. We learn that canners are paying \$75 per ton for apricots in the Santa Clara Valley, and a few lots of prunes have been purchased by brokers at about a 7c basis.

(Net to growers, bulk basis, f. o. b. shipping point.)

Apples, new crop.....9@9½c
Apricots, per lb.....16½@16¾c
Figs, black, 1916.....8c
do, 1917.....5½@6¼c
do, white, 1917.....8@8½c
Callimyrna, 1917.....9@10c
Prunes, 4-size basis, 1917.....6½@7¼c
Prunes, 1916.....8½@9c
Pears.....8@10c
Peaches, 1917.....8½@9½c

BERRIES.

Strawberries have improved in value from \$1 to \$2 per chest. Blackberries have also advanced, but this is probably a temporary advance only, and cannot be regarded as a basis. Raspberries, loganberries and gooseberries have been arriving in large lots and indicate a weaker tone, although unchanged in quotations.

Strawberries (per chest).....\$3.00@3.00
Longworths.....7.00@9.00
Blackberries, crate.....1.00@1.25
Raspberries (per chest).....8.00@12.00
Loganberries, chest.....4.00@5.00
Gooseberries, lb.....7c

LOS ANGELES.

Los Angeles, June 19, 1917.

BUTTER.

Receipts of week ending June 19.....319,270
Receipts of same week last year.....273,820

There was a fair movement of butter this way the past week and the receipts ran noticeably heavier than this time last year. But with a fairly good consumptive demand and excessively hot weather and high price of feed, prices were kept fairly steady, though Eastern markets remained low and at figures that shut out shipments to those markets from the Coast, confining the market to home buying and the northern trade. Cold storage stocks here, June 14, 1917, were 205,342 pounds, against 198,136 pounds the same date last year, an excess of only 7,156 pounds. There was taken into cold storage, for the week ending June 14, 27,164 pounds, against 58,700 pounds the same week last year, showing that the trade is taking a bigger percentage of the receipts than this time a year ago.

We quote:
California extra creamery.....37c
Prime first.....36c
First.....35c

Daily quotations:
1917— Wed. Th. Fri. Sat. Mod. Tu.
Extra.....37 36 36 36 36 37
1916—
Extra.....27 26 26 25½ 25 25

RUBB.

Receipts (railroads) for week ending June 19, 1917, 3,045 cases.
Receipts (railroads) for week ending June 19, 1916, 2,452 cases.

Receipts continue moderate and, with a fair consumptive demand, prices the past week held steady. Even at the present high prices, eggs are as cheap as meat, which helps the market. The cold storage stocks here, June 14, 1917, were 76,547 cases, against 60,869 cases the same date last year, an excess of 15,678 cases compared with a year ago. There were taken into cold storage for the week ending June 14, 1,792 cases, against 3,103 cases the same week last year, showing that the trade is taking a greater percentage of eggs that are coming in than this time last year and there is less inclination to store eggs at present high prices.

Daily quotations:
1917— Wed. Th. Fri. Sat. Mon. Tu.
Extra.....33½ 33 33 33 33 33
Case count.....32½ 32½ 32½ 32½ 32 32
Pullets.....30½ 30½ 30½ 30½ 30 30
1916—
Case count.....24 24 24 24 22½ 25

VEGETABLES.

A slow market was had the past week for most vegetables. Receipts were good and the weather very hot and shippers did little. Peas and beans were in liberal supply and dull. Cabbage was off again and demand very light at the decline. The shipping demand has dropped next to nothing and the home trade is taking but little. Summer squash is in liberal supply, slow sale and lower, and the same may be said of cucumbers. Lima beans in fair demand, but cheaper. Okra has begun to arrive, but is selling slowly. But little corn coming in and it continues high. The best is in fair demand. Tomatoes selling fairly well, but market a little weaker. Onions are dull and lower. New potatoes coming in more freely and market lower. Demand fair at the prices.

We quote from growers:
New potatoes, per cwt.....\$2.00@2.75
Peas, per lb.....3¼@4¼c
New onions, silver skins and Ber. munda, per crate.....\$1.00@1.15
String beans, wax, per lb.....4½@4¾c
do, Kentucky Wonders, per lb.....4½@4¾c
Imperial tomatoes, 4-bskt crate, \$1.50@1.60
Cucumbers, per box of 2½ to 3 dozen.....40@50c
Green corn, lug.....\$1.00@1.25
Cabbage, per 100 lbs.....60@65c
Lima beans, per lb.....5½@6c
Okra, per lb.....6@8c

BEANS.

The planting season is about over and there was very little demand the past week even from growers and holders were inclined to shade prices.

We quote from growers:
Limas.....14½c
Large white.....15c
Small white.....14½c
Pinks.....11c
Blackeyes.....10½c

HAY.

Market quiet, but prices unchanged. Buyers, both in town and out, are holding back and buying only for immediate wants. Alfalfa is moving a little better than grain hay, though both are slow of sale.

We quote f. o. b. Los Angeles:
Barley hay, ton.....\$19.00@21.00

Oat hay, ton	20.00@22.00
Alfalfa, Northern, per ton	17.00@18.00
Alfalfa, local, ton	19.00@20.00
Straw, ton	11.00@12.00

FRUITS.

All choice stock in good demand. Peaches and apricots are coming in freely, and under the influence of increased offerings prices dropped during week. Cherries are arriving more freely and market a little lower, though demand very good at quotations. No figs on the market. A few beauty plums were in during the week and they sold in a fair way at 5@6c per pound. A few Malaga grapes were in from the Imperial Valley. They sold slowly at \$2.00@2.25 per four-basket crate.

We quote from growers:	
Avocados, per doz.	\$4.00@5.00
Cherries, black Tartarians, per lb.	9@12c
Royal Ann	10@12c
Soft White, per lb.	5@8c
Gooseberries, per lb.	6@7c

Apricots, per lug	\$1.25@1.40
Peaches, local, per lug	90c@1.25
do, Northern, per lb.	5@6c

BERRIES.

There has been a sharp advance in all berries this week. The intensely hot weather the first half of our review week cut the crop short and lowered the quality of berries. Demand fair for all acceptable fruit.

We quote from growers:

Strawberries—	
Poor to choice, 30-basket crate	\$1.40@1.50
Fancy, 30-basket crate	2.00@2.25
Blackberries, 30-basket crate	1.40@1.50
Raspberries, 30-basket crate	1.40@1.50
Loganberries, per case	1.25@1.35

MELONS.

Cantaloupes have commenced to arrive in car lots from the Imperial Valley and the quality is good. They are selling very

well at last week's prices. Watermelons are arriving more freely and the quality of the receipts improved.

We quote from growers:

Cantaloupes, Imperial Valley, stand-ard crates	\$3.75@4.00
do, Pony crates	3.00@3.25
Watermelons, per 100 lbs.	2.00@2.25

POULTRY.

A dull and lower market was had the past week. There was a rush of young stuff in and a falling off in the demand. Broilers and fryers declined 2c and sale slow. Light hens were also dull and lower. Heavy hens scarce, firm and in fair demand. Ducks and turkeys slow sale, but unchanged.

We quote from growers:

Broilers, 1½ to 2 lbs.	21@22c
Fryers, 2½ to 3 lbs.	22c
Hens over 4 lbs.	21c
Hens under 4 lbs.	13@14c
Ducks	17@18c
Geese	15c
Roosters, 3 lbs. up (soft bones)	25c
Turkeys, heavy, 12 lbs. and up	20@30c
Turkeys, light	24@25c
Squabs, live, per doz.	\$1.50@3.00
Dressed	3.75@4.85

HONEY AND BEESWAX.

The very hot weather Thursday, Friday and Saturday of last week brought the season for white sage honey to a close for the season in Southern California, and it is said the crop will not be over half.

We quote from growers:

White orange, extracted, per lb.	13½c
White sage, extracted, per lb.	12½c
Light amber sage, extracted, per lb.	9c
Light amber alfalfa, extracted, lb.	8½c
Beeswax, per lb.	32½c

SACRAMENTO.

DAILY DECIDUOUS FRUIT SHIPMENTS

Sacramento, Cal., June 19, 1917.	
1916	1917
Cherries	9%
Apricots	13
Peaches	63%
Plums	143%
Pears	¼
53%	44½
Total shipments to date	531½
Total shipments same date, 1916	1190½

Publisher's Department.

"I would not be without the Rural Press for five times the subscription price." S. H. Storey, Kern county.

Has Read It for Quarter Century.—I began taking the Rural Press in 1892 and have found it the best of all publications upon the subjects of which it treats. I would never willingly be without it.—John D. Bliss, Pozo, Cal.

The Rural Press is gaining in circulation steadily, and to be of the largest value to California agriculture must continue to increase. To make faster growth we need more field men. Two good solicitors are wanted at once to cover sections now ready. If you know of a good, live man, anywhere from 30 to 60 years of age, who has an auto and can sell papers, who would like to earn some of our money, kindly write us at once.

More than 300 new paid subscribers were added to our subscription list last week, thanks to an efficient, energetic and enthusiastic field force. May their shadows increase! The Rural Press is gaining very fast these days and every member of the office as well as field force is watching with keen interest every gain that is being made. We are looking forward to the time when the war will be over and conditions normal, that we can again use a good quality of book paper, that we may take a greater pride in our work. The large gains we are now making will enable us to issue a better paper and give better service.

The area irrigated in the Sacramento Valley and adjacent foothills last year aggregated approximately 300,000 acres. The area irrigated in 1912, according to the best available authority, was 168,000 acres, so that the area actually irrigated in this valley is comparatively small, amounting to 10 per cent of the area irrigated in the State, recent progress has been quite rapid.

Special Livestock Market Report

San Francisco, June 20, 1917.

CATTLE.—Cattle are not being offered quite so freely, with indications of a stronger market within the next two or three weeks. The shortage of good beef stuff appears to be due, largely, to the drain made on California's cattle supply for outside markets. Calves are arriving in fairly good numbers, and so nearly meet the demand that prices are not appreciably affected.

Grass Steers—	
No. 1 weighing 900@1200 lbs.	8½@8¾c
No. 1 weighing 1200@1400 lbs.	8½@8¾c
Second quality	8@8¼c
Thin undesirable	6½@7½c

Grass Cows and Heifers—	
No. 1	6¾@7c
Second quality	6¼@6½c
Common to thin	6@6¼c
Undesirable	4@5c
Hay-fed Cattle ½@¾c higher.	

Bulls and Stags—Good	6c
Fair	5½@5¾c
Thin	4@5c
Calves—	
Lightweight	9¼@9½c
Medium	8¼@8½c
Heavy	7@7¾c

SHEEP.—There is still a shortage in the receipts of good mutton stock, local demands not being fully met. Much stuff is shipped to outside markets, which explains in some measure the shortage in California. The severe weather of the past winter materially reduced the season's crop of lambs both in California and in adjoining states. Then, too, the insistence of the Government on growers to save all their ewe lambs for breeding purposes is having its effect.

Lambs—	
Yearling	12@12½c
Milk	12@12½c
Sheep—	
Unshorn wethers	11c
Unshorn ewes	10c

HOGS.—Hogs are steady on the recent decline. There are some indications of a further break in the market—probably next week.

Hard, grain-fed, 100 to 150	13c
Hard, grain-fed, 150 to 300	14½@15c
Hard, grain-fed, 300 to 400	14¼@14½c

DRESSED MEATS.—Dressed meats are in normal supply. Scarcity of feed has forced on the market many animals not in good marketable form. Prime carcasses, which are not plentiful, bring fancy prices.

Steers, No. 1	13½c
Second quality	12½@13c
Cows and Heifers	11@12c
Calves, as to size, etc.	12@14c
Lambs—Suckling	20c
Yearling	19c
Sheep—Wethers	18c
Ewes	17c
Hogs	20c

WOOL.—There is not much doing at the present time in California, the active buying season having passed some time ago. Prices have soared since most of the clip passed out of the growers' hands. It is believed by those on the inside that the upward tendency has not yet reached its limit.

Los Angeles, June 19, 1917.

CATTLE.—In sympathy with the markets east the tone of the market here the past week was rather firm. While feeders were inclined to be independent, killers here refused to bid prices up in the face of a light demand for beef, and there were

North Portland, Ore., June 18, 1917.

BEEF STEERS.—There was an active market in the beef steer division with 25 to 55 cents higher basis, the first real upturn market we have had here for about a month. There were real fancy steers in the run outside of one head going at \$10.50, a string of good California steers sold at \$10.00, fair to good kind \$9.25 to \$9.50, ordinary to medium grade got biggest advance, ranging from 25 to 55 cents, there was an excellent demand for all steers and the run was quickly absorbed.

BEEF CATTLE.—The general trend of the trade was steady, although killers were not wanting cows, they being relatively the cheapest cattle, everything here was ordinary with only a few good quality ones getting from \$8.25 to \$8.75. There was a small supply of bulls with light demand, stags sold up to \$8.50, calves were unchanged with only a few head.

STOCKERS AND FEEDERS.—Country call slack, with only a few head offered and prices generally unchanged, getting \$8.25 to \$8.75.

HOGS.—There was the smallest Monday run for years, demand still lacking with killers not wanting many, one fancy load brought \$16.25, the extreme top on all good hogs seems to be \$15. Prices unchanged with bulk of sales at \$12.

SHEEP.—The sheep market is generally unchanged, with only a few head here; quotations are: Spring lambs, \$13.25@ \$13.50; shorn year., \$8.00@ \$10.50; Shorn ewes, \$7.00@ \$9.00.

A DEMONSTRATION OF INCREASING POULTRY PROFITS.

[Written for Pacific Rural Press by Geo. H. Croley.]

In the issue of the Rural Press for May 19, 1917, we advised poultry keepers to "keep cool—that poultry keeping is still profitable." The following from a report of I. N. Foss, manager of the Tulare Co-operative Poultry Association, dated June 3, based on actual transactions of that association, emphasizes the correctness of the statement then made: "There is absolutely nothing to the far-flung cry of 'Sell the hens, for they cannot be made to pay with feeds where they are now.' As a matter of fact, the henman has nothing to kick about. The henman who mixes his feeds with brains is making more money on his May, 1917, eggs than he did on his May, 1916, eggs. [May, 1917, recorded highest feed prices ever known.—Ed.] This statement is based on cold facts and correctly given prices as shown on the records of the Tulare Association. While it is true that in the year the prices of wheat and corn have more than doubled, the price of hen feed, properly balanced and varied, have not anywhere near doubled. The May, 1917, eggs netted nearly three cents more profit than in May, 1916. The general trend is to increase the number of poultry and to plan for larger work. There never has been a time when chix have been started in such numbers as this year. The United States monthly report, just issued, shows that the producers of the entire country are receiving 32 per cent more for their poultry than a year ago, while they are receiving 65 per cent more for their eggs."

Points that make

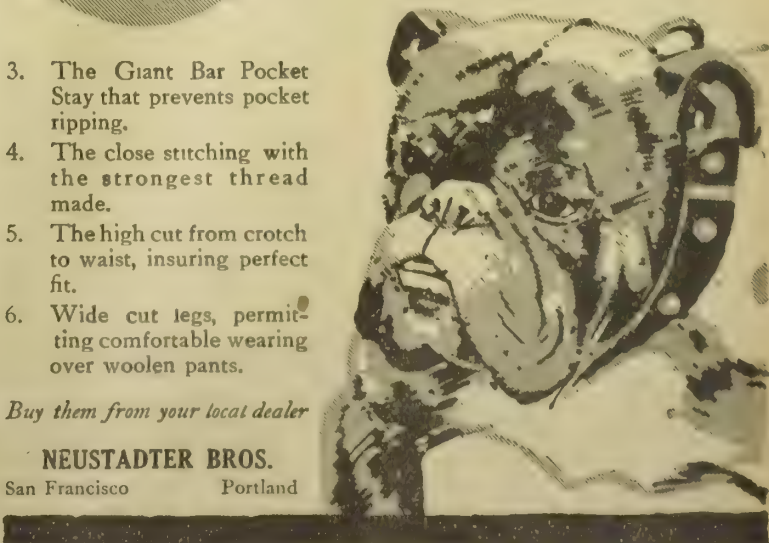
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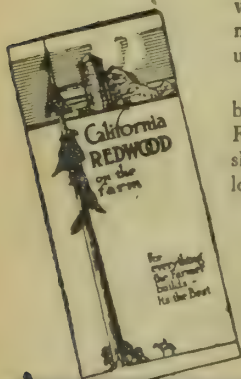
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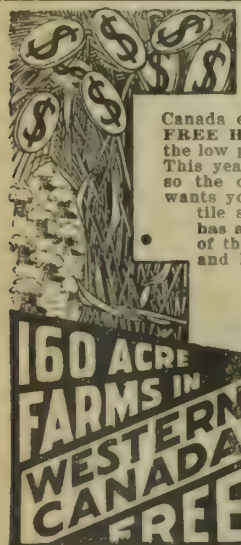
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The Government this year is asking farmers to put increased acreage into grain. There is now a great demand for farm laborers to replace the many young men who have volunteered for service in the war. The climate is healthful and agreeable, railway facilities excellent, good schools and churches convenient. Write for literature as to reduced railway rates to Supt. of Immigration, Ottawa, Canada, or to

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THE PACIFIC RURAL PRESS

SAN FRANCISCO

JUNE 30, 1917

LOS ANGELES

Holsteins and Vetch Restore Wornout Ranch

[Written for Pacific Rural Press.]



WHEN R. F. FISHER came back from the Orient and bought his present Humboldt county ranch, four years ago, he found himself too weak to pitch hay like a man; he knew little about farming; he found that his ranch had been mostly cropped to oats for fifty years, and that it had become tired of yielding crops without return. The soil would all run together and cement. One field was worked over fifteen times before the crop could be put in decently. When that crop was mowed, the mower could scarcely get around among the clods.

Some of it is still in bad condition, for not everything can be done in four years, but most of it is producing rich crops, and Mr. Fisher can pitch hay or green vetch with the best of them. When he plows the improved part, it breaks to pieces in turning over, full of vetch nodules.

Two lines of action, startling to his neighbors, were laid out and have proved their efficiency in restoring the land to glad production. It didn't take long to figure out the need of cows to furnish manure and to eat the crops which are of necessity too bulky and heavy to haul the long distance up and down hill to town from this ranch.

He bought cows of the prevailing mixed breeds a year after moving onto the ranch, and last fall he bought half a dozen massive Holsteins at the Morris-McAlister sale, besides a couple of heifers and a bull from M. Holdridge of Modesto. A couple of purebreds bought locally were soon consigned to the butcher, for they never tested above 3 per cent and averaged 2.6 per cent. He learned that it is well to know the production of even purebreds before buying them, except in case of heifers, where dairy type and record-making ancestry must decide.

Holsteins were chosen because they appealed to him as the largest, most efficient milk-makers, and because the bull calves are good for veal. He has some fine specimens of veal on the ranch at this writing.

While there are about 100 acres under cultivation, only 18 or 20 are eligible for pasture, and "I can get more out of that by cutting for green feed," says Mr. Fisher.

COWS KEPT IN CORRALS.

The cows are not pastured at all, for two reasons. The manure is saved for the fields needing it most, and the fields yield more feed. Cows are kept in the barn all winter, turning them out twice per day for water. During the rest of the year they are milked in the barn but kept in one or more of three small corrals, where green feed is given in racks while it lasts, and silage furnishes succulence in the driest part of the season. After late July there is nothing green except a cutting or two of alfalfa and clover, until fall rains. A small hay rack load of green feed (probably over a ton) is enough for the entire 25 to 30 cows, 7 horses, and the young stock which may not be running loose on the scant hillside. Coconut meal has been added to the ration the past year, and brings good results.

THREE-ACRE MANURE EXPERIMENT.

Three acres of oats and vetch kept all of the stock supplied with two big loads of green feed per day for 29 days this spring. It is cut once

per day and gathered at the two feeding times without attempt to make or prevent it from wilting. The first cutting was finished April 17. The second cutting was half finished when seen early in June.

Mr. Fisher finished pulling old apple trees from this three acres two years ago, except on one corner. He manured all but the corner and grew a crop. Last November, after the first rain, he sowed 75 pounds Oregon vetch seed mixed with 75 pounds of oats per acre on the whole piece, after taking the apple trees out of the corner. No manure was put on the piece last fall. This June, at the second cutting, as we labored through thick vetch half way between knees and hips, it was a distinct relief to step into the scant, short-grown, sickly growth which had not been manured the year before. The first cutting had been largely grain, the second cutting was mostly vetch. Various quantities of seed have been tried, resulting in the above heavy rate of seeding.

On another wide strip across the same large field vetch and oats were planted up to a straight line two years ago. Last season, when our representative looked at this field, the oats were fairly good, but there was scarcely any vetch. Last year's vetch, however, inoculated the soil so that when seen this June vetch was a very thick stand over knee-high and oats not yet headed out. Mr. Fisher said that in two weeks the oats would be headed and would hide the vetch. Then two weeks later the vetch would hide the oats. Some of this would be cured for hay, which cattle prefer to alfalfa. Stems 7 or 8 feet long, with pods along about 30 inches, would be eaten up clean even though partly rotted by lying on the ground.

SILAGE AND ALFALFA.

Vetch and oats make the best silage, cutting when the oats are in the dough and the vetch has many pods with seeds started. But a man is required to swath it away from the mower, and it is hard to

handle. Corn has been grown three years, planting it far enough apart so it will make grain. Alfalfa has been grown with surface pipe irrigation and without it, and a piece is now being leveled for alfalfa so it can be flooded.

HANDLING THE MANURE.

Manure is hauled about once per week to the fields. The corrals are cleaned with a Fresno scraper and the barn floor and gutter are water tight. A manure carrier makes cleaning easy. The manure must be piled for awhile in the spring, but the rest of the year there is usually a field ready for it when made.

FALL FRESHENING OF COWS.

Dairymen generally admit the extra profit in having cows come fresh in the fall, but few of them do so because the weather is bad for the calves, ordinary alfalfa is not growing much, and pastures are generally too soft to permit the trampling of stock. Mr. Fisher has demonstrated by cow-testing records that fall-freshened cows, cared for by his system, produce more milk and butterfat, which sells at a higher price per pound. "But you can't get maximum butterfat or veal by turning cows and calves into the mud and rain of winter. They must have proper shelter and a generous supply of nourishing feed."



The above is an excellent picture of the grade Holstein, Alice, owned by F. Stenzel of San Lorenzo, which made the phenomenal record of 102.858 lbs. butterfat (approximately 120 lbs. butter) in the 30-day test made in the State Dairy Cow Competition for May, 1917. The scene below represents a herd of Holsteins owned in Yolo county, where the breed is becoming increasingly popular.



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EDITORIALS

MONEY AND PELF.

ODDLES of money are running loose in this country and the greatest commercial and financial question is: Will those get it who have earned it? All authorities agree that the streams of wealth which are now beginning to burst forth from our resources and industries will surpass in speed and volume anything known in our history. This is the case for the whole country and California will surely be in the rush and scramble for all she is worth. Nearly seventy years ago California made the world's record in outpouring of gold, which had much to do in unsettling world's values by the volume of it. Today California is experiencing an inpouring of gold, in exchange for products, which is ten times as great as her greatest outpour of it, and in so doing California unsettles nothing and helps everything. The question, then, is, Will this gold go to those to whom it rightly belongs? Will it be money received in righteous exchange of value for value, as money rightly should be, or will it be pelf—which the dictionary says is "money in a bad sense"? Pelf, then, is money heaped up by those who have no just claim to it: money exacted by speculation, by greed, by conspiracy to avert, divert and pervert prosperity from those who have earned it by investment and industry in producing something which the world now urgently needs. Mr. Hoover said the other day that fifty million dollars a month had been stolen from producers and consumers during the period of uncurbed speculation and greedy hoarding. It was of course a guess at the amount: he might have said five hundred millions as a total, for, if such an amount has not yet been stolen, it soon will be if things are allowed to go on a little longer. As we write on Tuesday, Congress has not decided upon its enactment to insure profitable return to actual producers and fair prices to consumers, but there seems no longer reason to doubt that it will provide effective regulation. The emergency is recognized as unprecedented and the cure for it must be of like character. If the billions to be expended in this country are allowed to go for "pelf," our great nation may not only lose the war for humanity abroad but lose its own freedom at home by the creation of an aristocracy of pelf which will be worse than any overlordship of diplomatic and military ambition can be. We remember the "shoddy aristocracy" which unchecked greed created toward the close of the Civil War, half a century ago. It was about as bad as it could be, considering its size, but the preponderating vigor and righteousness of the young nation encysted and overgrew it. Since then, however, greed has learned new warfare. It has dug trenches to our social foundations and built submarines to pollute unseen the deepest waters of patriotism. In this way American plutocracy may become worse than European autocracy, because a seared conscience is more serious than a lame back.

PROTECTION AGAINST PELF.

IN VIEW of the approaching tornado of wealth which will encircle this country, it is vitally important that we should have protection against "money in a bad sense." The danger of perversion of the national conscience and of robbery of the multitude by the few is far greater than ever before in our national experience. We have come to talk confidently of billions with less concern than our fathers hesitatingly mentioned millions. We have to thank the war for the fact, however, that the national conscience is correspondingly more keen now than then, and therein lies the hope that the nation will escape what seems to us its greatest peril. We have slept during the last few decades when the menace of colossal fortunes, amassed in opposition to the public interest, has been growing. We were so drowsy that probably nothing less than the thunder of great guns on the land and in the air and sea could have awakened us to the rights of man to liberty in life and work and to the enjoyment of the full products of his labor. It is the war which has awakened a demand for immediate protection against economic and industrial wrongs in this country and creates hope for the future. How keenly we are awake is shown by a transaction in the House of Representatives at Washington last week. A member from Iowa introduced a substitute for the bill then pending which, instead of delegating food control powers to the President and a food administrator, merely made it a penal offense to hoard, monopolize, unlawfully enhance the price of, speculate in or interfere with the production and transportation of foodstuffs, fuels and "other necessities of life." The substitute was defeated viva voce, as it only received a few scattering votes in its favor. Subsequently the House showed its attitude toward the great question by passing the food control bill by a vote of 365 to 5. The remarkable awakening is shown in the fact that the substitute, penalizing food gambling, hoarding and monopolizing, would a few months ago have been looked upon as so radical that it would have been impossible of passage. At that time it would have satisfied even the most progressive foes of "cornering" as a first step in the right direction, but now it is scouted as too weak and remote even by those who would then have opposed it as radical and revolutionary! Surely "the world does move" and the war has started the movement. All the lives and all the billions which this country will expend in the war to save democracy in the world will not only do this service for the world but will fit the United States the better to lead democracy in the world.

GREAT WHISKEY WASTE ARRESTED.

IT IS NOT possible to say what has really been gained by the overwhelming vote in the House of Representatives, for, as we write on Tuesday, the whose question is in the Senate and is expected to stay there until the end of the week, if not longer. It is believed the final vote in the Senate will be overwhelmingly favorable, like that in the House, but the opponents have their rights of tongue and technicality which the constitution grants them, and they must be heard and seen, though they are in violent conflict with the popular will. One great thing seems to have been gained and that is that food grains will not be wasted in the manufacture of hard liquors during the war at least—how soft liquors will stand affected is still doubtful. In this matter the House stood firm for prohibition in these words: "No person shall use any foods, food materials or feeds in the production of alcohol or of alcoholic beverages." The House rejected the amendment which allowed the President at his discretion to regulate the use of food in alcoholic manufacture. So far as we have seen outlines of the debate, the strength of the affirmative was on the saving of food from distillation. The other line of attack on hard liquor as an agency which prevents the full production of foods is being forcibly carried by the California Farmers' Protective League, which is actively engaged in securing the enforcement of all existing laws which limit the sale and forfeit the license to sell in order that the perversion and degradation of men engaged in farm

labor may be minimized. Such impeachment of the existing liquor traffic is being pushed in all the wet counties. It is a process of back-firing which will increase farming security and larger production. It will prevent making good labor bad and bad labor worse and should command the co-operation of all employers.

LABOR'S GRAND OLD MAN.

BUT THESE ponderous impersonalities sit too heavily on our pen: we must seek relief in gossip. If we had less respect for the cause to which Samuel Gompers is giving his closing years, we might call him the "foxy grandpa of the labor unions." As, however, we do have great respect for the cause and great admiration for the way Mr. Gompers serves it, no title less than "grand old man of labor" will satisfy our printed conscience. For Mr. Gompers has sat in his offices in Washington since the American Federation of Labor (which he organized in 1882) wisely established itself in the national capital. He has sat there as puissant president of labor while a whole procession of national Presidents has passed before him and to all these fleeting personages he has given advice and consolation in all their troubles—political and otherwise. In him organized labor has had for all these years a voice which the highest in the land have listened to—whether the subject it desired to present was one of international law or the proper wage for an hour of overtime by a printer's devil. And we have admired Mr. Gompers as a man who, through all these years of action in national affairs, has always commanded respectful consideration by statesmen and politicians, by economists and sociologists, by magnates and minimists, to the end that the voice of labor shall be heard and the point of view of labor recognized. And in all that time, so far as we have heard, while standing between two great sources of wealth, he has never helped himself with one hand or the other by selling the favor of either. And such a man, trained to look on both sides of all questions and to endeavor to be just, said this on Saturday last:

The food pirates have for months been diligently profiting through the needs of the people. Speculation has forced prices and food riots have already happened in this rich country. Today speculators are trying to buy up crops before the plants are out of the ground. Speculators gamble on human needs. By creating human want, these ghouls expect to coin enormous profits. Should our Government fail to establish control before crops move to the elevators and market, the success of the war and the cause of human freedom for which the allies contend will be imperiled.

And we remark this, of course, not alone for the truth there is in it, but for the fact that the speaker lifts the voice of many millions of citizens who are organized for the purpose of having their views expressed in a masterly way. The words are almost identical in import with those carried to Washington by a delegation of farmers of the Northwest, as noted in our issue of June 9. And that delegation, hurriedly gotten together, hastily spake and scuttled for home, leaving the speculators possessors of the field. Not so the labor organizations: they have their great, trained man entrenched in the national capital, ready to shell out of their camps all who come to make cause against their cause. Surely agriculture has something to learn from labor.

RUCTION IN THE FARM LOAN BANK.

WE HAVE known for some time that all was not running smoothly in the farm loan bank at Berkeley, but have refrained from speaking of it because we had hoped it would prove only a honeymoon spat among people who were trying to adjust themselves to new relations. In the nature of things a bunch of people trying to do things in agriculture and banking, without much previous experience in either undertaking, might be expected to run amuck. So far as the conflict is, or has been, personal, we know nothing of it and have heard nothing beyond what is said in the Chronicle of this Tuesday morning, and therefore can add nothing to the understanding of that phase of the matter; and in fact we doubt if there is much of public importance in it. As, however, we have been discussing with our readers for several years the principles and prac-

tices of rural finance which this bank has been charged by law with putting into operation, we feel impelled to urge all who are expecting to make loans at the bank to believe that the troubles, which many papers are likely to exploit, do not at all impeach the principles which the institution was expected to embody in its work, nor indicate that the administrative methods which the law directs it to employ are in any way untrustworthy or impracticable. Therefore, we are quite sure that the teapot-tempest which may be raging in the local directorate, if the Chronicle is right in its report, does not reflect at all upon right ways of doing things, but may perhaps put a check on wrong ways, and the sooner that is done the better. Apart from personal disagreements, of which, as we have said, we know nothing, we have an idea that the chief source of trouble has been in the appraisal of the property upon which loans were to be made—not less than 50 per cent of the value of the land and 20 per cent of the improvements. The plan of making the local loan associations appraisers of the property without giving time enough to inform the members fully what the nature of that appraisal should be and that the appraisers, as themselves borrowers and stockholders, are liable for over-appraisal, was a mistake in administration, due apparently to too great pressure for speed in getting money into borrowers' hands, and this may have been in some measure a political purpose. At all events, the president of the Berkeley bank is credited with saying that "ninety per cent of the 6,000 applications which had been prepared before the local bank was opened had to be re-written." We presume the fact was that the local appraisers, with no appreciation of the

wrong and danger in over-valuation, had put down each other's property at prices which would shock the conscience of even an experienced real estate. They probably appraised property as if for a sale to a wide-eyed customer and not as security for a loan. If this was the fault of the speed of the Farm Loan Board, which made it impossible for individual self-appraisers to understand what they should really have done, the fact did not reduce the strain on the directors of the local bank when they were called upon to push out money speedily on appraisements which the board itself could not approve, as the law provides. If this is a correct diagnosis (for we have to trust to insight and not to observation in making it), then one can see that the local directors fell heir to a lot of trouble and the fact that they have only loaned \$145,000 so far, out of the millions they were expecting to dispense by this date, is not only an indication of their perplexities but good evidence that no wild-cat business is being done. On the whole, it seems to us that those interested in getting loans should not be depressed overmuch by the reports of conflict which are current about the Berkeley directors. Some of them probably have to learn their jobs and it is not at all sure that they have been furnished with the right tools. It is quite possible that they are trying to substitute category and tabulation for expert personal sight and judgment of the adaptation and capacity of the land offered as security. We are not saying the Berkeley bank is all right, for that we do not personally know—we are simply advising our readers not to consider it all wrong, as the current reports of troubles and conflicts might induce them to do. And they should also remember that politics never die—even in war times.

the worms attack the fruit, mining usually near the surface around the stem end. This insect was formerly considered a great pest, but it is so easily controlled that growers have less respect for it. The cure, which is very complete, is to spray just as the buds are swelling and before color shows in the bloom buds, with lime-sulphur, winter strength, and applied with good force, especially to the forking of branches of medium and small size, for the insect hibernates in the roughness of the bark at such points. As the insect wakes up and emerges with the same temperature which causes the buds to swell, it is easy to know the time to spray and to kill the pest before the point of noticeable injury.

Dwarfing Cherry Trees.

To the Editor: Have dwarf cherries ever been tried in California, and, if so, the results—not judged from the commercial standpoint? The query arises from the desire to plant, with the view of securing early bearing trees. There do not appear to be any nurseries in California with dwarf cherries for sale.—F. D. T., Berkeley.

There is no dwarfing stock recognized for the cherry as, for instance, the quince stock is for the pear. Relatively, however, a cherry on the mahaleb root makes a smaller tree than one growing on the mazzard root, which is chiefly used as a stock for cherry trees in this State. You may find some varieties of cherries on the mahaleb root in California nurseries, but the growth will not diminish to your idea of a dwarf tree. The best way to get cherries low down for garden delights is to get a tree from the nursery with the lowest start of laterals you can find, or cut back the stem a few inches from the ground, and then train the branches horizontally on a trellis (espallier of the French), pinching back all shoots which start upward, leaving only a bud or two to make leaves and fruit spurs later. By doing this and encouraging growth from the tips to continue branches horizontally, and by continuing this summer pinching, you will hasten fruiting and have your branches, ere long, thickly set with fruit clusters—a beautiful object at the cost of a lot of work.

The Black or Buffalo Gnat.

To the Editor: I am moved to ask for information relative to the little carnivorous insect locally referred to as the "black gnat." If it were left to me to designate the critter, I would say that "hydrophobia gnat" would be more appropriate. He may not be affected with rabies, yet I go mad whenever he bites me. He must belong to the order Satani-cus, rank Infernalabus, and as genius to bite you when and where you are unable to lay hands on him he is unequalled. Any information as to where he comes from and where he goes, and any method whereby one can safeguard his rights as a citizen of a free country from the unprincipled rascality of this pest will be duly appreciated.—C. E. P., Woodland.

The insect is a "buffalo gnat," or, entomologically, a simulium, described by Prof. Kellogg as "a black, stout-bodied, hump-backed, short-legged, broad-winged fly, from one-sixth to one-fourth of an inch long, with a short but strong, piercing proboscis." He comes from running water, where his larval preliminary is a "squirmy, slippery little black worm, clinging by the odd tip of its body to smooth rocks in shallow water." We do not know how to get rid of him. He will probably get even with you for calling him names.

Sulphuring Hay?

To the Editor: Will sulphur applied to hay when put in the barn keep the mice and rats away?—E. H. S., Santa Maria.

Perhaps: if you use enough to keep all other animals away from it.

California Weather Record

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau at San Francisco for the week ending at 6 p. m., June 26, 1917:

Stations—	Rainfall Data.		Temperature Data.	
	Past Week.	Seasonal To Date.	Normal To Date.	Max'm. Min'm.
Eureka	31.36	46.01	68	46
Red Bluff	19.26	25.01	102	58
Sacramento	12.95	20.00	102	54
San Francisco	15.78	22.27	72	50
San Jose	12.43	16.79	88	44
Fresno	7.25	9.68	104	60
San Luis Obispo	23.03	20.51	84	48
Los Angeles	15.26	15.64	80	58
San Diego	10.13	10.01	72	58

By
the Editor

QUERIES AND REPLIES

Inquirer Must
Give Full Name
and Address

Postal Savings and Farm Loans.

To the Editor: You gave us a very elaborate exposition last week of the reasons why postal savings deposits could not be used by the Government in lending money to farmers. Perhaps you do not know that the Government decided last April to do that and publicly announced the fact. You seem to be very successful in explaining things that aren't so.—Reader, San Francisco.

Your discovery surely belongs in the class of things said to be "very important, if true." The announcement upon which, we presume, you base your claim was this:

Washington, D. C., April 26.—A portion of the \$125,500,000 deposited in the postal savings banks of the United States has been made available to help the farmers meet the war food crisis.

The trustees of the postal savings bank system have adopted a resolution making farm loan bonds, issued under the Federal Farm Loan Act, acceptable at par to secure postal savings deposits. United States Government, Philippine Islands, Porto Rico and District of Columbia bonds are the only other bonds which enjoy this privilege.

You evidently took that to mean that postal bank deposits would be loaned to farmers and fell into the trap which was set for you—perhaps intentionally, perhaps unconsciously—by some hysterical person of which Washington was full at that date and still has some of them. In either case you were "easy." If you will climb out of the trap and look around, you will see that the announcement simply is that farm loan bonds will be accepted as collateral from those who are entitled to borrow postal deposits, viz., bankers. The way this "helps" farmers is by making a better market for the bonds which will be issued on the basis of their mortgages and that is important in helping to make the new rural credit system work. It has, however, no relation at all to the proposition which our querist submitted last week, that postal deposits, on which the Government pays 2 per cent interest, should be loaned to farmers at 2½ per cent—which we claimed could not be done for the reasons stated last week.

But it may appear that, while helping farm loan bonds by inducing bankers to buy them to put up as collateral for cheap Government money to be used in their business, the proposition may

work out to yield to bond buying bankers more benefit than it does to bond selling farmers, for the collateral will be working for the bankers at 4½ per cent all the time Uncle Sam is holding it as security. Probably this is a higher rate than any of the other acceptable collaterals is paying. In fact, if postal deposits were not subject to sight demand, and other things about them remained the same, the banker could call upon Uncle Sam to slip him over 2½ per cent on all the money he borrowed as the margin between the cost of the loan and the income of the collateral and that would be a neater transaction than to get this margin out of the community, as every healthy banker's business requires him to try to do. And if that were true, why could he not go on with it in high finance in this way?: Buy 4½ per cent bonds to put up as security for 2 per cent money with which to buy more bonds as security on which to borrow more money to buy more bonds, etc., etc. What can stop it except the exhaustion of the postal savings deposits in the process? See if you can get a Government announcement on that point!

There is an entirely different aspect of the question, viz.: postal savings for short term loans to farmers on personal security. That is not at the moment pending and we say nothing about it.

Peach Moth and Almond Twigs.

To the Editor: I am sending specimens of killed twigs from my three-year-old almond trees. The pest attacks the tips of the present year's growth and seems to have been active about ten days. I noticed last season that something killed the tip ends of some of the leaders, causing them to sprangle considerably, but I did not discover cause nor consider the damage very extensive. This season we see more of the effects. Please let us know through your valuable paper the particulars, name, nature, control, etc., of this little pest.—Subscriber, Chico.

You have to do with the twig-boring larvae of *anarsia lineatella*—commonly called the "peach moth" because of its preference for that tree, although it takes also almonds, apricots and plums. It is very small and inconspicuous and most growers come up against it just as you did, by sight of dying tips of newest growth. Later,

The Most Intercropped Young Orchard

[Written for Pacific Rural Press.]

President Wilson would be pleased to see how thoroughly J. W. Davies has been carrying out the President's suggestions to get all the food possible from the ground. Mr. Davies has been studying this problem ever since he came, inexperienced as a farmer, to his five-acre place near Willows, Glenn county, several years ago. Most of three acres are set to fruit trees, the rest is now alfalfa. Vegetables and berries have been the main source of income, which has been around \$1,100 to \$1,200 per year from the place.

VEGETABLES INTERCROPPED.

Characteristic of the methods is Mr. Davies' system of following tomatoes with potatoes and potatoes with tomatoes; and intercropping the melons. The American Wonder potatoes are ready to dig early in July. About mid-June they get their last irrigation. While the dirt is still muddy, tomato plants are set between the rows and hoed when the ground is dry enough. Potato digging cultivates them nicely. On the ground where Chalk's Early Jewel tomatoes have passed, fall potatoes are planted.

Radishes, turnips, etc., planted between cantaloupes, are off before the vines interfere.

ARRANGEMENT OF PLANTINGS.

A map of the place would show all rows running crosswise of the place 333 feet long, with a slope of 6 feet. This is too much for convenient irrigation in that ground, which cements after the first irrigation unless well worked.

The crops as seen last May were arranged as follows from one end to the other: Alfalfa; 14 rows of beans (12 fruit trees across the end of this section); two rows young peaches with raspberries in the rows and watermelons in the two centers; a row of apples with two rows of raspberries in the next center; a row of peaches with a row of raspberries and another of Mammoth in the next center; a row of mixed fruit, mostly French prunes; an open space containing seven rows cantaloupes, five rows tomatoes, one of peas, two rows of peppers, eleven rows of potatoes, and two more of tomatoes. At the upper end of this space is the chicken yard, horse, cow and calf barns, a few fruit trees, currants, grapes and Kentucky Wonder beans. Bordering the open space are two rows across the ranch of Himalayas, with currants at the end of each, then a row of loganberries and some fruit trees, mostly apricots and cherries. Two rows of loganberries fill the next center; and the next row of fruit contains fig, apricot and peach trees. Two rows of watermelons beyond them are bordered by olive, apricot, apple and peach trees, with grapes set in the row. An eight-foot strip of strawberries in the next center were full of ripe fruit early in May, but at the lower end had drowned out, so water-

melons had been planted there. Apples, apricots and peaches in the next row, cantaloupes in the next center, two rows of prunes and a few citrus trees next, with two rows of watermelons separating them in each center from the border row of black walnuts to be budded this fall. Cantaloupes reach from walnuts to road. Across the end of these rows from barn to road are the family garden, house and yard.

CULTURAL TRICKS LEARNED BY EXPERIENCE.

Many people have given up vegetable raising in that vicinity on account of the hard ground. It is little trouble if done right. Crops are sub-irrigated, not flooded, and after the first irrigation, with such a steep slope, it is necessary to check the water.

MELONS.

Four years' experience leads Mr. Davies to plant melons in hills in small furrows made with a one-shovel plow. Dirt is turned over the seeds with the same plow, and water is run through the furrow that is left. While ground is freshly plowed, water sub-irrigates to the seed without crusting the soil over them, and "all the seeds come up." Then the patch is harrowed crosswise between the hills to level it and hold moisture. Melons ripen till frost, being planted any time from late May to July.

Watermelons must be kept wet enough so the vines never wilt or the melons will "die ripe," pink streaked, stringy and tasteless.

POTATOES.

Seed potatoes always come from outside. They are planted "middling deep" and covered with a plow, leaving a high ridge over them to keep water always away from the plants. They are harrowed lengthwise two or three times while coming up to destroy newly germinated weeds. Dirt is cultivated toward the rows after every irrigation.

TOMATOES AND PEPPERS.

Tomato plants are usually budding or in bloom when transplanted, due to treatment noted in another article. They are never transplanted into dry soil to be watered at once, but a furrow is made and irrigated so the plants may be set in mud with a little dry dirt raked over it to prevent baking till the next irrigation three weeks later. Tomatoes have been transplanted in July and they seldom wilt much. Peppers are transplanted the same way.

JUNE PRUNE IRRIGATION.

W. M. Scott of Santa Clara Valley irrigates until nearly mid-July, and his prunes do not crack, but when one year a neighbor asked his advice he said: "Don't do it." The neighbor did irrigate and lost four-fifths by cracking. He had let them get dry before watering and the skins could not expand fast enough to hold the suddenly applied water.

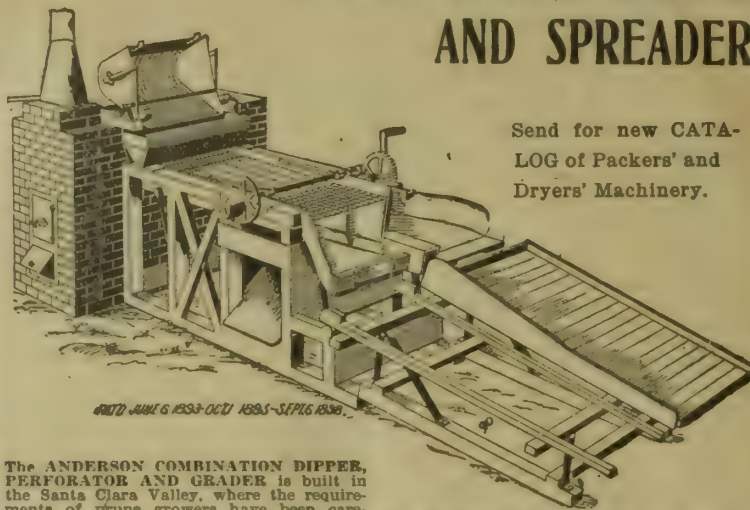
WATER ACCORDING TO LEAF SURFACE.

[Written for Pacific Rural Press.]

A Santa Clara county cherry grower lost 850 trees over six inches in diameter from dieback in the tops, because he irrigated them about the same as he did when they were small, forgetting that evaporation was multiplied in proportion to increased leaf surface as the trees grew older. C. H. Clement has always watered copiously in March after dry winters, and every year early in July after fruit is off. When trees are young, they usually need only the one summer irrigation anyway, says he. But it is important to see that the water soaks in for each tree, since in spots it may simply run over the ground and do the tree no good.

Last year E. T. Nielsen let his gating, May 25 to June 15. He es-prunes get a little dry before irri- timates that 5 per cent cracked.

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Here and There in the Fruit Business

[Written for Pacific Rural Press.]

Paris Green for Pears and Apples.

"Paris green is generally half as expensive per spraytankful as arsenate of lead, and with addition of a little lime we have no burning of pear and apple foliage in our district," says F. A. Wilcox, whose orchards are in the pear district at the southern end of San Francisco bay. "Our only danger is when damp weather follows shortly after spraying."

Mr. Wilcox has used about 250 pounds of Paris green this year, though it is more expensive than usual in proportion to arsenate of lead. He uses 1 1/4 pounds of Paris green per 200 gallons of water, adding 12 to 15 pounds of lime. Quicklime is water-slacked in a separate container, about 50 pounds at a time, and strained before putting into the spray tank. More lime is used if weather seems likely to be damp. The saving even at this year's prices is about 25 cents per tankful, says Mr. Wilcox.

[Quotations on June 18 by one company for 100-pound lots were: Paris green, 66 cents per pound; arsenate of lead paste, 15 cents, and dry arsenate, 21 cents. Another company quoted dry arsenate at 21 cents and paste at 8 1/2 cents. Another company quoted dry at 26 cents. Neither of the latter two handle Paris green.—Ed.]

Tile Drainage Improved Orange Trees.

Tile drainage made a decided improvement in crop and tree growth of an orange orchard owned by C. J. Dreher in Butte county. The

trees were ten or fifteen years old before they showed the injury due to wet feet. There were spots even on high ground, where growth and color were poor and fruit was scarce, small and rough.

It was four years ago that Mr. Dreher put in the first tiling to some of these spots; and he has put in several thousand feet every year since. Some of the trees have not recovered, while others picked up in two or three years. The spots on high ground were found to be like large pot holes with impervious sides. The tile was put at least four feet deep, regardless of hardpan. Being run down the centers between rows, no damage could be noticed on the trees.

Orange roots do not disturb the tiling. Some that was laid years ago was dug up; and roots were found around it, but not in it.

Late Prune Irrigation.

To the Editor: How late can we irrigate prunes without cracking the fruit?—A. W. J., Saratoga.

Till the fruit begins to ripen, if it has been kept growing steadily and the trees have not suffered for water. The principal value of late irrigation is to rot cover crops turned under after they matured. W. M. Scott of Santa Clara county did not begin to plow his cover crop until June 18 this season and didn't expect to be through irrigating it until July 10. He finished the same procedure last year, July 10. Cultivation will conserve moisture enough to finish the crop. The danger lies in letting the trees suffer, and prune skins get slightly hardened; then irrigation will crack them badly. N. L. Lester of the same county has irrigated in August several years without cracking fruit, by keeping it growing from the start.

Almond Leaves Dropping.

If almond leaves are turning yellow and dropping so the trees look pretty thin, it may be due to lack of water, but is more likely to be due to red spiders or brown mites. Get a dust sprayer that will work on the back of the wagon and give the trees a cloud of flowers of sulphur when they are dry and the wind is not blowing. Repeat a week later, for you have already waited too long and the old insects are probably busy at reproduction. The sulphur is not so effective on them as on the younger ones. A more effective method is to spray thoroughly with atomic sulphur. This cannot hurt the trees.

Grape Standards Low.

This season Emperors, Gros Colemans and Cornichons may be shipped with 16 per cent sugar, under the new law. All other varieties must come up to 17 per cent. This is for shipment within California as well as outside. Standard crates are provided, and others must be stamped "irregular." Emperors packed in drums shall have a minimum net weight of 29 pounds and maximum net weight of 35 pounds. The common 24-pound crates must not be over 5 inches deep at the ends nor over 5 1/4 inches between top and bottom at the center when packed.

Standard double crates, half crates, lugs and drums are described.

Sulphurs Vines Dry.

One reason people fail with sulphur on grape mildew is because they apply it while the vines are moist with dew, thinks George F. Schuler of San Joaquin county, who has 175 acres of vineyard. He used to start the men sulphuring at 1 a. m., thinking the moisture would make the sulphur stick better. He sulphured three times that way one season and had the worst mildew ever. Now he won't allow sulphuring until vines are all dry. Mildew got bad in a recent season, but disappeared after one sulphuring while vines were dry.

Manure for Citrus Orchard.

The value citrus growers attach to manure is indicated by the Gillette Ranch people in Tulare county, who last February had already bought 200 tons from one man, D. J. Freeman, at \$3 per ton spread. Mr. Freeman picked it up wherever available, haul-

ing about three tons per load, and averaging a seven-mile haul. "We will use all the manure we can get," said Foreman C. H. White of the ranch.

Prune Apricot Watersprouts.

Judicious summer pruning of apricot trees which have a lot of watersprouts will benefit the buds for next year by giving them a better chance to develop, according to H. H. Ladd of San Joaquin county. In a vigorous, thickly grown tree they should be thinned out. When just enough are left, it is well to cut them back to a foot long after the crop is off. This shades the limbs and develops fruit wood where the tree is strong to hold the load.

Avoid Frosted Young Fig Trees.

Do not irrigate young fig trees late enough to have soft wood when freezing weather comes. Wrap the trees with corn stalks. Even if they freeze to the ground, they often send up a bud that will make a new tree, with good roots already established.

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Indian Corn in Imperial.

[Written for Pacific Rural Press.]

Sam Robinson of Imperial county planted fourteen acres of Mexican June corn in July, 1911, and husked sixty bushels from two acres of it, which he measured. Several varieties of Iowa corn planted at different seasons have failed to make grain.

This crop was made by plowing barley stubble about five inches deep in June, irrigating and harrowing two or three times after weeds had sprouted. This put the medium sandy soil into excellent condition to hold moisture and kept weeds down. Thorough preparation is necessary, for many ranchers here have lost crops on account of pig weeds. Mr. Robinson vouches for at least one pig weed that grew 12 feet tall and 6 inches in diameter.

The corn was planted about eight pounds per acre, aiming to get the seed 18 inches apart in rows 3½

feet apart. It was harrowed when about three inches tall, tearing out some, but benefitting the field. It was irrigated when knee high and flooded around the stalks several times more through the summer. Mr. Robinson thinks three irrigations would be enough if the ground is filled with water before planting.

The corn did not harden enough to husk until December, after frost had killed the leaves. The husks were thick, making the nubbins look like large ears. The stalks grew eight or nine feet tall.

Although Mr. Robinson took prizes on his corn three or four years, he gave it up as a grain proposition in 1912.

Other people have had splendid results with certain varieties of Indian corn in Imperial Valley for silage, as already noted in these columns.

Sweet Potato Marketing.

[Written for Pacific Rural Press.]

There is every relation between digging and marketing, as the writer learned to his own sorrow when he lost a crop in the cellar after digging them without cautious handling. Earliest sweet potatoes bring highest prices. Latest sweet potatoes are usually nearly as high priced. Neither will keep if bruised in digging.

The first potatoes to be dug are those which seem most likely to get too large if allowed to mature, according to F. L. Landram, a pioneer sweet potato grower of Merced county and until this year a heavy grower. These earliest potatoes are dug in July, though immature, and are generally sold at three or four cents per pound in tomato crates holding a little over 20 pounds each. Later potatoes are sold in 12x12 crates, and those dug after August 1 are packed in standard 100-pound crates 12x16x about 24 inches.

There are three classes of potatoes: "hog feed" includes very slender potatoes and roots; "seed" or "canning stock" includes those under about 1¼ inches diameter; salable potatoes are those over 1¼ inches in diameter, though extra large sizes are sometimes discounted.

Heavy shipping continues from August 1 to January 1, though sweet potatoes are sometimes kept in cellars until April. If growers can get \$1 per crate, however, they do not store many. In 1915 the price went down to 50 cents. In 1916 the lowest was about \$1.15, and they were selling at \$2.50 in mid-February. Particularly careful handling is required for storage potatoes. The crop ranges from 50 to 125 crates per acre. Fifty crates generally just about pay the cost of production, according to Mr. Landram.

Well Satisfied With Sudan Grass.

[Written for Pacific Rural Press by Geo. Wiegand, San Jacinto, Cal.]

The middle of last April I sowed Sudan grass ten feet apart, ten pounds to the acre, with a drill. Sudan needs lots of water. It grew to be seven feet high, but one place where water stayed all the time it did not grow well. I cut my hay in early June, shocked it and let it lie quite a long time, and didn't think much of it till feed got short. I then hauled it to the barn. The horses nearly went mad over it. I worked my horses hard on beet land and they held up fairly well on it. I also pastured on it a while, then ended up by cutting a final crop three feet high.

My Sudan ran about nine tons to the acre. Sudan won't grow here without plenty of water, and will grow in places fairly bad with alkali, even where weeds wouldn't grow. The only trouble is in getting it started. If it starts there is no trouble after that. To start it on alkali ground, the land should be irrigated, then plowed and worked thoroughly as soon after irrigation as possible, according to ground conditions; then plant the seed immediately. I was offered one dollar more a ton for my Sudan hay than

the alfalfa by a Pasadena dairyman. I think it one of the coming feeds and will grow twenty acres of it this year.

DEVELOPING A GOOD BEAN VARIETY.

A most interesting thing noticed in endeavoring to work up a better variety of heavy producing and early maturing bean was letting the bean that was intended for seed thoroughly ripen on the vine before harvesting. The writer has noticed in many instances where bean farmers make a very obvious mistake in selecting their seed from the thresher instead of from the vine or growing a special section of more thoroughly ripened beans for their next year's seed.

Beans most generally harvested for commercial purposes are cut while still a little green to avoid them shelling out so badly before they get to the thresher. Growing from this kind gives a little slower maturing crop.

STRAW COVERING AGAINST RABBITS.

To the Editor: In common with many of your readers, I object to having my newly sprouting corn and beans go as feed for wild rabbits,

whom I regard as allies of the Germans. This happened with my first planting on land bounded on two sides by brush. Having on previous occasions had no luck with poisons and deterrents, I tried spreading over all my subsequent plantings a light scattering of straw—by no means enough to darken the seedlings but quite sufficient to screen them from rabbit-brained marauders, who now seem to regard the whole field as a straw patch. A corner which I neglected has been eaten to the ground, but where my ruse was first tried out I now have beans with pods six inches long, their tops, of course, showing plainly above the straw, but remaining unmolested.—H. C. Tracy, Hollywood.

We are very glad to get this pertinent experience. Strawing over potatoes to reduce evaporation and save cultivation is an old and successful practice under certain conditions. In that case, however, a heavier covering is used and it is put on right after planting and the potatoes have no trouble in growing through it. The lighter covering as a screen against rabbits is new to us and very interesting.—Editor.

1917 FAIR NOTES

Ventura County Fair, Ventura, Sept. 26 to 29.

Dairy Cattle Congress, Waterloo, Iowa, Oct. 1 to 7.

Kern County Agricultural Fair, Bakersfield, Oct. 2 to 6.

National Dairy Show, Columbus, Ohio, Oct. 18 to 27.

Tulare County Citrus Fair, Nov. 15 to 24.

Glenn County Livestock and Agri-

cultural Fair, Orland, Sept. 26 to 29. Recently organized with 16 leading farmers and business men as directors, the "cow bank" cashier as president and E. A. Kirk, a farmer, as secretary.

California GARDEN-FLOWERS

SHRUBS, TREES AND VINES

Being Mainly Suggestions for Working Amateurs

By Edward J. Wickson

Hon. President California State Floral Society

First Edition—1915

262 pages. 5½x7¾ inches; illustrated: cloth bound; 12 full-page photo-plates and numerous text illustrations.

This book aims to tell the beginner in California, whether he be a scholar struggling with his school-garden, or a suburbanite gazing vacantly on his residence lot, or the farm-home maker, who is puzzled to translate his experience with teams, plows and pasture fields into trowels, pruning-shears and lawns, just what to do to make garden-soils, grow plants and surround his abode with beauty under the peculiar climatic conditions of California.

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Field and Garden Suggestions

[Written for Pacific Rural Press.]

Cover Corrugated Culverts Deeply.

The corrugated iron culvert is often so lightly filled over that passing vehicles hammer it into uselessness. A good corrugated culvert derives its strength from its construction and its durability from the purity of its material. It should be covered with a depth of earth equal to its diameter whenever possible, and even then the earth should be firmly tamped down to avoid being rutted and scraped away from the pipe which it is protecting.

The strength of arch construction is generally known. The corrugated culvert really represents a quadruple arch construction, since it is a general full circle and at the same time has the corrugated form (which is really a series of arches on the circumference). The strength is not a matter of conjecture but of long continued, practical experience. The arches and the corrugations give the culvert a resiliency that enables it to withstand, during long periods of service, the shocks and strains of road traffic.

This form of pipe is easily installed, and, on account of its general toughness, will withstand the results of careless work better than most others. In the end, however, the public pays for such negligence in increased cost of highway maintenance.

In our April 7 issue there appeared an advertisement of the Armco Iron Culvert and Flume Association in which was stated that "Armco Iron is never less than 98.84 per cent pure." This should have been "99.84 per cent."

Limas After Barley.

To the Editor: We have several acres of barley that will make some three tons of hay per acre. It is rich sandy loam, subirrigated. Can we plant lima beans after the stubble is turned under and thoroughly worked? Some say here that lima beans do poorly after barley. If so, why?—G. C. H., Downey.

Two objections to your plan are noted. Without considerable care, you are likely to leave the soil not well firmed underneath. The ordinary limas grown on the coast might keep on growing on your moist soil so you could not well harvest them before fall rains. You would be shortening the season at the beginning also. Perhaps your local seed companies can furnish an earlier maturing variety.

Lime Doubles Size of Plants.

That most of Humboldt county would nearly double its crops if lime were applied seems indicated by the various plants from various parts of the county, shown us by Secretary R. W. Werner of the Farm Bureau. A representative plant in each case had been taken from the limed part of a field and another from the unlimed part at the same time. These samples include beans, alfalfa, clover, beets, turnips, corn, barley, etc. In practically all cases the unlimed plants were less than half as large as the others.

Hurry-up Tomato Planting.

E. L. Davenport of Chino was a little rushed for time when tomato

planting fell due, so he put them in by running water down a furrow in a line where he wished to plant. As the soil was a light sandy loam, the water made a soft, slushy mud in the furrow. With a forked stick Mr. Davenport pushed the roots of each of the plants into the mud, holding the plant in his hand by the stem.

He finished the job by turning a furrow of dirt on them from each side, covering up the mud.

Beans Not Weevily.

Throughout Ventura county it is generally known that the beans there do not get weevils in them. Bean

buyers of Ventura and Oxnard bought at Nordhoff and Moorpark early last season at one cent above quotations because the beans would keep for the latest market. A good plan to avoid weevils is to keep all weeds down, even from the borders of your field, not only during the growing seasons but the whole year around. Weeds nest the weevil from year to year.

Get Water to Roots.

"The first thing when flood water leaves silt here in Coachella Valley is to flop it under as soon as you can get on it," says Bruce Drummond of the Indio Experiment Station. If you don't, it seals your soil up and your irrigation water doesn't get through it. "I am kept on the go most of the time to answer questions of people

who want to know what is wrong with their trees, truck, etc. In many cases I can take a shovel and show them that they are not getting water down to the roots."

Sudan on Coast.

Sudan grass has been tried with no success on the lowlands of Humboldt county. It needs more sun and warmth than the ocean fogs and winds permit there. But a number of patches are being tried back in the mountain valleys, where hay is much needed, and with good prospects for success.

Wheat is almost out of the question, but sprouted oats, growing Gyp corn, and cabbage are as good as the best for growing stock. Growing sweet corn is excellent too.

help balance the nation's hay shortage by planting Sudan Hay now!



Sufficient Egyptian corn and milo maize have been planted to more than meet the demand—reports indicate a shortage of hay. Sudan grass is the hay crop that will make **REAL MONEY** for you.

If you plant now under the present warm and favorable conditions, you should have a crop five to six feet high (ready to cut) in 40 to 60 days. Subsequent cuttings mature in 35 to 40 days.

The University of California bulletin says, "Sudan grass is good to look at, is easy to grow and handle, grows during the summer, gives large yield and is well liked by stock. It maintains growth throughout the season under arid conditions. It grows so tall and thick that weeds have no chance to grow."

With irrigation it will produce eight to ten tons per acre—without irrigation, up to four tons to the acre. Grows in a wide range of soils—from sand to clay."

Sudan Grass Beats Them All

This table from the University of California State Bulletin shows yield of constituents in pounds per acre from grass hays:

Kind of hay	Yield per Acre	Dry Matter	Protein	Fat	Crude Fiber	Nitrogen-free extract	Ash
Sudan Grass	8,640	6,367.7	439.1	191.0	1,794.6	3,485.2	457.5
Barley Hay	4,000	3,400.0	350.2	95.2	996.0	1,792.0	166.6
Rye Grass	4,000	3,520.0	369.6	123.2	999.0	1,735.5	323.8
Timothy	4,000	3,316.0	225.5	96.2	1,107.5	1,721.0	165.8

Reports indicate an overproduction of corn and a shortage of hay this year.

Our free Sudan Grass folder explains the wonderful features of this great forage crop. Write or call for it.

Better place your order for seed at once in order to insure early delivery.

SPECIAL SUMMER PRICES

36 cents per single pound, enough for 50x100 ft.

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Enclosed find \$..... for which send me lbs. of Germain's Proven Sudan Seed.

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10-pound lots, 34 cents a pound, will plant an acre, (sown broadcast).

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Mechanical Power on the Farm

Users of tractors, engines, pumping plants, motor trucks, automobiles, electric motors, and other mechanical farm power are invited to make this department an exchange of their experiences and troubles.

LEVELS IRRIGATION BORDERS FOR TRACTOR.

[Written for Pacific Rural Press.]

When a good many of the California tractors run over an irrigation border in the orchard or field while pulling a load, the front end lifts clear off the ground and then drops with a jar that annoys the operator and strains the machinery. E. T. Nielsen avoids this in his Santa Clara county orchard by raking the checks down just in front of the tracks.

He bored two holes in the edge of the channel-iron frame on each side of the engine, just between it and the front wheel. A piece of channel iron was bolted to these holes crosswise of the tractor and projecting just beyond the outer edges of the tracks.

Near each end of this channel iron had been bolted four springtooth narrow teeth far enough apart to clear away the check just in front of each track, and digging only into the borders as they are crossed.

CYLINDER FIRES ONLY AT HIGH SPEED.

To the Editor: On our Ford, No. 1 cylinder will not fire unless engine is running about twenty-five miles per hour, and No. 2 cylinder has an extra heavy exhaust and crankshaft bearings are difficult to keep tight. We have tried batteries, repaired magnet, put on new carbureter and new vibrator coils, valves are timed right with piston, spark is about 1-32 past top center with spark retarded, but we do not seem to be able to get the desired results.—J. A. R., San Joaquin.

The heavy exhaust is probably due to the laziness of No. 1; and the looseness of crankshaft bearings is due to the irregular explosions of the cylinders. No. 1 does not explode except at high speed because, probably, you are losing compression either through ill-fitting valves, or past the piston, due to worn piston rings or scored cylinder.

TIGHTEN BEARINGS COLD.

[Written for Pacific Rural Press.]

The engineer on T. T. Miller's ranch in Imperial County tightened part of the crankshaft bearings of his tractor as soon as he came in

from plowing and while they were yet warm. He tightened the rest in the morning. Then he couldn't crank it. The bearings tightened while warm had contracted more than the crankshaft, being of different metal. The other bearings were found all right.

TRACTOR PUSHES LIMBS ASIDE.

The projections of an orchard tractor often catch low hanging citrus limbs and jerk fruit off. This is very nicely prevented on a 30-14 tractor being used among the lemons on the Leffingwell ranch in Los Angeles County. Heavy sheet-irons across the front shove the branches aside. Then to keep them out of the tracks, a sheet-iron shield extends from below the axles to a narrow wooden platform over the tracks. From the other side of the platform another shield slopes up against the cylinders and gas tank so there are very few chances for limbs to get caught. The upper shields are hinged to the platform so they can be laid back to get at the engine.

USES AUTO FOR WELL DIGGING.

A well 135 feet deep cost but \$35 and 20 days' labor for R. A. Grant of Ontario. A well 3 by 3 feet was dug and boarded up as Mr. Grant dug down. A derrick was set up. A steel cable and a dredge bucket were the necessary equipment. Mr. Grant ran the Ford car down a roadway from the well while the car pulled the bucket up. A neighbor's boy emptied it, and the car was backed up to let the bucket down again. The \$35 expense was for the lumber to case the well with. A four-horsepower engine runs a pump on it now and supplies all the water needed for a 10-acre garden.

A LOT OF LITTLE MOTORS.

[Written for Pacific Rural Press.]

Little electric motors are stuck around "most anywhere in C. H. Schmidt's dairy buildings in Fresno county. A three-horsepower motor chops alfalfa for the cows, so it will be eaten cleaner and can be mixed with the beet pulp and mill feeds to balance them. Another runs the separator. Another motor pumps water for the house; another pumps for irrigation of the peach orchard if ditch water should fail.

TRACTOR NOTES.

The province of Ontario, Canada, has gone a step farther than this country and has evolved a scheme for the government to provide tractors and hire them out to farmers at cost. The outfit includes tractor, three-furrow plow and double-disc harrow, and is placed upon the farm at actual cost of operation, the farmer boarding the operator while work is being done on his place.

TRUCKS FRUIT AND MILK.

[Written for Pacific Rural Press.]

San Pasqual Valley, San Diego county, is far over the hills from a railroad; yet by use of auto trucks the farmers there are enabled to market their fruit and milk cheaply. F. E. Judson is one who ships his

apricots and peaches that way 37 miles to San Diego at 10 cents per lug box with the lugs returned free. C. G. Marcus is another. He sold 800 30-pound boxes of apricots that way last year. E. H. Webb runs the truck, with which he hauls 50 to 60 cans of milk per day for dairymen all along the route, including that from his own 60 cows.

H. A. French, superintendent of the Motor Vehicle Department, announces the following figures covering registrations to date: Automobiles, 224,752, \$2,333,317.65; motorcycles, 20,498, \$41,696.91; chauffeurs, 11,544, \$14,484.75; motorcycle dealers, 150, \$754; miscellaneous, \$3,683.12; total, \$2,438,735.18.



Twenty Million Miles of Telephone Wire

The telephone wire in use in the Bell System is long enough to run from the earth to the moon and back again forty times.

The Bell System has about twice as much telephone wire as all Europe.

More than 500,000 new telephones are being added to the Bell System yearly—almost as many as the total number of telephones in England.

In twelve months the Bell System adds enough telephones

to duplicate the entire telephone systems of France, Italy and Switzerland combined.

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The farmer cannot afford to waste time or money by using out-of-date methods—the demand for food is growing every day—you should take advantage of it by producing more—the way to do that is to farm with a tractor.

Write for the Yuba Ball Tread Tractor Catalogue. How many acres have you?

Yuba Manufacturing Co., Dept. A-22
433 CALIFORNIA ST., SAN FRANCISCO

CRITICS' AND CUDDLERS' CORNER

Subscribers are welcome to praise or to condemn (in letters of not over 200 words) anything which appears in the reading columns of this journal. Contributors to this department may drive and counter-attack each other as they see fit without endorsement or response on our part.—Editors.

Land Owners Who Won't Try.

To the Editor: It is disheartening to notice how few land owners in this neighborhood are willing to try new things, and the large land holders least of all. Everybody is well informed on the war in Europe and on local scandals, but agriculture is mostly a matter of dollars and soil robbery. I have repeatedly tried to induce people to plant a few carob trees on those eastern foothills, also to see which eucalyptus or locusts would best succeed, but nobody seems to care to try until some crank shows them the way. His success is a guide to others and his failures are his own! It is the same with soil blasting, draining, fertilizing, subsoiling and other things which you suggest for trial. For about twenty-three years I have taken your good paper and made it a rule to put all other reading matter aside till I am through with the Press. The eastern part of the Santa Clara Valley has a clay soil and great parts of it get water-logged in the wet seasons, but deep plowing and subsoiling do wonders with it, and I think that the advent of the tractor will bring those cold soils to life, when combined with lime and cover crops. If only some of those large land owners would either come to life or die, we would be all fixed.—Arn. Mos., San Jose.

Who Wants to Be a Pomero?

To the Editor: The orchardist is not a farmer, though he uses the soil for his foundation to work with. The miner is not a farmer, though he uses the soil deeper still to work with. Why not give the producer a proper name when he is a fruit grower, just as well as when you say a man is a stockraiser who raises cattle. In order to shorten fruit grower to one word, how would it do to call him (as Mr. Frank Owen of Napa suggests) a pomero, referring to pomology, pomologist, etc., pronouncing it po-ma-ro? This has no more letters than farmer, and applies to a fruit grower. We have a good many changes these days, and why not advance on this line and properly classify the man who raises what California excels in, and not leave the fruit raiser in a general class which does not distinguish him from many others who do not add so much to the productivity and value of the land? Put the fruit raiser in the advanced position he is entitled to because he, more than anyone else, has brought attention to California and increased the State's

desirability, esthetically and financially.—F. F. Britton (Pomero), San Jose.

Foreman Wants Proper Pay.

To the Editor: What encouragement has an ambitious man to stay in farming when, after years of experience and a thorough knowledge of fruit, he can command but \$50 a month and a house that is not fit to live in? The Japanese and Chinese working under me are receiving \$2.50 and \$2 per day, which is higher pay than the man gets who has to furnish the brains for the whole combination. If white labor were paid in the same ratio, I am sure there would be no difficulty in getting and retaining good help, but when a man has made a business of farming for years, understands orchard work from one end to the other, wants to stay in it, is young, sober, reliable and a quick worker, it is discouraging to find that the Orientals are valued more highly than he. It costs almost twice as much to live as last year, without any increase in the farmer's wage.—Discouraged Farmer, Vacaville.

Are the Germans in the Sun?

To the Editor: We are doing our "bit" by raising good Indian corn on our river-bottom land, but would like the sun to not be so shy day in and out this spring. California at best is not a good corn climate, owing to the cool nights, but more heat from "Old Sol" during the day would not come amiss, if the weather man could arrange soon to send it.—Phil S. Miller, Oakdale.

Setting the Pace for a Medical Journal.

To the Editor: Your recent article on the "Automatic Septic-Tank Disposal of Farm Sewage" is so good I have a mind to swipe it entire, of course giving full credit. But just think of a medical journal going to an "Aggie" sheet for copy!—Thos. S. Blair, editor Medical Council, Harrisburg, Pa.

A Jay's Way with Jays.

To the Editor: I notice that one of your subscribers wants to know of a way to prevent bluejays carrying away almonds. The best way is to catch each one and tie his bill together with strings.—A Constant Reader, Paradise, Cal.

Driving Away with Jays.

To the Editor: Tell C. B. of Snelling to shoot a few bluejays and hang the dead bodies around in the trees where the others can see them. Also a scarecrow would assist in driving the bluejays from his few almond trees.—Earl Smith, Brooks.

All nuts that are to remain permanently tight should have the threads on the bolt cut so that they cannot become loose.

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I certainly recommend the Layne & Bowler pump to any one wanting an efficient water supply at the least expenditure of power and expense.

Very truly yours,
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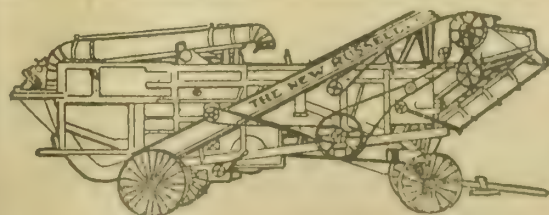
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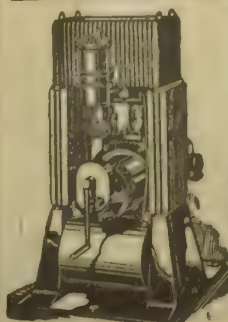
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Uni-Lectric lighting plant generates standard 110-volt direct current; operates from one to fifty lights, electric motor, electric iron, vacuum cleaner, electric toaster, force pump, churn, washing machine, etc. No Batteries—No Switchboard—and a better machine for less money. High speed gasoline motor, generator and automatic governor, all complete in one small, compact unit. Uses standard lamps and fixtures. Simple, easily installed, dependable, economical. Costs less than other systems to buy and to operate.

Write to-day for full description and low price.

KARL A. HEDBERG

ELECTRICAL ENGINEERS
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General Agricultural Review

Field Crops.

Utah will produce only half a hay crop this season.

Every harvester in the Oakdale section is now busy.

Haying is on full blast in Lassen and Modoc counties.

The Biggs Rice Mill finished the cleaning of 205,000 bags of rice for the season.

The grain fields of Tulare lake are yielding a much heavier crop than anticipated.

Unless it rains in the next week, the grain crop in Modoc and Lassen counties will be far below par.

A lot of Blackeye beans had to be resowed in the Ontario district. The later-planted beans there are doing best.

The third fiscal year of the Imperial Valley Cotton Growers' Association closed recently. The crop last year totaled \$1,250,000.

A new Coast record for barley weight is claimed by A. C. Stevens of Woodland. Two thousand sacks from the Stevens ranch were found to weigh 124 pounds each.

The harvesting of what promises to be a million-dollar grain crop is under way in the east side belt of Tulare county, comprising the Poplar, Terra Bella, Ducor and Richgrove sections.

Harvesting has begun in San Joaquin county and the crops are turning out well. Potatoes are bringing from \$2.75 to \$2.85 per hundred pounds, and barley from \$2.00 to \$2.10 per hundred.

The Federal Department of Justice has advised the California Lima Bean Growers' Association that it finds its organization and conduct of affairs entirely satisfactory and not contrary to law.

W. F. Bailey, statistician for the State Commission Market, says that potato prices will not go below \$2.50 to \$3 per cental this season. He says the demand for shipping as well as local consumption will maintain prices at these figures.

A grain fire at Montpelier, near Modesto, destroyed two combined harvesters and 400 acres of growing grain, many farm buildings and other property recently. The fire cut a swath through six miles of fields.

Records for wheat prices were established around Porterville when local brokers paid C. L. Crowe of Terra Bella \$6 per sack for 5,000 sacks of wheat of a high grade, making \$30,000 for his crop this season. Last year the same acreage brought him \$11,000.

Van Nuys farmers are rejoicing over a big potato crop, which is now being harvested, and yields of 100 to 150 sacks of 100 pounds each are being reported. Potatoes are being contracted at \$3 per cwt., which means \$300 to \$450 per acre to the grower.

The total commercial acreage under watermelon production in California this season is estimated by

the United States Department of Agriculture at 3,600. The forecast of production, based on the condition of the crop June 1st, is 1,328,400 melons.

An estimate of commercial acreage of cantaloupes to be harvested in 1917, with a forecast of production based upon the condition of the crop as reported on June 1, 1917, is as follows in California: Imperial Valley, acreage to be harvested, 9,200, yield, 216 crates; Central California, acreage to be harvested, 7,100, yield, 173 crates, a standard crate holding 45 melons.

The American Beet Sugar Company has notified beet growers in the Van Nuys district that they will pay for beets this year on a sliding scale, basing the price upon the price of sugar. In former years the contract price has been \$4.50 per ton for beets having a sugar content of 15 per cent and 30 cents additional for each per cent over that. If sugar is selling at \$6.00 per 100 pounds the grower will receive \$6.00 per ton for his beets of 15 per cent and 30 cents additional for each per cent over.

It is reported from Oxnard that the California Lima Bean Growers' Association has closed its 1917 pool. Frank A. Shippley, manager of the association, states that the association will have between 350,000 and 400,000 bags signed up this year. In addition there are 500,000 bags that have been contracted by brokers at 5 1/2 @ 7 cents, making about 1,000,000 of a crop estimated at 1,700,000 bags. The balance of the old crop, it is said, will be disposed of within the next sixty days.

Deciduous Fruits and Berries.

Napa county's prunes and pears are showing a 100 per cent crop.

Prunes, apricots and cherries were the heaviest losers by the late hot weather.

In the Watsonville district much activity is reported as the result of the high offers being made there for dried apples.

The first consignment of fruit to reach the new Prune and Apricot Growers, Inc., was from Winters, Yolo county.

Horticultural Commissioner Stokes reports that the principal part of the 1917 pear crop of Lake county has been purchased by canneries at from \$25 to \$40 per ton.

A quarter of an acre of Magoon strawberries on upland in the vicinity of Riverbank, has this year brought to the owner, J. J. Hunnewell, the sum of \$154.10.

An extra heavy crop of cherries was grown on Mr. Wassan's place, near Hilton, Sonoma county, this year. Mr. Wassan says he cannot prune his orchard heavy enough to prevent his Imperial prunes being overloaded.

Several growers in the Beaumont district, Riverside county, sprayed their apple trees during the late heated spell. They found the spray and sun had combined to ruin the

A Bigger Yield From the Same Field.

From any field that you have been manuring by the hand method you can get a bigger yield if you use the spreader method—and save much time and labor.

A good spreader tears up the manure into small particles and spreads it evenly. The manure goes farther. It can be worked well into the seed bed so that the plant roots get all of its valuable plant food. *Wasting manure is like wasting money—a good spreader makes every particle of manure count.* A Newton County, Ind., farmer testing the spreader and hand methods of applying manure on two ten-acre tracts found that the spreader method gave 120 more bushels of corn, 140 more bushels of oats and 9 more tons of clover.

The John Deere Spreader

The Spreader with the Beater On the Axle

has special capabilities for increasing your crop yields. Its exclusive features make it the ideal implement for the best method. Ask any owner of the John Deere Spreader about the way it increases crop yields and saves time and labor. After you have operated a John Deere

Spreader of your own for a year, you will fully appreciate how much these gains really mean. You'll find that the Spreader with the Beater on the Axle more than pays for itself in one year from the gains it gets on even a fair-sized farm.

The beater on the axle construction eliminates all chains, clutches and scores of other trouble-making parts. Does away with half the types of castings otherwise necessary. Does away with adjustments. Puts upkeep at minimum. Makes the John Deere Spreader exceptionally long-lived.

Beater is all steel—practically indestructible—runs on roller bearings, aiding light

draft. Beater teeth spirally arranged—tear up manure perfectly and distribute it evenly. Deliver manure close to the ground—wind does not affect spreading.

Revolving rake feeds manure to beater evenly, aiding in uniform distribution.

Shock—absorbing spring relieves spreader and horses of sudden strains.

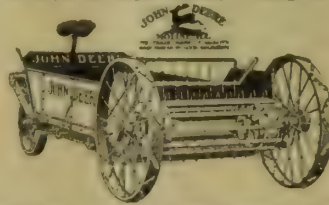
Spreader only hip-high to top—easy to load. Big drive wheels—light draft. Ball-bearing apron drive—apron travel frictionless. Simple

gear attachment keeps weight of load from making apron race when spreading up hill.

Easy to operate—only two levers—one lever determines number of loads spread to the acre; the other starts and stops the spreading. It's so simple, a boy can operate it.

Wide-spread attachment for extra wide spreading.

Write for booklet on the John Deere Spreader.



A Special Plow for California Orchards

Plowing conditions in California orchards demand special plow construction. A serviceable plow must stand the severe strains occasioned by the soil conditions and operate close to the orchard trees.

John Deere California Orchard Tractor Disc Plow

meets these conditions admirably. Heavy lap-beam frame—laps securely joined by heavy bolts—no sagging—discs always in alignment.

Discs best quality steel—disc bearings oil-tight and dust-proof—scrappers made to stand severest strain.

Double setting of discs permits use in very hard, dry ground as well as in loose, trashy soil.

Special "Z" land axle brings land wheel parallel with rear disc beam, permitting plowing close to trees.



Special adjustment on front furrow wheel, causing it to set inside line of front disc so that plow

will work close to trees when soil is being thrown to them. Beam has special shape to permit working close to trees.

Write for free booklet on this plow.

Big Book Free



Better Farm Implements and How to Use Them

America must produce more food. Labor-saving implements will play an important part in increased crop production.

This book tells all about a full line of labor-saving farming implements. Tells how to

adjust and operate many of them. A practical farm implement encyclopedia. Worth dollars. Illustrates and describes the following machines: Walking and Riding Plows, Tractor Plows, Disc Plows, Disc Harrows, Spring Tooth and Spike Tooth Harrows, Corn and Cotton Planters and Drills, Listers, Alfalfa and Beet Tools, Grain Drills and Seeders, Riding and Walking Cultivators, Lister Cultivators, Mowers, Side Rakes, Loaders, Sweep Rakes and Stackers, Hay Presses, Grain and Corn Binders, Corn Cutters, Stalk Cutters, Kaffir Headers, Manure Spreaders, Portable and Inside Cup Elevators, Corn Shellers, Wagons, Farm Trucks and Buggies. This big book will be sent FREE if you state the implements in which you are interested and ask for Package X-1520.

You Are Interested

in farm implements that save you money. The dominant idea back of the manufacture of John Deere implements is to produce tools that are economical. This means durability, easy operation and GOOD WORK.

The name "John Deere" on an implement means that these qualities are embodied in that tool.



John Deere implements are sold by John Deere dealers everywhere

JOHN DEERE, MOLINE, ILLINOIS

ALL CANNERIES IN SOUTHERN CALIFORNIA TO RUN FULL BLAST.

Every cannery in Southern California will be operated this season. Cannery men are still contracting fruit and vegetables wherever they can be had. Some canneries that have not been opened for several years will be operated this season. The big cannery at Colton that has heretofore been idle, owned by Arthur Gregory of Redlands, will resume. It has contracted for all the peaches and apricots it can get in the upper end of San Bernardino Valley. It will also can tomatoes. J. C. Kubias, who owns a big olive factory at Redlands, will can tomatoes this season. He has given farmers nearly 1,000,000 tomato plants to insure his supply. The Yucaipa cannery will double its capacity. The big canneries at Ontario and Pomona will work early and late during the coming season. The apricot and peach crop in that district will be heavy, and it is thought fruit will run to large sizes. At Banning and Beaumont a big pack is expected, as crops in that section are heavy. It looks as though crops are not going a-begging for buyers this fall.

young fruit and losses running up into hundreds of dollars occurred. Unsprayed orchards escaped serious damage.

Visalia's green fruit picking season opened last week when the canneries and the Earl Fruit Company began the season's pack. The canneries will operate on apricots and peaches.

The Kings County Packing Company at Hanford has begun the apricot run at its Armona plant. The company will can about 750 tons of apricots, beginning with Royals and finishing with Tiltons.

The extremely hot weather around Sebastopol last week has done considerable damage to cherries and also to Loganberries. A lively run of berry shipping is expected to continue up to the middle of July.

A war tax and duty of 32½ per cent on apricots, a duty of 66 2-3 cents per 100 pounds, and a 7½ per cent war tax on prunes have been levied on shipments into Canada according to information reaching packers at San Jose.

The peach growers in Sutter and Yuba counties are informed by T. B. McKelby, organizer for the Sacramento Valley for the California Peach Growers that that organization would pay growers an average of 6c for dried peaches this year.

Chas. M. Fuller, sealer of weights and measures of Los Angeles county had arrested and fined last week a number of berry growers for selling short weight boxes of berries. The law requires that each box of strawberries and blackberries shall weigh 12 ounces.

The prune crop in the Guerneville section is fine. Some old orchards are bearing more heavily than for the past five or six years. Some of the old growers around here believe that Guerneville and neighboring sections will turn out about 350 or 400 tons.

It was generally decided at a meeting of the prune and apricot growers at San Jose recently that the commercial driers should dry on a basis of \$5.50 per ton for French, based on 25c per hour for labor; and apricots \$10.00 per ton and pits.

Government contracts have just been closed with Pasadena canneries for lots of canned goods the coming season. They call for both vegetables and fruits. It is said that 150 tons of blackberries and loganberries will be put up and that canners are bidding \$12 per ton more for them than last year, and are offering \$40 to \$60 per ton for apricots.

Geo. G. Grier, manager of a canning association in Pasadena, who has contracted for thousands of tons

of fruit in Los Angeles county, has been out among growers studying the damage to the fruit crop by the recent hot wave. He says the early blackberries and loganberries have been cut short one-half. Peaches and apricots were not seriously damaged and Himalaya evergreen blackberries escaped injury. Plums, while suffering some loss, were damaged enough to interfere with canning operations.

The deciduous fruit growers of the upper end of the San Bernardino county expect a rich harvest this year. Redlands, Bryn Mawr, Mentone, Crafton, and Yucaipa expect to make enough to recover their losses for the past two years. The apricot crop of that section is fair and in the Bryn Mawr district is expected to reach 700 tons, all of which have been contracted by A. Gregory of Redlands at \$51 per ton for hand-picked and \$46 per ton for those shaken from the trees. They will all be canned. Peaches and pears also are expected to bring good prices. In the Menton district the peach crop is put at 500 tons. Many of the orchards there are young and the trees so heavily loaded that they will have to be thinned. The cherry crop is now being marketed and they are bringing good prices. The Yucaipa apple crop is said to be very promising and is expected to be the largest in the history of the valley.

Citrus and Semi-Tropical.

To avoid root-curl on young avocado trees Hart & Barber of Puente are planting straight from seedbed to the open field, and avoid pots which is said to cause root-curl.

The new olive processing and oil extracting plant which is to be built at Lindsay this summer by the California Associated Olive Growers' Association, will cost \$30,000, it is said.

Experienced orange growers of Visalia declare that the dangers from the usual "June drop" among the navels has passed, leaving excellent prospects for the forthcoming navel crop in Tulare county.

The outlook for oranges is good says P. H. Norton of Redlands, manager of the Redlands Co-operative Orange Association. He is just back from a trip through the Middle West and Canada. He says he found business conditions good.

Lyman M. King of Redlands, who appeared before the Interstate Railroad Commission in Washington to protest against the blanket increase of 15 per cent in freight rates asked by the railroads, says the men who represented the citrus industry before the Commission believe that oranges and lemons will be exempt. J. A. Stewart of the Mutual Orange Distributors Association of Redlands who was also in Washington at the hearing, says that the Southern Railroads have made a request of the Commission that the 15 per cent increase be reduced to one per cent on citrus fruits.

The California Walnut Growers' Association in a circular letter sent out June 22, states that the recent hot wave damaged the growing walnut crop in Santa Barbara county 5 per cent, Los Angeles county 25 per cent, Orange 35 per cent, and Ventura 20 per cent. The damage to the entire crop will be close to 25 per cent. As the prospect was for the greatest production on record the State will apparently ship as many walnuts as were marketed last year. The Association will handle a larger part of the crop than last year, as new associations have been formed at Walnut Creek and San Juan Capistrano.

Grapes.

On account of unsettled conditions relative to transportation, few of the Lodi fruit companies are contracting for Tokay grapes this year.

The grape crop in Fresno county from all indications, will be better than ever before and all crops are developing in a most favorable manner.

Miscellaneous.

Yolo's estimated crop production is \$13,144,783. The total acreage under cultivation is 267,860.

Reports that high school boys have proved inefficient as farm laborers in Southern California, are denied today by the State Council of Defense.

Investigation of the insect problems of Merced county will be undertaken by Prof. E. O. Essig of the entomology department of the State University.


Convinced that alien enemies are trying to set fire to fields of grain in Butte county, Superior Judge Gregory last Monday called a meeting of the County Council of Defense to discuss methods of combatting the danger.

Despite widespread belief that California faced a serious farm labor shortage, the farmers of the State have not called on the public employment bureaus for harvest hands to any extent, according to a report issued by C. B. Sexton, superintendent of the State employment bureau.

The extreme hot weather, Thursday, Friday and Saturday of last week in Southern California hurt the fruit crop very materially. The exact extent of the damage, however, is not yet known. Apricots in the low lands, it is said, suffered heavily, while those in the foothills stood the heat much better. The berry crop has been cut short. Walnuts, it is said, stood the heat better than anything else.

Word comes from Washington that

the first issue of the Farm Loan bonds will be offered to the public about July 1. From \$100,000,000 to \$150,000,000 of the bonds bearing four and a half per cent interest will be issued probably within a year. The twelve Federal Land banks, through the Farm Loan board, have concluded an arrangement with a group of investment bankers under which one half of the issue up to \$30,000,000 during the next six months will be marketed by the bankers. It is understood that the bonds will be sold at a premium.



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AXLE GREASE
WHITIER COBURN CO.
SAN FRANCISCO, CALIF.

These buckets are handy and useful after the grease has been used. They serve to remind you that while using the C. & S. Axle Grease you had no trouble with the wheels.

Whitier Coburn Company
San Francisco

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WINE TANKS

FERMENTING TANKS

WATER TANKS

OIL TANKS

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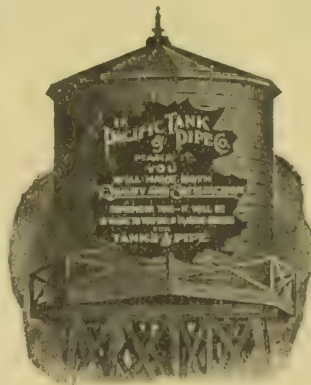
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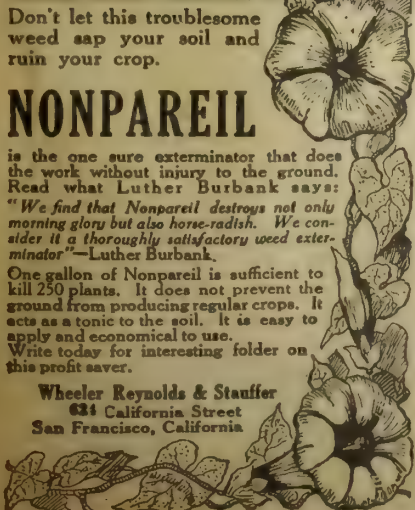
Don't let this troublesome weed sap your soil and ruin your crop.

NONPAREIL

is the one sure exterminator that does the work without injury to the ground. Read what Luther Burbank says: "We find that Nonpareil destroys not only morning glory but also horse-radish. We consider it a thoroughly satisfactory weed exterminator."—Luther Burbank.

One gallon of Nonpareil is sufficient to kill 250 plants. It does not prevent the ground from producing regular crops. It acts as a tonic to the soil. It is easy to apply and economical to use. Write today for interesting folder on this profit saver.

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624 California Street
San Francisco, California



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We have NOW on hand a liberal stock of

OLIVER CULTIVATORS
BAILOR 2-ROW BEAN CULTIVATORS
BLACK HAWK 2-ROW BEAN PLANTERS

The success of and demand for these machines have been phenomenal.

We advise placing your order promptly before stocks are again exhausted.

Order direct or through your local Oliver Agent. Circulars on request.

OLIVER CHILLED PLOW WORKS
SAN FRANCISCO, CAL.

Holsteins Adapted to Diversified Farming

Last week we announced that the Pacific Rural Press prize for May in the Dairy Cow Competition was awarded to F. Stenzel of San Lorenzo. Of the seven prizes awarded since the beginning of the contest six have been won by Holstein herds. The Stenzel herd has been well up toward the head every month since it was entered. In April, it was a close second to the winning herd. The May record was a remarkable one for a grade herd. The five cows averaged 84.64 pounds butterfat, average test 3.9 per cent. "Alice," the top cow, made 102.853 pounds (128.5 pounds butter) test 4.3 per cent. She was the only cow in the entire contest, grade or purebred reaching 100 pounds. She is 6 years old and the record was made in the third month of her lactation period.

J. J. Sullivan, manager of the herd, did the feeding. The ration

to beef, and to this class must we look for any increase in meat production. While doubtless more money would be made by feeding strictly beef type animals, yet in many instances the small feeder can not secure these when he can handle them to best advantage. But, he can get young and old dairy stock, and the Holstein has the largest frame to carry the meat. Some one has said that in buying meat at the butcher shop that we buy—beef.

Although the Stenzel herd contains such excellent grades as shown in the prize group, it is being gradually worked over to purebreds. Of the 120 cows now in milk, more than 50 are registered Holsteins. One of these, Pauline Inka DeKol Kate, a 6-year-old, calved May 25, and on June 6 completed a 7-day test with a record of 30.1 pounds, test 4.4. Her daughter by Dutchland Sir Pietertje



Pauline Inka De Kol Kate—6 years old. Calved May 25. On June 6th completed weekly test of 30.1 lbs. butterfat. Test 4.4.

consisted of 25 lbs. malt and 10 lbs. dried beet pulp per cow per day in addition to green alfalfa.

Although the Stenzel herd is a comparatively young one, it has been developed to a high state of production, the average for the entire herd being over 4 gallons per day, testing well over 3½ per cent. Mr. Stenzel believes in close culling. He says he chose to breed Holsteins for two reasons, first because he likes them best, and second because both the males and females that do not come up to his dairy requirements make good beef. He will not sell to another dairyman an animal that is not good enough for his own herd.

In saying that Holsteins make good beef, Mr. Stenzel helps to answer the question that has been in the minds of many farmers of late. There are in every section of the State farmers who can raise extra feed and market it through feeding

Creamelle, has a record of 24.43 pounds made as a senior yearling.

The sires used on both purebreds and grades have high production and high test breeding back of them. Besides Dutchland Sir Pietertje Creamelle, whose first ten daughters in milk have records at 2 years or younger averaging 20 lbs., there is a son of King Segis, and another is a son of King Korndyke Sadie Vale.

The Holstein herd fits well into the scheme of diversified farming of 1000 fertile acres of the Stenzel ranch. There are 200 acres of orchard, mostly pears and cots, 80 acres of currants, 100 acres of field crops, peas, rhubarb, tomatoes, etc., 100 acres of alfalfa, 100 acres of barley (looks like 30 sacks per acre now), 125 acres grain hay, and the balance marsh pasture. The cows consume the pasture and hay, and furnish fertilizer for the field and orchard crops.

Convenient Milk-Cooling and Shed Outfit.

A concrete-floored, 36 stanchioned milk shed rests on level ground, just below the separator and aerator room. Then, still higher on a small hill, sat a 200-gallon water tank of metal, with wet canvas hanging around the sides, with overhead a thatched roof. The water is piped to the cooler, and runs through and on out to a large tank at the high end of the milk shed. This tank trough serves two purposes—the cows drink from it and afterward the water is used to slush out the shed. The manure, water and all is not wasted,

but runs out into the irrigation ditch and on to the alfalfa. This equipment is in operation at the San Pasqual Ranch Company's place, San Diego County.

WEIGHT OF MILK.

There is no legal standard for the weight of a gallon of milk, but in order to compare the weight and measure of milk, 8.6 pounds has been taken by dairy authorities as the weight of a gallon of average testing milk. This would make one quart weigh 2.15 pounds.

Dutchland Sir Pietertje Creamelle's

Ten First Daughters in Milk have average records of 20 Pounds as two-year olds or younger.



MARIE CLOTHILDE PONTIAC CREAMELLE
Junior 2 years old record: Milk 391, Butter 22.52, Test 4.6 per cent.

Two of These are California Champion Two-Year Olds



PAULINE INKA DE KOL CREAMELLE
Senior yearling record: Milk 423.4, Butter 24.43 lbs., Test 4.62 per cent.

This wonderful record is convincing proof that this young herd sire transmits his big production and high test breeding.

You Need Some of His Blood in Your Herd

To bring up your butter fat production and increase your profits.

I am offering a few young bulls sired by him, out of big producing dams, and just ready for service, at reasonable prices.

WRITE OR CALL AND SEE THEM.

F. STENZEL, San Lorenzo, Cal.

BREEDER OF HIGH TEST HOLSTEINS.

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the oldest
and greatest
Separator
factory in
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SHARPLES
Famous Suction-Feed
Skims clean at any Speed
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Experiment stations and separator manufacturers all admit that all separators (except Sharples) lose considerable cream when turned slow or unevenly. Thousands of investigations have proved that 19 people out of 20 turn their separators too slow. Sharples is the only separator that:

- skims clean at widely varying speeds
- gives cream of unchanging thickness—all speeds
- skims your milk quicker when you turn faster
- has just one piece in the bowl—no discs
- has knee-low supply tank and once-a-month oiling

Over a million Sharples users in every dairying country of the world. Write for catalog to Department 31.

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Milk 606.9, Butter 31.68,
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AND
POLAND CHINA HOGS

All cows have A. R. O. records
Sire, Pontiac Wayne De Kol, 15979.
Son of Riverside Sadie De Kol Burke.

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WALTER F. MITCHELL,

Visalia, - - - California

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Large or small lots. Any order executed.

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RED HORN CALF MEAL
WRITE FOR INFORMATION
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New State Dairy Laws

[From summary by Secretary F. W. Andreasen, State Dairy Bureau.]

Two dairy bills have been signed by the Governor and will become effective next August.

All persons who desire to sell milk, cream, butter, ice cream or any other dairy products, except cheese, and who have not a proper pasteurizing plant or who do not expect to install one immediately should at once apply to the State Veterinarian to have their cows tested. After such an application has been filed in the State Veterinarian's office these persons can sell their product until the State Veterinarian has made the test.

The Satterwhite bill, in addition to the provisions of the 1915 pure milk law which provides that all milk must be from tuberculin tested cows unless it has been pasteurized before it reaches the consumer, provides that all butter, ice cream, and other dairy products except cheese shall be manufactured from milk or cream which has been obtained from cows that have successfully passed the tuberculin test or from cream which has been pasteurized.

Butter which is the product of untested cows and made from cream which is not pasteurized may be sold and used in the manufacture of food stuffs but must be labeled "for baking and cooking only." This butter shall be subjected to a temperature of 225 degrees Fahrenheit in the cooking.

All milk sold, except in bulk to the wholesale trade, shall be graded as under the 1915 pure milk law but no person shall label or sell any milk

as "Guaranteed milk," "Grade A milk" or "Grade B milk" unless he has been authorized by some milk inspection department approved by the State Dairy Bureau to do so.

All tests of cows for tuberculosis must be made by the State Veterinarian or one of his deputies or supervised by him or one of his deputies. It is the duty of the State Veterinarian to mark indelibly the reacting animals by tattooing the ear with the capital letter "T" one inch long; also to cause all reacting animals to be excluded from the healthy animals.

Dairies having not more than two milking cows and which are found by the inspecting departments to comply with the remaining provisions of the act shall be exempt from the scoring and labeling requirements.

All dairies, except those having not more than two milking cows, producing market milk or cream to be sold for table use must be scored by the milk inspection department.

Table cream must be graded the same as milk but the maximum bacterial count may be twice as great as that of the corresponding grade of milk.

The score card which must be used by the milk inspection departments in scoring the dairies is printed in the law and is the one now used by the State Dairy Bureau.

[Summary of Rose bill will be printed next week.—Ed.]

The De Laval Line



Acme Feed Cutter and Silo Filler

THE ONLY STEEL FRAME CYLINDER CUTTER ON THE MARKET

The steel frame is strongly riveted. It can't warp, as does the old style wooden frame. All bearings and shafts are held in rigid alignment at all times and vibration and wear reduced to a minimum.

BUILT FOR CAPACITY

The large throat of the Acme Feed Cutter, the Automatic Feeding Roller and the improved design of the traveling feed table, gives the machine ENORMOUS CAPACITY and makes it EASY TO FEED.

Knives are of special steel ground on the inside, spiral in shape and produce a uniform, perfectly cut silage that packs well in the silo.

BUILT IN SEVEN SIZES

The wide range of sizes make it adaptable to all cutter requirements.

THE ECONOMY OF CUTTING DRY FEED

The coarse hay usually nosed out and wasted by stock will be entirely consumed as food if first run through an Acme Cutter. You can actually make a saving of \$3.00 to \$5.00 per ton by this method.

ALFALFA MEAL

The Acme Alfalfa Meal Attachment enables the production of an excellent grade of alfalfa meal at a cost not exceeding half the cost of baling.

IF INTERESTED IN THE ECONOMICAL PRODUCTION OF STOCK FEED, SEND FOR CATALOG ON ACME CUTTERS AND COPY OF THE DE LAVAL DAIRY HAND BOOK (a veritable mine of dairy data). A postal will do.

DE LAVAL DAIRY SUPPLY CO.

61 Beale Street

San Francisco, Cal.

Imperial County Indian Corn Silage.

[Written for Pacific Rural Press.]

Does Indian corn grow successfully in Imperial Valley for silage? It does.

Will silage keep in good condition through the hot Imperial summer? It does.

Can a barley crop be successfully followed with Indian corn and milo for silage? It has, very satisfactorily, for G. V. Rude on the A. J. McPherin ranch in Imperial County, with twice the tonnage per acre that milo made.

Barley was irrigated, disked, smoothed, and planted as soon as possible afterward, both Indian corn and milo being planted July 10. Eleven acres of Indian corn (white Mexican) yielded 160 tons which was siloed October 25 and 26. It was planted flat and furrow-irrigated when knee high a month later. Another irrigation was given about September 10 and still another about 10 days before siloing. Each irrigation took 12 hours with a three-foot head. When ready for the silo, the top tassels and husks had

turned, though the stalks and leaves were green. The corn was in heavy dough stage, some being glazed and some dented. A 3/4-inch stream of water was run in with the cut silage, and it made a feed which the cows cleaned up better than the milo silage.

The greener you get alfalfa into the shock after it is dry on the outside the better the leaves stay on, and the better feed it makes. There is no danger of mold, if it is allowed to cure enough in the shock.

Do You Want Long Distance Backing?

We have a son of the California State Champion three-year-old for sale. Born October, 1915; Sired by PRINCE ALCARTEA KORNDYKE, whose dam is TILLY ALCARTEA.

The Dam of this young bull is not a fifty-pound cow, but she has to her credit 21,208 pounds milk and 860 pounds butter in one year, which is the largest record ever made in California by a Junior three-year-old.

If you are in the market for a bull, it will pay you to visit our ranch and see what we have to offer—at prices that will surprise you.

J. S. GIBSON CO., Box 97, Williams, Cal.

"THE NAME GIBSON INSURES QUALITY."

"It's Not What They're Worth But It's What You Get"

You are invited to visit the Home of the
STATE CHAMPION HEIFER

For Inspection and Sale Fifteen Head of the Choicest of the Breed

Write us for a descriptive booklet in reference to these fifteen remarkable males and females we are offering for sale.

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Breeders of Registered Holstein-Friesians

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REDWOOD TANKS.



35 years in this business. I sell direct to the consumer. You act as your own agent and save 20%. Tanks from 300 gallons to 10,000 gallons in stock. A stock tank 6x2 ft., \$10. For hot climates get my patent tank. Reference: Farmers & Merchants Bank of Stockton. Phone 2957.

R. F. WILSON, Stockton, Cal.

Live Stock and Dairy Notes

Livestock breeders all over the State are invited to send on postal cards, notes regarding their sales, State and County Fair intentions, new stock, etc.

The Dairy.

The Eighth Annual Dairy Cattle Congress is to be held October 1st to 7th inclusive, at Waterloo, Iowa.

The Government proposes to take the entire output of butter produced by the Loleta plant, Humboldt county.

The average price paid for cream by the creameries tributary to Hanford for the month of May was 39c, the total payroll being \$240,000.

Gotshall and Magruder of Ripon, report that Hengerveld Pietertje, the senior four-year-old, has just completed a record of 25.3 pounds of butterfat in seven days on official test.

Cheese making is being given more attention in Tulare county recently, as a result of the agitation for a greater production of nutritious foods. A cheese factory near Poplar has been started.

The Hollister plant of the Alpine Evaporated Cream Company commenced last week to can milk. Heretofore the milk which was condensed at Hollister was shipped to the company's plant at Gonzales for canning.

At the New England Ayrshire Club's consignment sale held at Springfield, Mass., June 14, 8 bulls and 46 females sold for \$34,870. The seven-year-old imported cow, Douglass Hall Violet, topped the sale at \$2,500.

San Jose dairymen want to raise the price of milk to a point where they can make some profit. Owing to war conditions and to short crops of hay and feed the situation of the dairymen is said to be critical in the extreme.

Giffle Gat, 22921, an Ayrshire cow owned by A. F. Spooner, Richville, N. Y., has completed a five-year cumulative Advanced Registry record with an average of 12056 pounds of milk, 500.86 pounds butterfat with an average test of 4.14 per cent.

F. Stenzel of San Lorenzo has sold to C. A. Beecher of Stockton the 15 months old Holstein bull, Dutchland Maria Clothilde de Wit 4th. This handsome youngster is a brother of a former State champion 2-year-old, and half brother to the present State champion.

At the Consignment Sale of Ayrshires by the New England Ayrshire Club, held at Springfield, Mass., on Thursday, June 14th, the average price for those catalogued was \$646 and six young things from one day to three weeks old sold for \$610.

The highest price for a female was \$2,500, paid for Douglas Hall Violet, "34934," imported and consigned by Hunter & Montgomery, Lessnessock, Scotland. The highest price paid for a bull was \$1400 for Lessnessock Sir Robert, "12992," imported and consigned by Hunter & Montgomery, Lessnessock, Scotland.

A note from the Bridgeford Company of Knightsen says: "It may be of interest to your readers to know of the official records we have made this past season, which we

consider very satisfactory. We tested eight cows five years old and over that made records of 31.72 to 24.38, the eight averaging 27.58 pounds butter in seven days. Also tested seven heifers from three years to four and one-half years old that made records from 27.72 to 22.60, the average being 25.21 pounds butter in seven days. Our six two-year-olds averaged 18.02 pounds butter in seven days. At the present time we have in our herd twenty-eight cows and heifers with A. R. O. records.

Beef Cattle.

It is said 400 cattle were shipped from the Porterville district last week, worth \$40,000. This brings the estimated value of cattle shipments up to date at \$600,000 for the year.

A shortage in wild feed for grazing purposes in the Tulare district and a consequent overloading of the cattle market are the cause of a slump in prices according to F. D. Campbell a local livestock buyer. Many fine young calves that normally would be kept until grown are now being sold.

At the Bellows Bros.' Shorthorn sale at Marysville, Mo., on June 14, eight bulls averaged \$1,678 and 43 females averaged \$1,033. The two-year-old bull, Rosewood Reserve, son of Fair Acres Sultan, sold for \$8,100, topping the sale. The bull was bought by Mrs. J. E. McAuley, Becket, Mont.

Swine.

M. Elwood Gates, Brentwood, Cal., reports the sale of two Berkshire sow pigs.

J. L. Gish, Laws, Cal., reports the sale of Berkshire boars to E. A. Frey, Exeter, Cal.

Butte City Ranch, Butte City, Cal., has sold four Berkshire pigs to C. O. Jordan, Colusa, Cal.

W. M. Carruthers of Mayfield, expects to show a dozen Berkshires at the fairs this season.

Whittier State School has sold the Berkshire bred sow Longfellow's Robin Belle 41st, to F. G. Wells, Delta, Utah.

The University of Nevada, Reno, Nevada, has sold three registered Berkshire boars to the Western Meat Co., San Francisco, Cal.

Edwin R. Shelden, San Francisco, Cal., reports the sale of eighteen Berkshire sows to the James Mills Orchard Corporation, Hamilton City, Cal.

Hans Duveneck of Ukiah reports the following sales of hogs: Bred sows to Theo. Mathis, Ukiah, and Williams Bros., Potter Valley; sow with litter to F. G. Batchner, Ukiah; boar to W. H. Whisler, Ukiah; four open gilts to E. A. Ford, Ukiah.

Two Berkshire sales of note are scheduled for August. The Carruthers Farms of Mayfield will, on August 1st, sell fifty head of sows and boars, including their show

herd. On the day following, at Escalon, A. B. Humphrey will offer a lot of sows and gilts of Grand Leader strain. California, as well as Coast breeders, will be interested attendants at these two sales.

Sheep.

It is reported that three wagon-loads of wool arrived recently at Alturas from Surprise Valley belonging to Henry Stephens of Fort Bidwell and Lasague brothers of Eagleville, which sold for 50c per pound, bringing \$15,000.

Livestock Miscellaneous.

Ray C. Hannan, Corning, Cal., has sold the boar Los Champion to Robert Kimble, Hanford, Cal.

With the assistance of eight new deputies soon to be added to the working force of his department, State Veterinarian Charles Keane is preparing to launch the most systematic and extensive campaign ever undertaken in California for the purpose of conserving the livestock supply. This campaign is to be started early in July.

2nd Annual Sale BERKSHIRES

CARRUTHERS FARMS MAYFIELD, CALIFORNIA

WEDNESDAY, AUGUST 1st

— 1 9 1 7 —

Sows are bred to Ames Rival 100, son of Rival's Champion Best; Iowana Rival Majestic 3d, a son of Rival's Champion; and Mayfield Champion, son of Ames Rival 70th.

44 Sows and 6 Boars

In this sale will be included ten sows and two boars, comprising the best show herd that has ever left Carruthers Farms.

Entire Show Herd will be Sold

The Best in Holstein Bulls

BY PROVEN SIRES AND PROVEN DAMS

The best interests of your dairy or breeding herd demand that your herd sire be bred in great producing and transmitting blood lines. You are safe in heading the herd with a son of one of the following well-known sires:

KING MEAD OF RIVERSIDE

Sire of the State Record cow, AAGGIE ACME OF RIVERSIDE 2D, 35.38 pounds butter in 7 days; 142.23 pounds in thirty days, and 885 pounds in seven months, strictly official test.

PRINCE GELSCHER WALKER

Sire of a number of state record heifers, including MISS VALLEY MEAD DE KOL WALKER, 36.75 pounds in 7 days as junior three-year-old; LADY HISKE WALKER, 34.25 pounds in 7 days as junior four-year-old.

SEGIS PONTIAC DE KOL BURKE

Sire of the finest lot of heifers we have ever owned. Three of the first ones average over 21 pounds butter in 7 days. Their type is unexcelled.

We offer sons of these sires out of dams with records of 25 to 30 pounds and yearly records in proportion. Write us your wants. Information and pedigrees on request.

A. W. Morris & Sons Corp. WOODLAND, CAL.

THE RURAL PRESS BROUGHT THE BUYERS.

The letter following, received from M. H. Tichenor, manager of the recent Vina Ranch Holstein Sale, and his statements endorsed by Vanderlyn Stow, Business Manager of Stanford University Trustees, gives the Pacific Rural Press pleasure in printing. The dispersal sale was a success in that every sale was bonafide and many new people were in attendance and bought stock, thus giving it wide distribution. Here is the letter:

"Permit me, please, at this time to express my appreciation of the great part played by The Pacific Rural Press in making the dispersal sale of the Stanford herd of purebred Holsteins at Vina the big success that it was.

"A large number of the purchasers at the sale advised me that they had been attracted to the dispersal by the advertisements and the reading notices they had seen in your publication.

"It was gratifying to note that The Pacific Rural Press and nearly all the other publications devoted wholly or in part to the livestock industry were ready and willing to do their part to advance Holstein breeding on the Pacific Coast. As a result of the co-operation extended, Leland Stanford Jr. University and myself as sale manager, 300 head of Holstein purebreds have been distributed among the herds in Oregon, Nevada and California, and lasting benefits have been made possible in the dairy and breeding work in the West.

"You should indeed feel proud of the work you are doing in your field."

Morris & Sons Sales and Records.
A. W. Morris & Sons of Woodland report the following recent Holstein sales: Geo. E. Spencer, Blythe, Cal., a son of King Mead of Riverside out of a dam with a yearly record of 810 lbs. butter, and she a three-quarter sister to Aralia De Kol. E. Susaeta, Valparaiso, Chile, a beautiful son of Segis Pontiac De Kol Burke out of Miss Blaney, 1008 pounds butter in a year. She is the dam of Miss Dutch, 30.05 pounds in seven days and 1025 pounds in a year. C. W. Lewis, Merrill, Ore., a good son of King Korn-dyke Pontiac and Ethel of Riverside, 801 pounds of butter in a year. Pacific Portland Cement Co., Cement, Cal., a son of King Mead of Riverside and Contenta Creamcup, 811 pounds butter in a year.

The test season is over and we have little to report in late records. Aagie Acme of Riverside 2d will soon complete her first eight months' official test. She has 710 pounds fat to her credit in seven months. Miss Dutch 2d has just made 26.70 at 4 years and is doing nicely in yearly test. As her dam and grand dam are both 1000 pound yearly cows, we hope to make this the first instance of three generations of 1000 pound cows, as so far as we can ascertain there are none on record at this time.

State Dairy Cow Competition for May.

A large number of dairy herds and individual animals were represented in the May State Dairy Cow Competition, conducted by Prof. F. W. Woll. Over 250 cows were entered in this noteworthy contest, and the records made were creditable to all the participants. The average production of the cows for the month was: Milk, 1309.7 pounds; butterfat, 53.660 pounds; and ranged from a minimum of 17.954 pounds to the remarkable achievement of the cow Alice, a Holstein grade, owned by F. Stenzel of San Lorenzo, which produced in the 30-day test 2552.3 pounds of milk, testing 4.03 per cent and 102.858 pounds butterfat. This cow is five years old, and was 51 days in milk at the time of the test. Mr. Stenzel was the winner of the Pacific Rural Press prize, offered for the highest production of butterfat for a herd of five grades. The winner of the McAlister & Sons' prize for the month, offered for the highest production of butterfat by a grade cow, was won by the Napa State Hospital, that institution's Monte 1st, a grade Holstein, showing up with 97.183 pounds (Stenzel, 102.858, being barred).

The butterfat percentages as a whole took a wide range, running from 2.59 per cent for a Holstein up to 6.9 per cent for a Guernsey. However, many of the cows on test which showed a low percentage of butterfat gave a very high production for the month. On the whole, the results of this Statewide contest are very satisfactory, as both the statistics of production and the butterfat percentages show a strong upward trend.

The Bureau of Fisheries, Department of Commerce, says whales and porpoises are mammals, like cattle and sheep, and their flesh is "meat" not "fish." In texture and appearance it resembles beef. It is devoid of all fishy taste. Fresh whale meat has been placed on the market in Seattle, Wash., and Portland, Ore. It met with a ready sale at 10c a pound and was placed on the menus of the hotels and restaurants under its proper name.

LIVESTOCK DIRECTORY.

Rates in this directory, 3c per word each issue; or if carried weekly for one year, 2 1/2c per word.

SWINE

Poland-Chinas.

SPECIAL SALE of weaned boar pigs of the famous Whitten Ranch Poland-Chinas. Get one and grow him out. He will put money-making quality into your herd. Prices very low; satisfaction guaranteed. Send for free booklet, "Hogs for Profit." Packed with valuable information; tells how to become successful. Ranch in Tulare county, but address owner, R. H. Whitten, 610A Security building, Los Angeles.

BEAOKS RANCH herd of registered Poland-Chinas. W. J. Hanna, Gilroy.

BOARS of serviceable age all sold. We have a few choice gilts bred to John Henry, an exceedingly choice boar. Also have a fine lot of fall pigs, either sex. Bar N Ranch, E. A. Noyes & Son, props., Sutter, Calif.

REGISTERED POLAND-CHINAS—Young boars ready for service. Weanling pigs, both sexes. Prices attractive for quick sales. J. H. Cook, Paradise, Cal.

CRAWSHAW'S CALIFORNIA CHINAS are prolific and profitable. Can fill your order for weanlings, either sex, for \$15.00 each. J. A. Crawshaw, Hanford, Cal.

LAKEVIEW STOCK FARM POLAND-CHINAS are money-makers. Satisfaction or money refunded. Geo. V. Beckman & Sons, Lodi, Cal.

NOW BOOKING ORDERS for spring pigs, either sex, from my prize-winning, large type Poland-China hogs. H. I. Marsh, Modesto, Cal.

POLAND-CHINAS—Big type combined with quality. Choice bred sows, gilts, boars. W. D. Trewthitt, Box 82A, Hanford, Cal.

REGISTERED POLAND-CHINA SWINE—Prize winners. Finest stock in the State. \$20 up. M. Bassett, Hanford, Cal.

POLAND-CHINA HOGS—Large type. 200 lbs. in 6 months. I guarantee to please you. O. L. Linn, Linview, Modesto, Cal.

BIG-TYPE POLAND-CHINAS—Stock from the best herds of the Middle West. N. Hauck, Alton, Humboldt county, Cal.

REGISTERED POLAND-CHINAS and Duroc-Jerseys. Cholera immune for life. T. H. Beckman, Lodi, Cal.

POLAND-CHINAS—Three extra fine boars, one large and two medium type. W. Bernstein, Hanford, Cal.

POLAND-CHINAS—Large type. The Browning Stock Farm. W. H. Browning, Woodland, Cal.

POLAND-CHINAS—A few gilts left at \$15 each. Edward A. Hall, R. F. D. 1, Watsonville, Cal.

REGISTERED POLAND-CHINAS—J. H. Hansborough, Route A, Modesto, Cal.

Berkshires.

GRAPEWILD FARM BERKSHIRES—World's Fair Grand Champion Grand Leader 2nd heads our herd, not only himself a champion, but the sire of Champions. At the 1916 California State fair his daughters won first in all of the senior sow classes, including the Grand Champion Sow. At the 1916 Oregon State Fair a Grand Leader sow was Junior Champion. We are offering a number of choice boars of exceptional breeding and are also booking orders for fall pigs. A. B. Humphrey, Escalon, San Joaquin Co., Cal.

BERKSHIRES sired by Maybaw's Leader 10th, one of outstanding sons of Champion, Grand Leader 2nd. Weaned pigs, \$15 each. They are dandies. Heavy boned kind that will grow into large hogs. Dallas Bachs, Hollister, Cal.

REGISTERED BERKSHIRES—Progeny of Improver B. Young stock now ready for sale. Start your herd with breed and strain of established reputation for California conditions. Geo. G. Meckfessel, Berlin, Cal.

BERKSHIRES—I have one of the best herds on the Pacific Coast, including Grand Champion Sow, Reserve Grand Champion Boar under one year, Third Aged Boar, etc. Frank A. Brush, Santa Rosa, Cal.

EFFICIENCY FIRST BERKSHIRES—Ten firsts, all championships Nevada State Fair, 1916. Laurel Champion and Grand Leader breeding; any age. Joseph Wilson, Jr., Mason, Nevada.

BERKSHIRES—Young stock from prolific stock now ready. Can furnish trios or more if desired. Write for prices. W. G. Thompson, Napa, Cal.

IMMUNIZED NORMANDY BERKSHIRES—Good type. Breeding stock, any age, for sale at all times. Cast iron guarantee. Arlington Smith, Visalia, Cal.

ROSE CREST BERKSHIRES—Rivals Champion Best blood. Open and bred gilts. Service boars. F. L. Hall, Perris, Cal.

REGISTERED BERKSHIRES—Young stock for sale sired by a first prize son of Laurel Champion; prices right. Imperial Stock Farm, Morgan Hill, Cal.

CARRUTHERS FARMS BERKSHIRES—Cholera immune. Second annual sale August 1st, 1917. Mayfield, Cal.

MODEL HERD BERKSHIRES—Bred for size and quality. Weanlings and gilts. J. L. Gish, Laws, Cal.

HOPLAND STOCK FARM—Registered Berkshires. Prices on application. Hopland, Cal.

REGISTERED BERKSHIRES—Geo. M. York, Modesto, Cal.

BERKSHIRES—Fair Oaks Ranch, Willits, Cal.

Duroc-Jerseys.

PRICED FOR IMMEDIATE SALE—Entire breeding herd, including Champion, First, Second and Silver trophy winners. The offering is composed of outstanding show animals, show prospects, their dams and coming fall show herd. Winnings of eight entries at State Fair and Butte County Exposition: 2 silver cups, 2 Champions, 6 Firsts, 2 Seconds, 1 Third. Prices \$20 and up. Haden Smith, Woodland.

RANCHO RUBIO DUROCS—Only a few September gilts left. One corking good fall boar by Orion Model, son of the last International Grand Champion. Place your orders now for weaned boar pigs. Best I ever raised. Elmer Lamb, Ceres, Cal.

REGISTERED DUROC-JERSEYS—Service boars from prize-winning stock are money-makers. They grow faster. New England California Corporation, Ripon, Cal.

DUROC-JERSEYS—Herd boars. E. N. Colonel and Tulare Boy. Sweepstakes winner at Fresno, 1915. Choice breeding stock. J. P. Walker, Visalia.

MOST MONEY IN DUROC-JERSEYS—Bred sows and weanlings, either sex, at all times. Delta Farm and Live Stock Co., Colton, Cal.

REGISTERED DUROCS of guaranteed breeding. All ages. Weaned pigs, \$10. H. E. Boudier & Son, Napa.

HEAVY BONED DUROCS—A few service boars for sale. Ormondale Co., Route 1, Redwood City, Cal.

REGISTERED DUROCS—Crimson Wonder stock. Young stock, both sexes. L. D. Collins, Denair, Cal.

REGISTERED DUROC-JERSEY SWINE—Both sexes. Big-boned type. B. F. Kendall, Hardwick.

DUROCS—Defender, Clitic B and Golden Model strain. The big type. Allen Thompson, Tulare.

DOS HERMANOS DUROCS—A few choice spring pigs. Hans Duveneck, Ukiah, Cal.

REGISTERED DUROCS—All from prize-winning stock. W. P. Harkey, Gridley, Cal.

CROLEY'S BALANCED HOG FEED—the cheapest feed to fatten hogs. Write Geo. H. Croley Co., Inc., Live Stock Supplies, 631-637 Brannan st., San Francisco.

WINTON DUROC-JERSEY FARM, Winton, Cal.—High-class purebred hogs, both sexes, any age.

BIG TYPE DUROCS—Well grown; out February and March; pigs of either sex in any quantity we ship only the tops and butcher the culls. F. M. Johnson, Napa, Cal.

DUROC-JERSEY REGISTERED HOGS—River Bend Farm, St. Helena, Cal.

THE DEVILBISS HERD of large type Durocs. J. M. Devilbiss, Patterson, Calif.

REGISTERED DUROC-JERSEYS—S. S. Southworth, Napa.

Yorkshires.

LARGE YORKSHIRES—The ideal hog for the progressive farmer. Young stock for sale. A. L. Tubbs Co., Calistoga, Cal.

LARGE YORKSHIRES—A few choice young boars and gilts for sale. Riverina Farm, Modesto, Cal.

Chester Whites.

THE BILLIKEN HERD of Chester Whites—Every rancher, every fruit grower, every one who can possibly do so, should keep at least one brood sow; we must increase our meat supply. I am offering some bred gilts and sows at very reasonable prices to help this along. 2 young tested sows to farrow in July; 6 spring gilts to farrow in September; 18 fall gilts to farrow in October; boars ready for service; weaned pigs, both sexes, ready for delivery. Write for special price lists and circulars. C. B. Cunningham, Mills, California.

Essex.

LITTLE BLACK ESSEX—New crop nearly ripe. A few fine youngsters left. L. W. Millard, Yolo, Cal.

Hampshires.

BELLA VISTA HAMPSHIRE—Service boars and bred or open gilts. J. W. Henderson, First National, Berkeley.

Tamworths.

BEAVER LODGE TAMWORTH—Service boars. Write for prices and pedigrees. A. G. Lane, Amsterdam, Cal.

DAIRY CATTLE.

Holsteins.

GRANDSONS of HENGELVELD DE KOL and out of A. R. O. cows for sale. Prices reasonable. Write for pedigrees. Many years of constructive breeding has made my herd one of the prominent ones of the San Joaquin Valley. R. F. Guerin, Visalia, Cal.

REGISTERED HOLSTEINS—Grandsons of King Segis and of world's record cow Cream-ele Vale. Will build up the production and value of your herd. Write or call and see them. F. H. Stenzel, San Lorenzo, Cal.

FOU SALE—Two registered cows, one with record of 2559. Sister to other one made 23.10 as a two-year-old. Both bred to a 30-lb. sire. Geo. Kounias, Modesto.

TULARE GUERNSEY AND HOLSTEIN Farm is offering young bulls of both breeds. Excellent breeding. Prices reasonable. W. J. Higdon, Tulare, Cal.

SPECIAL SALE DURING JULY—Registered Holstein bulls, three weeks to thirty months of age. Sunnybrook Ranch, Willits, Cal.

THE MCCLLOUD RIVER LUMBER CO., McCloud, Cal.—High-class thoroughbred Holstein bulls for sale. Write for prices and pedigrees.

J. H. HARLAN, WOODLAND, CAL.—Breeder of Registered Holsteins. Sold out at present. Watch for announcement on King Valdessa.

PACKWOOD FARM HOLSTEINS—Fine young bulls of serviceable age out of tested A. R. O. cows. W. F. Mitchell, Visalia.

TWO SERVICEABLE SONS of Colantha Sir Pontiac Aagie for sale. Moorland Farm, K. W. Abbott, Milpitas, Cal.

THE HENDERSON CO.—Breeders and importers. Registered Holsteins. Sacramento Bank Bldg., Sacramento.

BREEDERS of REGISTERED HOLSTEIN cattle and Berkshire pigs. Whittier State School, Whittier, Cal.

REGISTERED HOLSTEINS—A. W. Morris & Sons, Corp., Importers and Breeders, Woodland, Cal.

CREAMCUP HERD—Registered Holsteins; Pontiac bull calves. M. Holdridge, Modesto, Cal.

REGISTERED HOLSTEIN BULLS, \$50 to \$150. Glorieta Stock Farm, Woodland, Cal.

BREEDERS of REGISTERED HOLSTEIN Cattle—McAlister & Sons, Chico, Cal.

GOTSCHALL & MAGRUDER—Breeders of Registered Holstein-Friesians. Ripon, Cal.

CHOICE HOLSTEIN bulls for sale. No females. Milbrae Dairy, Milbrae, Cal.

REGISTERED HOLSTEIN BULLS for sale. C. L. Morse, Route B, Modesto, Cal.

REGISTERED HOLSTEIN-FRIESIAN CATTLE—J. M. Campbell, Escalon, Cal.

REGISTERED HOLSTEIN CATTLE—B. E. Freeman, Route B, Modesto, Cal.

BREEDER of HOLSTEIN-FRIESIAN CATTLE—Dr. Ben Stetson, Napa, Cal.

A. R. O. HERD of HOLSTEINS—Alex. Whaley, Tulare, Cal.

Jerseys.

N. H. LOCKE CO., LOCKEFORD, CAL.—Jerseys. Bull No. 432, born Dec. 2, 1915; sire, King's Valet; dam, Dorrin's Lassie of L. She produced 604.8 lbs. fat in 361 days at 4 years. Price, \$200. Bull No. 491, Oct. 20, 1916. King's Valet-Sunshine of L. 56.9 lbs. fat third month. Price, \$100. Records made under dairy conditions at a profit. Service bulls and bull calves with profitable production backing. Prices, \$50 and up. Poland-China boar Big Wonder, over 400 lbs., a good breeder, \$50. Chester White Swine—Boars and gilts.

BREEDER of REGISTERED JERSEY CATTLE—Duroc Swine. Young stock for sale. W. J. Hackett, Ceres, Cal.

JERSEY BULLS from Register of Merit cows. C. D. Hayworth, Modesto, Cal.

VENADERA HERD of JERSEYS offers calves from Register of Merit cows with official yearly records. Write for list of bulls. Guy H. Miller, Route 1, Modesto, Cal.

JERSEY BULLS—Sons of Gertie's Lad and Gertie's Son's Victor. A. A. Jenkins, Tulare, Cal.

YOUNG REGISTERED JERSEY BULL Calves at reasonable prices. O. J. Ames, Oakland.

CHOICE REGISTERED JERSEY FEMALES—Fresh and Springers. Breeding and individuality the very best. McLouth, Orland, Cal.

REGISTERED JERSEYS—Young bulls and bull calves. T. B. Purvine, Petaluma, Cal.

Guernseys.

PACIFIC GUERNSEY HERD—Cattle selected from the best imported and Advanced Register Stock. Now offering choice bulls. C. S. Rasmussen, Lodi, Cal.

EDGEMOOR FARM GUERNSEYS—First in the show ring and in official records. Few animals of either sex for sale. Edgemoor Farm, Santee, Cal.

REGISTERED GUERNSEY BULL—No. 24342 from A. B. and imported stock. Write for prices and pedigree. A. G. Lane, Amsterdam, Cal.

BELLA VISTA GUERNSEYS—Males from A. B. dams, \$125 and up. J. W. Henderson, First National, Berkeley.

Ayrshires.

AYRSHIRES—Registered—75 head. All ages. Young stock for sale. Le Baron Estate Co., Valley Ford, Cal.

FAIRVIEW AYRSHIRES and DURHAMS—Bred for quality. Choice young stock. Geo. Fay, Sheridan, Nevada.

AYRSHIRES—Registered; all ages. E. B. McFarland, 412 Claus Spreckels Bldg., San Francisco.

PLEASANT VALLEY AYRSHIRE FARM—Registered bulls for sale. Write for prices. Sullivan Investment Co., 1942 Folsom street, San Francisco.

BEEF CATTLE.

SCOTCH and SCOTCH-TOPPED SHORT-HORNS—We have the largest herd of straight Scotch cows in California. Foundation stock of both sexes for sale; also a choice lot of range bulls. Barco Ranch, Hollister, Cal.

D. O. LIVELY STOCK FARM, INC., 216 Hobart Bldg., San Francisco, breeders of Hereford cattle. A few choice heifers for sale. We buy and sell livestock on commission. Farm at Mayfield, Cal.

REGISTERED YEARLING SHORTHORN Bulls—Heavy-boned, thick-meated Scotch and Scotch-topped breeding. Ormondale Co., Route 1, Redwood City, Cal.

BREEDERS of REGISTERED SHORTHORNS—Milk strain. Choice young stock for sale. John Lynch Ranch, Box 321, Petaluma.

REGISTERED MILK and BEEF SHORTHORNS—Bulls and Heifers for sale; catalog free. Harrison, London Ranch, Glen Ellen, Cal.

REGISTERED and UNREGISTERED—Shorthorn bulls for sale. Paicines Ranch Co., 320 Sharon Bldg., San Francisco.

SPRINGDALE STOCK FARM—Choice Shorthorns, bred for size and quality. W. C. Short, Reno, Nevada.

INNISFAIR DAIRY SHORTHORNS—Registered young bulls for sale. Alexander & Kellogg, Suisun, Cal.

HOPLAND STOCK FARM—Registered Shorthorns. Prices on application. Hopland, Cal.

REGISTERED HEREFORDS—H. H. Gable, Diamond G Ranch, Esparto, Cal.

SIMON NEWMAN CO., Breeders of Registered Herefords, Newman, Cal.

GEORGE WATERSON—Breeder registered Herefords. Bishop, Cal.

SHORTHORNS—Carruthers Farms, Mayfield, Cal.

SHORTHORNS—Fair Oaks Ranch, Willits, Cal.

SHEEP and GOATS.

D. E. KELLHER, importer and breeder of Hampshire sheep, Eugene, California, offers for sale a choice lot of Hampshire Ram Lambs, sired by Walnut Hall and Butterfield; rams purchased at Salt Lake, August, 1916; lambs ready for delivery after July 15, 1917. Inspection and correspondence invited.

F. A. MECHAN ESTATE, Petaluma, Cal.—Breeders and importers of Shropshire, Rambouillet and American Merinos, both sexes. Also Red Polled cattle. Take electric car at Petaluma or Santa Rosa for Live Oak Ranch.

KAUPKE BROS., WOODLAND, CAL.—Breeders and importers of Hampshire sheep.

DORSETS and ROMNEYS—Dorset ram lambs for sale. John E. Marble, Los Angeles.

BISHOP BROS., SAN RAMON, CAL.—Breeders and importers Shropshires.

CHAS. KIMBLE—Breeder and Importer of Rambouillets. Hanford, Cal.

HORSES and MULES.

REGISTERED PERCHERONS—Herd stud, first prize, Reserve Champion, P. P. I. M., 1915. John Matley, Reno, Nevada.

MISCELLANEOUS.

FOR SALE—Dairy of choice cows, two to four years old. Full blood unregistered Holstein and Jerseys, all milking. Also full blood Holstein bull, weight 2,000. B. S. Burrough, Cloverdale, Cal.

CROLEY'S BALANCED DAIRY FEED—the cheap milk producer; and Croley's Calf Meal—the best California calf raiser. Geo. H. Croley Co., Inc., 631-637 Brannan st., San Francisco.

BUTTE CITY RANCH—Shorthorns, Shropshires, Cholera Immune Berkshire and Ponies. Special offering of sows, pigs and bulls. Butte City Ranch, Box P, Butte City, Glenn Co., Cal.

FRED, FREE RANGE, State, Government land, any amount. Booklet free. Joseph Clark, Sacramento.

Sour Buttermilk for Calves.

[Written for Pacific Rural Press.]

Feeding sour buttermilk to calves was practiced in Denmark 30 years ago when L. J. Lindrum was a boy, so when he got a chance to do it for himself last spring he tried it out on a dozen calves, as some other dairymen in his district are doing.

"They are the nicest calves in Humboldt County, I think," said he when questioned as to the value of sour buttermilk. "I have just turned them out to grass at about three months old. They had fresh milk (a mixture of colostrum and other) until three or four weeks old. After that, the bunch got 225 pounds of sour buttermilk every day till I turned them out. They had some hay the first month; but were turned onto ryegrass and clover pasture when we changed to buttermilk; because just then the weather cleared. I didn't even make a gradual change to the buttermilk but gave them a good feed the first day. They took to it quick, and never did have the scours or other troubles. I didn't increase the quantity as they grew because they kept

so fat and sleek. They are now rolling fat like veal.

"The buttermilk is pasteurized while still in the cream; and instead of containing only perhaps 1½ hundredths of 1 per cent of butterfat, it may contain 3 or 4 tenths of 1 per cent. There is nothing like butterfat to make a calf sleek.

"The buttermilk was always delivered sweet, but I dumped it into barrels where there was a little left from the previous feeding. That would act as a 'starter'; and in warm weather, it would be sour within 12 hours. We are not bothered by flies in this country—seldom see any even around a creamery. The barrels never got rank or foul smelling.

"The trouble with feeding sweet buttermilk is that you must take pains to keep it sweet always. If occasionally it does sour and the calves are accustomed to it sweet, they get the scours and may lose their appetites and be set back for a week."

CHOPPED NEEDLEGRASS HARMLESS.

To the Editor: How can we feed alfalfa mixed with needle grass? Its beards go through the cows' jaws and get into their eyes. I would rather have foxtail.—B. M. B., Corning.

G. H. Harmon of Tehama County fed 60 tons of first and second cutting alfalfa last winter to his sheep. They would scarcely touch it in the regular hay form, but cleaned up 2¾ pounds per day per ewe after he chopped it to half-inch lengths. No soreness was found; no other feed was given between September 20 and February 10; and the 160 ewes had 175 lambs this spring. Chopping your needlegrass would seem a promising expedient for your cowfeed.

SKIM MILK TO PUREBRED HOGS.

One of the few people in Humboldt County who feed skim milk to hogs is Nate Hauck of Alton who separates the milk from his 10 cows on the ranch rather than send it to the creamery as is customary. While farmers generally consider it more profitable to sell their skim milk to the casein factories, Mr. Hauck finds the opposite to be true with his small herd of big type Poland Chinas. This is because they are registered and of the square-built, blocky type desired

by pork makers. They are built to make best use of good feed as contrasted with hill-bred hogs fattened over a year old. His yearling herd boar is a splendid specimen and won second prize at the State Fair last fall. Spring gilts took 4th and 5th prizes, and four pigs of a litter took 4th prize. The Poland-China competition last year was good and strong. Some 30 fine thrifty pigs remain from the spring farrowing by the five registered sows Mr. Hauck has kept.

BRONCHO GRASS.

To the Editor: The grass you recently sent me for identification is an introduced species from Europe and is known to botanists as Giant Brome grass. Earlier works on grasses call it Bromus giganteus. More recently it has been called Bromus villosus. By the ranchers it is very frequently referred to as needle grass or broncho grass. As you no doubt are aware, it occupies a very large portion of the vacant lots in Berkeley. In early spring, where on account of its abundance it is of some value as feed for the tethered cows. Very soon, however, it becomes unpalatable and when the seeds are formed with their sharp callus pointed ends, they are really harmful and pierce the mouths of stock, similar to foxtails. It is one of the grasses that I think we could well get rid of without suffering very

much even in these days of high cost of living.—P. B. Kennedy, Dept. Grass and Forage Plants Investigations, Berkeley.

We have mislaid the name of the sender of the above described speci-

men. As we remember it was from the upper Sacramento Valley. The species is, however, unfortunately widely distributed in this State.—Editor.

Keep Your Hogs Healthy

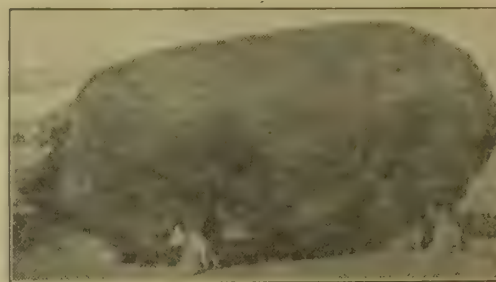
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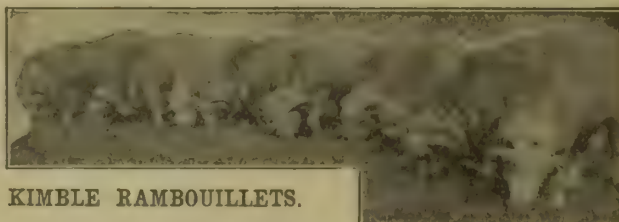
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Guernsey Bull Ithen Daisy's May King of Langwater 17349. Purchased of Florham Farms, Madison, N. J., by B. E. Nixon, to be added to his herd at Yountville, Cal. Price paid was \$8,000. This bull will be a valuable addition to the Guernsey sires on the Western Coast. His sire is Dolly Dimple's May King of Langwater 12997, an Advanced Register grandson of Imp. Ithen Daisy 3d 15630, A. E. 100, whose records are 534 pounds of fat at two years and 714 pounds of fat at four and one-half years.

A Boost for the Coyote.

To the Editor: A law was passed in Sacramento last winter making the destruction of ground squirrels compulsory and placing the enforcement of the law with the County Horticultural Commissioners. The supervisorial boards of the various counties, in their efforts to handle their finances economically, are overlooking their best bet. As an example, one of our semi-mountainous counties in 1916 paid for the scalps of coyotes the sum of \$1,805. In that county there are practically no sheep, and the depredations of the coyotes were principally on the poultry and pigs of a few mountain dwellers and could not have been over \$4 or \$5, whilst the loss from squirrels and rabbits on range and fruit trees must have been so many thousands.

In 1885-6 few coyotes were in the Coast Range, and in those years Napa county was almost bankrupt by paying a 5c scalp bounty on squirrels. Four men on the Redington stock range poisoned and scalped in one month 11,000. Later, with coyotes plentiful, the rodents disappeared almost entirely, while today, with coyotes worth \$10 and \$20 each, the squirrels are again a menace. The lesson is obvious. The \$1,805 bounty mentioned jacked only \$170.90 of equaling the salary and expenses of the Horticultural Commissioner for that county in 1916, or \$1,975.95. I have seen as many as 25 coyotes in a band in Modoc county, and yet sheep and goats are leading industries there, and coyote killing discouraged because of their value as exterminators of rabbits and squirrels. Why not let individuals guard their flocks more closely and permit coyotes, foxes and wild cats to hunt the ranges unmolested and thus save the ranges, orchards and grain fields, so valuable today?

Napa, Cal.

AN OBSERVER.

FRESH HOG WALLOWS.

[Written for Pacific Rural Press.]

Hogs generally need wallows in hot weather, says John F. Myers, the Berkshire man. They are not able to cool off by perspiration; since their only perspiration is through the three openings inside each front leg. That, and their covering of fat which holds the heat, is why hogs die so easily from overheating. A cement wallow cleaned regularly, or a mud wallow supplied with running water is desirable and sanitary.

While the advisability of having hog wallows is beginning to be questioned, there is no doubt that where they are used they ought to be kept fresh. And in the present farm conditions it is unfair to one's hogs or to those of his neighbor's to let them wallow in irrigation ditches and let the water run on to the next herd. Sam Robinson of Imperial county avoids this by running settled water from his reservoir through a ditch to the hog pen on a side hill. It passes slowly through board-bottomed wallows and on to the river. On level ranches it may be possible to drain the wallows to certain fields with profit to all concerned, and safety to the next neighbor's hogs.

TWENTY-CENT MILK PROFIT-ABLE HOG FEED.

To sell milk for 20 cents a hundred to casein factories or feed it to 14-cent hogs. That is the question many dairy farmers are undecided on but not L. L. Long of Stanislaus county. He feeds hogs.

This spring Mr. Long conducted an experiment with 18 head of highly bred Chester White and Poland-China pigs to see whether he was warranted in selling his skim milk at the prevailing price.

The pigs were fed skim milk and "gyp" corn and run on a small fox-tail pasture as soon as they were weaned, and marketed at an average weight of 160 pounds each. Four of them were only four months old at the time and the others were five months old.

Careful account was kept of the milk and grain fed to the lot, the skim milk being charged for at the rate of 20 cents a hundred and the "gyp" corn at \$2.30 a sack.

A total of 5,000 pounds of skim milk was fed to the lot and 50 sacks of "gyp" corn, making a charge of \$100 for skim milk and \$115 for corn or a total of \$215, not allowing for pasture which was poor.

When sold the hogs brought 12 cents a pound at the ranch or \$327.60 for the lot, showing a margin of \$112.60 for labor, interest, etc.

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1. They won't fall over in high wind.
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IT MAKES THEM FAT.

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VETERINARY QUERIES

[Answered by Dr. H. B. Winttingham, Petaluma, Cal.]

[Subscribers wishing an immediate reply should send money order for \$1.00. No charge for questions answered through this department. Name and address of subscriber must accompany each query.]

A Lazy Bull.

To the Editor: I wrote you a question concerning a lazy bull about eight or nine days ago. Please answer immediately.—G. F. J., Oak Bar.

If this animal will not breed, he does not fulfill the requirements for which he was purchased, and as such ability on the animal's part constitutes an implied guarantee, the seller can in most cases be made to replace the animal. Responsible breeders are only too glad to do this. In case you wish to treat the animal, there is a preparation of Yohimbine sold by an Eastern house at a cost of \$10 which might help the animal.

Lambs Have Sore Mouth.

To the Editor: My sister and I have twelve motherless lambs. When we got them one had a small dark-colored scab on its mouth and now it has spread all over its mouth in large, puffed-out sores, which bleed but no matter runs from them. One of the others is taking it now. Please tell me what to do to check it.—H. M. G., Yerington.

This is necrotic sore mouth. Paint the sores several times a day with a mixture of equal parts tincture iodine and tincture iron. Feed those affected with a separate bottle and be sure to boil all bottles between feedings.

Not Necessarily Tuberculosis.

To the Editor: If a cow coughs once in awhile, is that any sign she has tuberculosis? How can a man have a cow tested for tuberculosis? This cow is a young, healthy-looking cow, but she coughs occasionally. Can I send her milk away to have it tested?—W. T. J., Stent.

A cough of this kind does not indicate tuberculosis unless associated with other symptoms. The test is given by the injection of a few drops of tuberculin test fluid in the skin below the tail. The milk is never used as a means of detecting the disease.

Horse in Bad Condition.

To the Editor: I have a large horse, about ten years old; has had sore shoulders for over a year; cannot get them healed up. Every little scratch he gets seems to fester. He has also had the grease heel all this time. I have tried different remedies without effect. His breath also has a bad odor.—C. H. E., Turlock.

The animal is evidently very much out of condition. Give him one dram doses of potassium iodide dissolved in water three times a day over a period of at least three weeks.

Sweeny.

To the Editor: By accident I destroyed the copy of the Press that contained a remedy for a sweeny in a horse's shoulder. Will you kindly send me that copy or a copy of the remedy itself?—J. L. McD., Lemoore.

The hypodermic injection of a few drops rectified oil turpentine in several places over the shrunken area is almost a specific. It is recommended, however, that a qualified veterinarian do this.

Test This Cow for Tuberculosis.

To the Editor: I have a dairy cow about twelve years old and within the last month she has become very poor. She eats and chews her cud but stands around and acts as if she had some foreign substance in her throat. Opens her mouth and lolls her tongue around every little while.—I. C., Visalia.

Have this cow tested for tuberculosis before instituting further treatment.

Cow Has Tuberculosis.

To the Editor: My milk cow has a lump slowly forming in the back part of her udder, close to where the hind teat joins the udder. It has taken several months to get about as large as a .44-caliber bullet. Is there a cure for this?—E. J. A., St. Helena.

Have this cow tested for tuberculosis.

ORCHARD VETCH FOR COWS.

[Written for Pacific Rural Press.]

Vetch in the old three-acre apple orchard belonging to Nate Hauck of Humboldt county, among many such orchards, makes heavy growth in spite of the shade of the interlocking branches. It is cut for green feed for the cows; and would make two cuttings per season if the first one should come before blooming. That, however, is inconvenient in a soiling system, and Mr. Hauck thinks the immature vetch has too little value.

INCREASING MEAT PRICES

The prices of meat animals—hogs, cattle, sheep, and chickens—to producers of the United States increased 1.2 per cent from April 15 to May 15; in the past 7 years prices decreased in like period 1.2 per cent. On May 15 the index figures of prices for these meat animals was about 48.4 per cent higher than a year ago, 74.2 per cent higher than two years ago, and 71.1 per cent higher than the average of the past 7 years on May 15.



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LUMBER, PLUMBING, ELECTRICAL, Nails, Wire Fencing, Poultry Netting, Rubber Hose. Ten carloads purchased before the advance.

Nails \$4.00

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Roof tile 5c

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Poultry for Profit

[Written for Pacific Rural Press by Susan Swaysgood, Pomona.]

THE THREE-DAY POULTRY COURSE AT POMONA.

Last week the three-day study in the care and breeding of poultry was given. In a lecture on the housing of poultry, Prof. Dougherty showed by charts just what he meant by a house that was "hen comfortable." This is a shed roof house with tight roof, three tight sides and open front built so that it gets winter sunshine, is well lighted and well ventilated, without being draughty. He advocates tight floors, of cement when convenient, and it should be convenient to work in and cost but little. He had charts showing the results of some very interesting experiments. They apply especially to the class of people who read these items—the farming and small ranching class. But one experiment alone will show that the man who has land for his poultry to run on, even partly natural, can make a much better profit, with half the labor and cost, than the man who shuts them up and feeds everything from the store. When a man has to hire a part of his work done the cost of labor makes a big difference. The profit is with the man who has range for his flock and has a flock that, when he gets ready to sell, will weigh up something like a dollar or a dollar and a half each hen.

There were a number of questions asked Prof. Dougherty that brought out some valuable information, especially on the feeding question. The feed question was thoroughly threshed out but no substitute for the grain ration was offered, nor for the mash, except to help out with green feed. One important point brought out in the discussion was in reference to animal food. The experiment station has tried out the system some poultrymen have been using of feeding 30 per cent animal food in the form of fish meal and beef scrap. It is found that with 7 per cent they got just as many eggs as when they fed 30 per cent, but the best results came from using buttermilk and leaving out the beef scrap and fish meal.

Quite a number of poultrymen came in from outside places, some from Riverside, Ontario, and even Santa Ana registered and everything was listened to very attentively. The poultrymen of Southern California are wideawake and anxious to know all that is for the betterment of farm poultry or intensive poultry keeping.

THE TRYING HOT SPELL.

The extremely hot weather we had last week end calls for great care in looking after the flocks. Plenty of ventilation, shade and clean, cool water will save the day where the neglect to provide either one may mean disaster.

All around the southern counties there were many deaths of grown fowls reported and large numbers of rabbits; many of these could have been saved by taking proper precautions. Sunshine is good in its place, and we all have been anxious to have some of it, but we surely got an overdose this last hot spell. I went out when the mercury was up at 110 and wet my chicken yards, gave everything fresh water, and tacked up

gunny sacks to keep the glare of the sun from any exposed yard, and I am glad I did. My loss was too little bantam hens that were too fat. But this should make everybody more diligent in getting things into comfortable shape so that with the least amount of effort chickens can be given needed care. Don't be afraid of the fresh air; it's good for them. Close, crowded coops are neither healthy nor comfortable, neither are they profitable. And that is the chief object in keeping a flock of chickens. There may be a few who keep them for fancy purposes, but the number is small, we all want to make a profit on our investment and labor, and the biggest profit comes from giving the flock the very best care possible.

A BAD CASE OF TICKS.

To the Editor: I have some chicks about two months old. I notice they are covered with some kind of ticks. These ticks are in bunches as large as a dime. The heads seem to be buried in the flesh. The chicks have never roosted with or near other chickens, but roost with their mother away from all other fowls. I tried putting coal oil on some and it killed the ticks and the chickens too. Can give me a remedy?—Mrs. T. W. McC., Terra Bella.

Make an effort to spray the ground where the chickens run because that is where the ticks are, and if you rid the chickens of one lot another lot will take their place. It will be best for you to dip these young chicks during the warm part of the day, and put them in a wire coop with some straw for a floor to dry them off. Take one tablespoonful of Creolin to a quart of warm water and make as much as necessary, at this ratio, to immerse the chick in overhead. It won't hurt any part of the chick; the only thing is to do it when they can be dried off quick. Then clean up, burn all rubbish likely to harbor the vermin and spray your grounds and buildings with any good commercial spray or with crude oil and crude carbolic, one pint of the latter to 1 gallon of the former.

Purebred and Commercial

[Written for the Pacific Rural Press by Harry Mortenson, Suisun.]

THE MOLT.

The better an egg producer a hen, the later in the season she will molt. During this period she discontinues, to a large extent at least, the business of egg production while she is assuming her new garb. Hens that shed late take less time to molt, while those that molt early lay more early winter eggs but hens that molt late lay more eggs during the year. The oldest feathers drop out first. Chicks and hens feather more quickly in such areas as might affect the vital parts. Experiments at the various stations have proven that chicks from incubator to laying period experience four molts, either partial or complete.

RUSHING THE MOLT.

Attempts have been made to hasten the molt in various ways. It has been found at Cornell and Pennsylvania that starved hens lay less eggs at a greater cost after the molt than those fed normally during the molt. Food should not be decreased since heat supplying foods are necessary and the feathers themselves are largely protein and require generous supplies. It is a good practice to furnish an

extra amount of oily feed, such as old process, linseed oil meal and sunflower seed, which by the way is one of the cheapest grains. An abundance of granulated bone to furnish phosphates. Feather making demands nitrogenous food. There appears to be about 13½ pounds of mineral matter in the bodies of 100 Leghorn hens and 125 pounds in the eggs which they normally produce. The quantity of feathers was estimated at 4.53 per cent of total weight of the fowl.

Body—Nitrogen, 3.45 per cent; ash, 3.8 per cent.
Feathers—Nitrogen, 14.10 per cent; lime, .138 per cent.

Eggs—Nitrogen, 1.76 per cent; ash, 9.7 per cent.

The experiments at Cornell proved that it does not pay to force the molt and it is apparently the best policy to let the hens lay when they will.

POULTRY MANURE.

It has been estimated that the night droppings average 30 pounds per hen per year. While off the roosts the average is probably 45 pounds per fowl. If preserved without needless loss, the droppings from 1000 birds would probably be worth at least \$300.

In these days of high price feed, the poultrymen should raise a lot of green stuff. To produce tender succulent greens we must fertilize and for this purpose the straw and sweepings from the yards should be used. Apply water to force the vegetation in order to make a pleasing salad for "Biddy."

A WORD AS TO QUERIES.

We receive inquiries from time to time that are very indefinite. It is almost impossible to make an intelligent reply unless we know what you want. If your hens are not doing well, possibly we can help you out. But be sure to state definitely how you are handling the flock. The same holds true in case of disease—state the symptoms as clearly as possible.

CULL, CULL CULL!

Now is the time to begin. The best flock in the world needs culling. Poultry business today is not an easy game. Allow no "star boarders." Ship them to the market. If you have only a few, eat a hen for Sunday dinner. At the present price of meat, poultry is cheaper than beef.

OLD IRON SPOON RANCH SPEAKS UP.

Dear Editor: Please excuse an old No. 7 Remington machine, new ribbon, and a sure 'nuff bum operator, but here's hoping that the very tender words of appreciation that follow will make your consideration worth while. I had the luck to be able to read the Press for a long time for nothing (low down trick), but since moving here have been a subscriber. Couldn't get along without it. 'Nuff said. But this is tough on you, as your advertisers have reaped the benefits of your good work.

Your paper has seemed to steer clear of fake ads, so I generally take a try at your advertisers when they have anything that I need. I don't know Croley, the feed man of Frisco, from a hole in the ground, but met his goods through your columns and made my man here supply me with some, and so in my mind Croley is as strong as his fish meal, which is going some, as it is darn good feed.

The immediate cause of this outburst is your coming to life on the poultry page. It really seems as if

your man Barnum might have by chance whispered in your ear some of my sentiments. When I saw the old boy tramp two miles through a wash to get a neighbor of mine for a subscription, and land it while he was trying to get reason into a 60-horsepower gas pump engine, I thought just enough of Stranger Barnum to look at him again and wish him luck.

I am a poultryman—alive and paying my bills. It means the same anyway you read it, front or backways. White leghorns bred to lay, regardless of stained ear lobes or off-colored feathers. The ordinary papers do not give the commercial pointers. Think the Pacific Rural has started something.

Here is an idea in a few words: Offer a string of small gold coin or free advertising space in your valuable paper as prizes to commercial poultrymen. What new truth, trick or trade-winner have you learned this year as your best new poultry wrinkle?

The leading poultryman of any community knows what his neighbors are doing and all of the town folks and outside ranchers know what he is doing, but what are the other big fellows doing? Poultrymen are a queer lot of "bugs," but they are good fellows at heart, and this thought may be a leader in shaping your policy for the new page. Wishing you all kinds of luck with your "real" Rural Press.—William T. Hadley, Old Iron Spoon Ranch, Ontario, Cal.

Poultry Breeders' Directory

Rates in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

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BARRED PLYMOUTH ROCKS—Winners at leading shows and wonderful layers. Choice stock for sale. "Nothing better in poultry." Catalog free. Chas. H. Volden, box 398, Los Gatos, Cal.

INCUBATORS—For Essex Model incubators at factory prices, write Geo. H. Croley Co., Inc., Poultry Supplies, 631-637 Brannan St., San Francisco.

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EASTMAN'S BRED-TO-LAY Barred Plymouth Rocks. Fairmead Poultry Farm, Fairmead, Cal.

BRONZE TURKEYS—Albert M. Hart, Clements, Cal.



Some Popular Uses

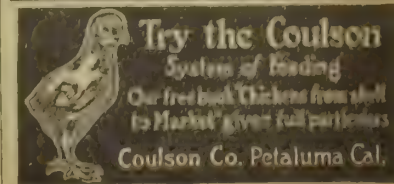
Formaldehyde kills flies, purifies stables, stalls and milk cans, kills disease germs in kennels and chicken houses and clothing. It is a deodorant for refrigerators, sinks, drains, cesspools.

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PERTH AMBOY CHEMICAL WORKS
100 WILLIAM STREET NEW YORK,



Mrs. Best's Letter.

SUITABLE SUITINGS FOR GIRLS.

My Dear Friends: I am wondering if all of my readers know about the Junior departments in the large stores. This is a department for girls from twelve to eighteen, where you can find suitable garments for a girl even if she is as large as her mother.

To show how important two of the large stores in the city consider it, they are having their stores remodeled with an entire floor devoted to the needs of the miss.

On this floor can be found all wearing apparel suitable, including corsets, and all intimate garments.

The styles shown here are always girlish and individual without being freakish and what is most interesting, the prices usually run lower than for the same grade of garments in the women's department. This is an advantage that many small women take advantage of as well.

I had occasion this week to go through one of these departments and such good looking things as I did see. There are wonderfully attractive light suits of velour, nearly all with a check or plaid design, and beige color basket weave as well as the very popular jersey cloth in white and colors. These suits are almost all in a modified Norfolk style well suited to the figure of the growing girl. Nearly all are belted, some of the same material and others with broad black patent leather belts that snap together in front. Many of the skirts are box pleated, stitched down from the waist line to well over the hips and then allowed to swing freely open. Nearly all of these suits have pockets, large patch ones on the coats and smaller inserted ones in the skirt. In the separate skirts of wash goods, the models are simple, gathered back and front with pockets in many varied designs. The separate wash skirt is proving its popularity this year for wear with the lingerie blouse and the many varieties of middies. A skirt of white with middy of blue or some bright color is very good style for informal beach and mountain wear. The new middies are much longer than the regulation garment and much fuller as well.

Wash dresses are always good style for girls and I certainly saw some attractive ones. In linens, rose, blue and brown seem the most popular colors and they are all made in loose models hanging from the shoulders with a belt that is an ornament alone, but does not confine the garment at all.

Many of these belts are in self colors with hand embroidery and others are of broad black velvet ribbon, placed loosely around the waist, with ends hanging down the back. The collars and cuffs are many times of a contrasting color as the blue linens will have tan collar and cuffs and the rose will have green but always with a little touch of hand work.

Ginghams in bright plaids are shown in simple styles—some of them with pleated skirts of plaid and Eton jacket effects in a plain contrasting color scalloped all around the bottom. These have small, white turnover collars worn with a soft tie.

For lighter, more dressy garments,

there are dotted swisses, white net and voiles both plain and striped and white pique with hand work.

But there is almost an entire absence of ruffles or trimmings of that type. All skirts end with a simple hem and all collars are tailored in style with a hem or picoting at the edge so that the plainer the garment, the better style it seems to be.

ROSABELLA BEST.

SAVE YOUR BOTTLES.

Every housekeeper is urged to save all wide necked bottles to use for putting up preserves, jellies and jams. Fruit juices can be put up in ordinary bottles. In this way, regular jars and cans can be reserved for canning vegetables, soups and meats.

There threatens to be a serious shortage of regular jars and cans this season, so this saving and utilizing of bottles is important.

The fruit products named will keep perfectly in these bottles if sealed with corks and paraffin. Any receptacle of glass, crockery or porcelain may be sealed in this way.

CANNING GOOSEBERRIES.

Gooseberries canned in a heavy syrup make good sauce or pies. They should be picked while green and have stems and blossom end removed and blanched in hot water. After cooling with cold water, pack into jars and add rubber and cover and sterilize. The syrup to be added should be of equal parts of sugar and water.

Gooseberry preserves are made by cooking the gooseberries until tender and then adding cup for cup of sugar and cooking until a deep red color. This is delicious with meat.

LOW LIGHTS.

Of all the things that make a room unhomelike, and unattractive, there is nothing any worse than a high light, especially if it be unshaded.

The strain on the eyes in reading or working by such a light is tremendous; but that is not the only bad feature. To give the room a homelike look, the light must be low, on stand or table, throwing a pleasant light on the family circle. A soft, colored shade makes a much more useful light than a clear, white one.

DRYING VEGETABLES.

The home canning specialists are not only urging that everyone can products, but that such products as apples, pumpkins, squash and the like be dried, reserving the jars and cans for the products that cannot be conserved in other ways.

THE HOME CIRCLE

PICKLED WALNUTS.

Editor Home Circle: Will you print the following recipe for pickled walnuts for Mrs. E. A. F., Sebastopol, taken from an old English cook book?—Mrs. J. H. B., Glendale.

Gather the green walnuts before the shell forms inside and as near of a size as possible. Scald them and then rub off the top skin, soak in brine, strong enough to float an egg, for 3 days. Drain, soak again 3 days, drain, soak again for 4 days, making 10 days in all to be in the brine; using fresh brine each time. Mix equal parts of black pepper, ginger, Jamaica pepper, a little less cloves and a few blades of mace. Add 1 cup of white mustard seed to $\frac{3}{4}$ cup of the mixed spices. Boil some vinegar 10 minutes together with 20 whole pieces of ginger, 1 clove of garlic to each $\frac{1}{2}$ gallon of vinegar. Put nuts in jars with the first named spices well strewn through, then fill the jars with the vinegar, when quite cold and cover. A little of the vinegar imparts a fine flavor to stews and hashes. A little brown sugar can be boiled in the pickle if a sweet taste is preferred.

Mrs. E. R. F., Santa Clara; A. M. A. of Santa Clara and E. H. of Vacaville also sent recipes that were substantially the same, except that they boil the spices and vinegar together instead of sprinkling them over the nuts and repeat the boiling for three days before the nuts are put away. They also drain the nuts well after being in the brine and put in the sun to darken.

HOME MADE LOGANBERRY JUICE.

The simplest way to make loganberry juice is to put the berries in a granite pan or preserving kettle and nearly cover with water. Heat nearly to the boiling point, but do not boil. Stir occasionally and crush the fruit to extract the juice. After the fruit is soft, strain through a cloth jelly bag, allowing the mixture to drip thoroughly. Put the juice back on the stove, adding one-third sugar by measure. Heat again to near boiling and bottle. Drive the corks in tight and cover with paraffine. This is a heavy juice and must be diluted before drinking. From one-half to an inch of this juice in the bottom of a glass of water will make a drink of sufficient strength. In making punches, the addition of the juice of four lemons to a gallon adds to the flavor. Some people like a richer syrup and that can be made by adding eleven pounds of sugar to each gallon of juice instead of adding one-third of the measure. This is especially good for punch with the addition of lemons.

CHERRY PUDDING.

Make a plain cake batter as follows: 1 cup sweet milk, 1 cup sugar, 1 egg well beaten, 1 tablespoon butter creamed, enough flour to make stiff batter, 2 teaspoons baking powder, beat well. Butter cake pan having tube in center; put in layer of batter, thin layer of cherries, etc., having batter on top. Place pan in light steamer over boiling water and steam until well done. May be tested like cake, will probably take 1 hour. Either canned or fresh fruit may be used, but it must be drained and juice used to flavor the following sauce: Work 1 tablespoon flour thoroughly with 2 teaspoons butter; add enough sugar to suit taste, juice from cherries, juice from 1 lemon, pinch of salt, season with cinnamon; cook until thick.

Good Health.

[By H. E. Pastor, M. D.]

Fasting as an Antidote to Feasting.

A very effective remedy for many of the ills of life is fasting, within limits. Perhaps more bodily ailments are due to unrestrained indulgence in food than to any other cause. This fact is widely recognized and is an old-time belief. So strong has been the faith of many peoples in the benefits to be derived from abstaining from food, either wholly or in part, for extended periods of time, that the practice has been incorporated in the religions of many civilized peoples. That the practice has intrinsic worth there can be no doubt, though occasional fanatics who have entertained extreme views on this subject have tended to bring it into disrepute. However, the remedy costs nothing; indeed, you can save money by taking the treatment. If you are troubled with dyspepsia or bowel derangement it might be well to give it a trial. Its good results may surprise you.

Hay Fever (Rose Cold).

Hay fever is a very refractory disease to cure. In rural districts it is usually caused by the irritation of the nasal passages resulting from exposure to plant pollen floating in the atmosphere, some plants being greater offenders than others in this respect. The most prompt and effective relief is obtained by removal from the pollen-infected district. The mucous membrane of the nose may be partially protected by a gentle but thorough application of vaseline to its surface with the little finger, or otherwise, or by spraying with an atomizer vaseline liquefied by gentle heat. The writer has obtained excellent results in obstinate cases of hay fever by the internal administration of Fowler's Solution in five-drop doses three times a day, continued for, say, two weeks at a time, with an intermission of two weeks, then a resumption of the treatment for the same period, and so on. Fowler's Solution is a preparation of arsenic, which is unsafe to use except under a physician's advice.

A Handy Water Disinfectant.

Where the purity of drinking water is suspected there is perhaps no more effective way of destroying its impurities than by boiling for 15 or 20 minutes or longer and then filtering through charcoal, powdered magnesite, or filter paper. The water, however, is usable without the filtering process which is merely resorted to for the purpose of eliminating from the water the visible or invisible organisms destroyed in the boiling. A simple water disinfectant kept in the medicine cabinet of almost every family is tincture of iodine. About three drops in a quart of water is sufficient to eliminate disease-producing bacteria, according to Frank Bachmann, chemist and bacteriologist, California State Board of Health.

House flies, active typhoid carriers, are among the dirtiest things that enter your homes. They come from sewers, privies, and manure heaps, carrying all sorts of filth on their feet, which they deposit on the food on which they light.

WORK THOU FOR PLEASURE.

Kenyon Cox

Work thou for pleasure; paint or sing
or carve
The thing thou lovest, though the
body starve.
Who works for glory misses oft the
goal;
Who works for money coins his very
soul.
Work for work's sake then, and it
well may be
That these things shall be added unto
these.

—Kenyon Cox.

LOSING WELL.

Bob sat in the barn doorway, staring moodily down the road. When he heard Dick's step, he began whistling. Usually Bob was proud of his brother's friendship, but just now that brother was the last person in

the world that he cared to see. Still, it had to be done, and the sooner the better. Bob whistled, and braced himself for the greeting he dreaded. It came in the form of a hearty hand upon his shoulder and a voice full of cheer.

"It was hard, sure enough, old man; but you'll have better luck next time."

"There won't be any next time," Bob muttered gruffly. "It's no use."

Dick nodded. "I know. I've been there. Do you remember the time I lost the race I'd been so sure of? I felt just as you do—disgusted—ready to throw the whole thing over. It was Prof. Dana who saved me. He came up and shook hands and congratulated me. I can remember his words now. 'Field,' he said, 'you put up a good race, and next time you'll win; but you've won a bigger victory today in proving yourself a good loser. I'm proud of you.' I wasn't, you know. I was black as thunder inside, but that made me think. Sometimes I've thought I didn't get anything in college so valuable as that sentence. It fits in everywhere."

This time Bob nodded.—Forward.

TO WASH UNDERWEAR.

When washing knit underwear or other garments by hand which have heavy buttons, button the garment together, as if being worn, and turn wrong side out. This does away with the annoying scraping on the washboard, which injures the buttons and also protects them as they go through the wringer.

TO RENOVATE OLD GILT FRAMES.

Simple gilt frames that are past retouching with gilt paint may have the gilding removed with fine sand paper or by rubbing down the surface with a moistened cloth dipped in powdered pumice or rotten stone. Paint with white, black or any desired color of enamel paint and apply later a coat of varnish.

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Absolutely
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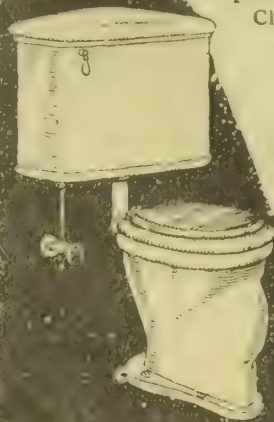
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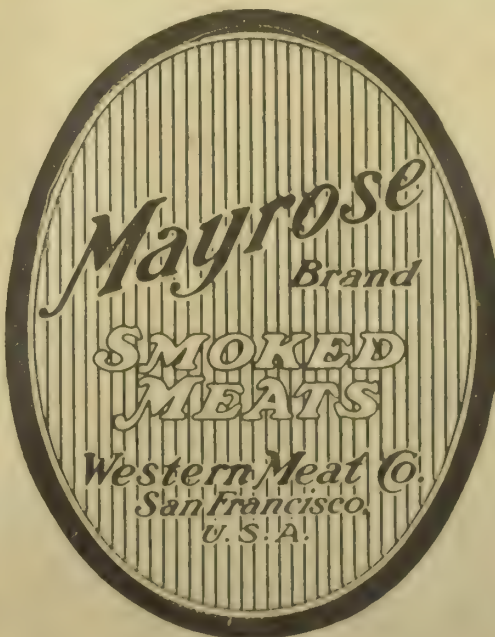
—give the California pig a chance

—make him the biggest animal in California—most valuable and most in demand. That will help make farms more prosperous. It will keep money in California, keep it circulating—coming back to you.

Tell your dealer to give you

MAY ROSE

ham and bacon—the choicest meats—cured in our government inspected plant in San Francisco—freshly smoked—sweet and tender—give the California pig a chance.



WESTERN MEAT COMPANY
SAN FRANCISCO

SAN FRANCISCO.

San Francisco, June 27, 1917.

WHEAT.

Although there was a sudden drop of 2 cents in wheat at Chicago on Monday, no reflex action of decided character developed here, this market being already depressed and in listless condition. In this market very little is offering, and in absence of transactions of size enough on which to base values there can be no changes from quotations of last week. So little interest is being shown in the proceedings of the Call Board that the U. S. Army recruiting station, installed in the Exchange, does not interfere in the least with daily proceedings of grain board.

Sonora wheat, re-cleaned.....None offered
Northern Club.....None offered
California Club, per ctl.....None offered
Northern Bluestem.....\$4.75@4.80
Northern Red.....4.55@4.60
Russian Red.....Nominal

BARLEY.

Choice Feed registered a small decline on Tuesday, due perhaps more to sympathy with brewing than from any marked lack of interest. Dealers buying only in small quantities, and any movement of the market is hardly perceptible. New crop barley is showing a production heavier than anticipated and is of uniform good quality.

Shipping, per ctl.....Nominal
Brewing.....Nominal
Choice Feed, per ctl.....\$2.00@2.15

OATS.

Unless signs fail and quality of further receipts show improvement, oats should command high prices this year. Samples of oats—especially Reds—arriving in this market are very light and meet with no response from buyers. At present old crop has preference over new.

White Feed, per ctl.....\$2.55@2.60

BEANS.

Only one change in values this week, and that is limas. Due to lack of inquiry, with listless market, they have receded from last week's quotations, showing values of \$13 to \$13.50. Otherwise market generally is fairly steady. No activity expected until U. S. Government's action in food regulations is determined and its program made known to the public. There is a large increase in bean acreage this season, but the crop is not far enough advanced for it to have any bearing on old stocks.

Bayos, per ctl.....\$10.50@11.00
Blackeyes.....9.25@9.50
Cranberry beans.....11.25@11.50
Horse beans.....5.50@6.00
Small whites (south).....15.50@15.75
Large whites.....15.50@15.75
Pinks.....10.50@11.00
Limas (south, re-cleaned).....13.00@13.50
Red kidney.....13.50@14.50
Mexican reds.....11.25@11.50
Tepary beans.....None offered
Garbanzos.....\$6.25@6.50

CORN.

The outlook for prohibition of the use of corn in the manufacture of alcoholic beverages has proved depressing in the Eastern markets, causing declines which may be temporary only and which, as yet, have had no similar effect on this market. In fact, during the last few days, owing to a scarcity of stocks, Eastern Yellow has been firmer. All lines remain unchanged in quotations. The regular half-yearly settlements among the grain men, occurring July 1st, have had the effect of distracting attention from the grain market until after the first of July.

(First-hand prices on strictly first-class grain, San Francisco.)
Eastern Yellow, per ctl., bulk.....\$3.30@3.40
California, sacked.....3.30@3.35
Milo Maize.....None offered
Egyptian.....\$3.75@3.90

HAY.

Arrivals of hay for the past week have exceeded 1,500 tons, most of which was new. Old hay practically all cleaned up and both dealers and consumers are glad to be rid of it with its prohibitive prices. Still, present figures for new crop are abnormally high for the time of year and not at all satisfactory to the trade. Many producers are asking prohibitive prices, which does not tend toward encouragement of local business or to allow California to compete in export market. Abnormally high prices of old hay throughout the spring were caused solely by the killing out by frost of the pastures. This condition being now removed and a good-sized crop being harvested, we may expect from now on to see values regulated by the old rule of supply and demand. The second cutting of alfalfa is coming into the market and is selling at about the same figures as prevailed for first cutting, although there is a weakness developing, in view of grain hay becoming lower.

Wheat, No. 1.....19.00@19.50
No. 2.....17.50@18.00
Tame oats.....19.00
Wild oats.....14.00@16.00
Barley.....15.00@16.50
Alfalfa, new, first cut.....14.00@15.50
Stock hay, new.....10.50@12.00
Straw, per bale.....1.00@1.10

FEEDSTUFFS.

After the first of July considerable more inquiry may be expected, as pastures in many districts are nearly fed down and green feed generally is drying up. At present there is no vim to the market and trading is very slack—so slack that, in order to close transactions, sellers have to make concessions. There is still no tankage offering and old cake is off the market. In view of present conditions, it is not possible to change quotations.

(Per ton, San Francisco.)

Best Pulp, per ton.....\$8.00@40.00
Alfalfa meal, per ton.....30.00@32.00
Bran, per ton.....38.00@40.00
Oil Cake.....None offered
Coconut cake or meal.....\$8.00@39.00
Cracked corn.....72.00@73.00
Middlings.....49.00@50.00
Rolled barley.....45.00@46.00

THE MARKET REPORTS

Figures Given are Independent and Reliable.
Prices Quoted as Paid to Producers.

Tankage.....None offered
Rolled oats.....\$53.00@54.00
Rice middlings.....None offered
Rice bran.....\$30.00@35.00
Shorts.....43.00@45.00

POTATOES, ONIONS, ETC.

Quite a heavy drop has taken place in new potatoes, due to heavy receipts. However, from the fact that there is considerable difficulty in obtaining labor to dig potatoes, it is not likely that, in spite of a heavy crop, they will be markedly cheap until conditions change. Onions coming in plentifully and cannot hold at firm values. On Wednesday they were decidedly weak and had declined. Rhubarb hangs fire, and there is so little call for it that it is hardly worth quoting. Tomatoes took a drop during the week, owing to warm spell of weather in the valleys, which speeded up ripening. All other lines are well supplied, and market is sufficiently active to care for them without depreciation in price.

Asparagus, per box.....\$1.50@2.25
Peas, per lb.....2@3c
String beans, per lb.....2@3c
Wax beans, per lb.....2@3c
Hubbard squash, per lb.....None
Summer squash, per crate.....50@75c
Cucumbers, per box.....\$1.00@1.25
Lettuce, per crate.....50c@1.00
Celery, Delta, per crate.....\$1.00@1.50
Tomatoes, per crate.....1.75@2.00
Rhubarb, bay, per box.....75c@1.15
do, San Jose.....\$1.15@1.25
Potatoes, Salinas.....Cleaned up
Oregon.....None
New, per ctl.....\$2.25@2.75
Sweeties, per lb.....None offered
Onions, green, per box.....50@60c
Delta reds, new, per sack.....75c@1.00
Garlic, per lb.....31c@6c

POULTRY.

With higher Eastern markets no stocks are arriving from outside the State. This leaves the market in control of domestic poultry, which is arriving in sufficient quantities to supply all demands. On Wednesday 410 coops arrived, which represents an average day's receipts at this time. Values held firmly at last week's prices, and market on all lines is in a healthy condition.

Turkeys, live, lb.....20@22c
do, dressed, large, lb.....Nominal
Broilers, 1½ to 2 lbs.....25@28c
do, under 1 lb.....20@21c
do, 1½ lbs.....23@24c
Fryers.....28@30c
Hens, extra, per lb., colored.....21@25c
Small leghorn.....17@18c
Smooth young roosters, per lb. (8 lbs. and over).....30c
Old roosters, per lb.....12@14c
Geese, per lb.....19@20c
Squabs, per doz.....\$2.50@3.00
Ducks.....18@20c
Old.....17@18c
Belgian Hares (live).....14@15c

BUTTER.

Prices fluctuated throughout the week and finally closed Wednesday with a de-

cline of one-half cent from high water mark. Receipts are falling off, having totaled for the past week 594,300 pounds, against 715,800 for previous week. Still, with no shipping orders, conditions are unstable and unsatisfactory, the shorter receipts being unable to hold values. Advances from Australia state that concerns there offer to deliver butter in this market at 35 cents, a thing which, if consummated, will not be conducive to firm prices here.

Thurs. Fri. Sat. Mon. Tu. Wed.
Extras.....36 37 38½ 35½ 36½ 35½
Prime firsts.....35½ 35½ 36 35 36 35

EGGS.

Receipts heavy during week, but not so large as previous week, aggregating 17,779 cases, against 18,467 cases for the previous week. Since Wednesday of last week there has been a decline of a cent, although for several days the price dropped to and stayed at 30 cents for extras. Then came a slight advance, which was maintained Wednesday in spite of no sales that day. Less demand by reason of long vacation season served to offset smaller receipts.

Thurs. Fri. Sat. Mon. Tu. Wed.
Extras.....30 30 30 30 30½ 30½
Extra 1sts.....29½ 29½ 29½ 29½ 29½ 29½
Extra pullets.....27 28 28 28 28½ 28½
Ex. 1sts pul.....26½ 26½ 27 27 27 27

CHEESE.

Considering the established weakness of last week, it is rather surprising that Y. A.'s have held up, although California Flats lost a half cent. For Jacks there has been a demand in the East to supply a depletion caused by European shippings, and cheese makers have been oil curing them to withstand the heat. During the week 297,300 pounds of cheese arrived in San Francisco, an increase over the previous week's arrivals of 238,800 pounds.

Y. A.'s.....24c
Fancy Calif. Flats, per lb.....20½c
Monterey cheese.....16@19c

DECIDUOUS FRUITS.

Cherries are arriving in rather poor condition owing to warm weather, and Royal Annes are cheaper. Apricots, peaches and plums have fallen in value in proportion to increase in supply. New apples meet with approval, selling readily at from 75 cents to \$2 per box, according to size. Figs are now coming in from Yolo and Sacramento counties, as well as from Imperial Valley and other southern points. Cantaloupes move rapidly at prevailing prices. Market on Wednesday was very active all along the line.

Apples, per box.....75c@82.10
Cantaloupes, per crate.....\$1.50@2.00
Cucumbers, per lb.....5@6c
Cherries, bulk, per lb.....4@7c
Royal Anne, per lb.....7@9c
Apricots, per crate.....75c@1.25
Peaches, per crate.....75c@1.25
Figs, per box.....\$1.00@1.50
Plums, crates.....75c@1.25

CITRUS FRUITS.

Old Sol is responsible for the exceed-

ingly heavy demand for lemons throughout the valleys. Orders are still plentiful for all points, but the advance of the past week of 50 cents has brought them to the notch probably. Valencia's have sold well, but not at advances. Tangerines are practically off the market.

Oranges:
Valencias.....\$3.25@3.50
Navels, fancy, per box.....\$4.00@4.25
do, Choice.....2.75@3.00
Lemons:
Fancy, per box.....\$6.00@6.50
Choice.....5.25@5.50
Standard.....3.75@4.00
Lemonettes.....8.25@8.50
Grapefruit, fancy.....8.00@8.50

DRIED FRUITS.

Merely a steady jobbing trade of small dimensions serves to keep quotations unchanged. No transactions of any importance are noted. From indications, the output of dried peaches and apricots will be larger than anticipated earlier in the season. (Net to growers, bulk basis, f. o. b. shipping point.)

Apples, new crop.....9@10c
Apricots, per lb.....10½@11c
Figs, bulk, 1916.....5½@6c
do, 1917.....5½@6c
do, white, 1917.....6@6½c
Calimyrna, 1917.....9@10c
Prunes, 4-size basis, 1917.....6½@7c
Prunes, 1916.....8½@9c
Pears.....8@10c
Peaches, 1917.....5½@6c

BERRIES.

Good straws are worth a little more money this week. All berries arriving great quantities, and values, although unchanged, are hardly so stable as they were. With more delicious fruits in the market all the time, prices can hardly be expected to hold their own much longer.

Strawberries, per chest.....\$8.00@9.00
Longworths.....7.00@9.00
Blackberries, per crate.....1.00@1.25
Raspberries, per chest.....8.00@12.00
Longanberries, per chest.....4.00@5.00
Gooseberries, per lb.....

LOS ANGELES.

Los Angeles, June 26, 1917.

BUTTER.

Receipts of week ending June 26.....350.1
Receipts of same week last year.....352.9

With more coming in, and consumption under influence of hot weather not strong, the tone of the market was weak. But with a fair shipping demand from south of us, old prices were maintained up to last Saturday. Monday, however, under the influence of liberal receipts and a low market in San Francisco, saw a break here on call of 2 cents and not much trading. Production seems to be increasing and a outlet East at a profit. Creameries depend upon home demand, which is not sufficiently strong to keep high prices up. Chicago advanced 1½c up to Monday on extra and New York 1c, but this was not sufficient to offset the bearish feeling on the Coast. Stocks of butter here in cold storage June 21, 1917, were 195,917 pounds, against 254,014 pounds same date last year, a falling off of 55,057 pounds. There was taken into cold storage for week ending June 21, 1917, 731 pounds, against 49,273 pounds same week last year, showing receipts pretty well taken care of by current demand. Tuesday, in sympathy with an advance in San Francisco and lighter receipts, extras were bid up on call 1½c and closed firm at the advance. No sellers even at this improvement, the light arrivals and stronger tone of the market north of us causing a firm feeling among holders.

We quote:
California extra creamery.....37
Prime first.....36
First.....35

Daily quotations:
1917— Wed. Th. Fri. Sat. Mon. Tues.
Extra.....38 38 38 38 38 37
1916—
Extra.....25 25½ 25½ 25 26 26

EGGS.

Receipts (railroads) for week ending June 26, 1917, 2,266 cases.
Receipts (railroads) for week ending June 26, 1916, 3,292 cases.

This market continues featureless. The receipts for past week were light and fairly well taken care of by the trade. The Eastern markets are higher than a week ago, Chicago advancing up to Monday 1½c while New York is firm to ¼c up. This improvement, however, was not sufficient to encourage shipments, hence failed to influence market here or encourage speculation. The holdings of eggs here in cold storage, June 21, 1917, were 75,776 cases, against 63,908 cases same date last year. There were received into cold storage for the week ending June 21, 1917, 2,229 cases, against 3,037 cases same week last year. Tuesday, with light receipts and advancing markets, both East and North, caused an advance of 1c on extras and pullets on call and more trading than for some days, finish was firm.

Daily quotations:
1917— Wed. Th. Fri. Sat. Mon. Tues.
Extra.....32 32 32 32 32 33
Case count.....31 31 31 31 31 31
Pullets.....30 29 29 29 29 30
1916—
Case count.....25 25 25 24 24 24

POULTRY.

There was more life to the market the past week, but with a rush of broilers and light hens on the market they ruled lower. Fryers steady and in good demand; heavy hens sold fairly well at old prices. Ducks slow sale. Turkeys not wanted. Those coming in very poor.

We quote from growers:
Broilers, 1½ to 2 lbs.....22c
Fryers, 2½ to 3 lbs.....22c
Hens over 4 lbs.....12@13c
Hens under 4 lbs.....12@13c
Ducks.....17@18c
Geese.....15c
Roosters, 8 lbs. up (soft bones).....20@22c
Turkeys, heavy, 12 lbs. and up.....24@25c
Turkeys, light.....24@25c
Squabs, live, per doz.....\$1.50@1.60
Dressed.....3.75@4.80

Special Deciduous Market Report

(By J. L. Nagle.)

Sacramento, June 26, 1917.

The extreme heat of the past week has caused considerable damage to early varieties of plums and apricots. We are informed that in some districts apricots are too ripe even to dry, but the height of the apricot season had passed before the hot spell, and the growers realized better prices than for many years past. In fact, the market on all varieties of deciduous up to date has been unusually active, with resultant high prices.

A few plums from the Sacramento river and in the hill districts were scalded by the heat, but the damage was slight.

Early peaches are running to small sizes, due to the unfavorable growing weather during the spring, but the carrying quality seems to have been improved, as was the case throughout the cherry season.

Bartlett pears are of exceptional quality. The crop is heavy in most districts and will be moving the latter part of this week. At the present time, canners have made no active campaign for their supplies,

though it is rumored that the opening price will be in the neighborhood of \$35 to \$40 a ton. This figure is not altogether satisfactory to growers, but owing to the heavy crop it is likely that a heavy tonnage will be sold for canning purposes.

The following prices have ruled for the week:

New York—Tartarian cherries averaged \$1.10, Oregon \$1.35, Royal Annes \$1.25, Bing \$1.75, Royal apricots \$2.25, Beauty plums \$2.55, Climan \$1.85, Formosa \$2.60, Tragedy \$2.85, Climan \$2.40, Alexander peaches \$1.35.

Boston—Tartarian cherries averaged \$1.15, Bigarreau \$1.42, Royal Annes \$1.52, Bing \$2.10, Royal apricots \$1.85, Shiro plums \$2.30, Climan \$1.67, Beauty \$3.05, Tragedy \$3.25, Alexander peaches \$1.50.

Chicago—Royal apricots averaged \$1.75, Alexander peaches \$1.40, Triumph \$1.55, Formosa \$2.43, Climan \$1.75, Tragedy \$2.73, Climan \$2.10, Beauty \$2.47, Bigarreau cherries \$1.47, Royal Anne \$1.57, Oregon \$1.60, Bing \$2.30.

Total shipments to date, 865 cars. Total shipments same date, 1916, 1,646 cars.

Special Citrus Market Report

Los Angeles, June 26, 1917.

Shipments of citrus fruits from Southern California from November 1 to June 24: Oranges, 30,907 cars, and lemons, 5752 cars. Same time last year: Oranges, 24,747 cars, and lemons, 4772 cars.

Shipments from Central California from November 1 to June 22: Oranges, 4571 cars, and lemons, 164 cars. Same time last year: Oranges, 5390 cars, and lemons, 146 cars.

Markets at the East the past week showed increased strength and best stock brought a little more money. Few navels now going forward and market may be said to be controlled by Valencia's, which are of good quality and are selling well, bringing a little more money. Lemons were reported higher at all eastern markets, choice stock in good demand. Low grades draggy and unimproved. Locally the situation is unchanged from a week ago. Too much delicious fruit and too many berries coming in for the good of the orange market. Packers, while in the market, are buying sparingly and were bidding last week's prices. For navels and miscellaneous varieties 1½@1½c per pound

in grove, picked. Valencia's 1½@2c per pound in grove, picked. Grape fruit still dull at 1½@2c per pound in grove, picked. Lemons, when choice, meeting with a little better demand and firm, but lots of poor stock still on the market and hard to move.

AUCTION SALES.

New York, June 25.—Fifty-seven cars of oranges and four cars lemons sold. Oranges strong and slightly higher. Weather fair. California navels averaged \$1.75@3.50. Valencia's averaged \$3.20@4.50. Lemons averaged \$4.15@5.70.

Boston, June 25.—Thirty-one cars sold. Market unsold on navels, doing better on Valencia's; lemons unchanged. California navels averaged \$1.85@4.10. Valencia's averaged \$3.90@4.70. Lemons averaged \$3.65@5.50.

Philadelphia, June 25.—Fifteen cars sold. Market strong and higher on both oranges and lemons. California navels averaged \$2.35@3.45. Valencia's averaged \$3.15@4.60. Lemons averaged \$3.30@5.10.

FRUITS.

Market well supplied and under increased offerings prices generally lower. Cherries in good demand, but sold a little lower. Many of them coming in poor condition, either being dried by intense heat or sun-burnt. Peaches, too, coming in more freely and quality of offerings mixed. Choice fruit in fair demand at fair prices, the less desirable dull and lower. Grapes steady and slow sale. Apples coming in with some freedom; sales slow.

We quote from growers:
Apples, White Astrachan, per box, \$2.50
do, Red Astrachan, per lug \$1.10@1.20

We quote from growers:
Avocados, per doz. 4.00@5.00
Cherries, black Tartarians, per lb. 6@12c
Royal Anne 8@12c
Soft White, per lb. 3@7c
Gooseberries, per lb. 6@7c
Apricots, per lug. 40@60c
Peaches, local, per lug. 75c@1.25
do, Northern, per lb. 5@6c
Grapes, Imperial Valley Malaga, 4-basket crate \$2.00@2.25

BERRIES.

Market much better supplied the past week and under influence of increased offerings prices ruled lower and sales slow. Crop less damaged than expected.

We quote from growers:
Strawberries—
Poor to choice, 30-basket crate 90c@1.10
Fancy, 30-basket crate 1.15@1.25
Blackberries, 30-basket crate 1.00@1.10
Raspberries, 30-basket crate 1.00@1.10
Loganberries, per case 1.00@1.10

MELONS.

There has been a sharp break in this

SHORTAGE OF BOX SHOOK SERIOUS FOR FRUIT SHIPPERS.

It seems that the backward season has made late the entry of the lumbermen in the Pacific Northwest timber belts, whence the material for packing boxes comes, with the result that the ripening deciduous and citrus fruit in California is accumulating faster than the wherewithal with which to box it for shipment. An added complication to the situation has been the increased wages demanded by the laborers in the lumber camps and box factories. It is not improbable that this scarcity of box material may become still more acute, and it behooves growers to put in their orders early so as to avoid possible embarrassment later in the season.

market since our last review. Receipts Monday reached twenty-eight cars of cantaloupes and under such a supply the market went to pieces. Watermelons also coming in more freely, six cars on Monday, but they held up better than cantaloupes. But are lower than a week ago. Best in fair demand.

We quote from growers:
Cantaloupes, Imperial, standard crates \$1.25@1.50
do, Imperial, pony crates 1.20@1.30
Imperial Valley Honey Dew Melons, per crate of nine and ten 2.00
Watermelons, per cwt. 2.00@2.25

VEGETABLES.

Market well supplied and with a falling off in the shipping demand the tendency of prices was lower. Cabbage was in little better demand, but is still cheap as ever.

Potatoes sharply lower. Receipts liberal and shipping demand falling off, leaving a heavy supply for home trade, hence lower prices and slow sales. Onions in good supply, dull and weak. Corn coming in more freely, slow sale and lower. Tomatoes in better supply and lower, demand fair. Home grown now arriving. Summer squash steady and fair demand. Cucumbers in good supply, slow sale and weak. Peas and string beans lower under lighter offerings and demand fair for all good stock.

We quote from growers:
New potatoes, per cwt. \$2.00@2.25
Peas, per lb. 5@5½c
New onions, crystal wax and Bermuda, per crate \$1.00
Onions, Northern, cwt. 1.25
String beans, w, per lb. 5c
do, Kentucky Wonder, per lb. 5½@6c
Imperial tomatoes, 4-bskt crate \$1.25
do, do, lug 1.50
Summer squash, lug 40@50c
Cucumbers, per box of 2½ to 3 dozen 40@50c
Green corn, lug 75c@85c
Cabbage, per 100 lbs. 50@60c
Lima beans, per lb. 5@6c
Okra, per lb. 6@8c

HAY.

There was a little more moving the past week, but prices were lower on alfalfa and weak on grain hay. More coming, demand was a little better but not sufficiently strong to hold prices up in face of the increased offerings. Clearances were hard to make and some of the lower grades had to be carried over each day. Receipts for the week ending Tuesday, 106 cars.

We quote f. o. b. Los Angeles:
Barley hay, ton \$19.00@21.00
Oat hay, ton 20.00@22.00
Alfalfa, northern, per ton 16.00@17.00
Alfalfa, local, ton 18.00@19.00
Straw, ton 9.00@10.00

HONEY AND BEESWAX.

Very little doing in this market the past week. The trade is holding back and declining to take hold at the high prices. While the crop is admitted to be short prices are so much higher that buyers hesitate to pay the prices asked. White orange honey is off ¼c and others are weak.

We quote from growers:
White orange, extracted, per lb. 13c
White sage, extracted, per lb. 12½c
Light amber sage, extracted, per lb. 9c
Light amber alfalfa, extracted, lb. 8½c
Beeswax, per lb. 32½c

Publisher's Department.

Prof. Wickson is working steadily on the revision of the 4th edition of "California Vegetables," which we expect to have printed about September 1st.

Mrs. E. Campbell, San Mateo county, writes: "We shall continue reading the Rural Press with admiration and interest. We have the 1st and 2nd Thousand Answers, and otherwise cannot keep in practice with the theories already imbibed. We wish the Press and all its people all the success they deserve, which is much."

Hurrah for our field force. During the past week we added 333 new, paid subscribers to our list. Our list is now gaining about 50 per cent faster than ever before. Several solicitors sent in over 40 new subscribers each, and one secured 69. At the rate we are gaining it will not take us long to pass the 30,000 mark we set at the beginning of the year.

Classified Advertisements

Rates in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

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Special Livestock Market Report

San Francisco, June 27, 1917.

CATTLE.—Very little hay-fed stock is now arriving, though the grassers received are in fair condition. The latter are more plentiful than was expected at this time. Good prices are obtained for such prime beef as may be offered. The tendency of quotations for this class of stock is upward. The receipt of calves is still light, and hardly meets the demand. Stock growers, both range and dairy, are disposed to hold back their young stock. The price situation is strong.

Grass Steers.
No. 1 weighing 900@1200 lbs. 8½@8¾c
No. 1 weighing 1200@1400 lbs. 8½@8¾c
Second quality 8@8½c
Thin undesirable 6½@7½c

Grass Cows and Heifers.
No. 1 6½@7½c
Second quality 6¼@6½c
Common to thin 6@6¼c
Undesirable 4@5c
Hay-fed Cattle ½@¾c higher.

Bulls and Stags—Good.
Fair 5½@5¾c
Thin 4@5c

Calves.
Lightweight 9¼@9½c
Medium 8¼@8½c
Heavy 7@7½c

SHEEP.—The sheep supply continues to be far behind market requirements. The sky-rocketing prices of wool have much to do with the reluctance of sheep men to part with their stock, even at prevailing fancy prices. Lambs are also scarce, and only tiptop prices can induce holders to sell.

Lambs.
Yearling 12@12½c
Milk 12@12½c

Sheep.
Unshorn wethers 11c
Unshorn ewes 10c

HOGS.—Hog stock is not plentiful, but about equals the demand, as the high price of pork is discouraging large consumption. Packers, too, are loth to continue operations on a large scale, in view of ruling prices. Quotations are about stationary.

Hard, grain-fed, 100 to 150 13c
Hard, grain-fed, 150 to 300 14½@15c
Hard, grain-fed, 300 to 400 14½@14¾c

DRESSED MEATS.—There is little activity in this line, little suitable stock offering. The offerings of veal about equal the requirements. There is little or no change in prices. The same may be said of mutton and pork.

Steers, No. 1 13½c
Second quality 12½@13c
Cows and Heifers 11@12c

Calves, as to size, etc. 12@14c
Lambs—Suckling 20c
Yearling 19c

Sheep—Wethers 18c
Ewes 17c
Hogs 20c

HORSES.

There is no well established horse market in San Francisco. Quite a little business is done at the various auction marts and at private sale. Nominal quotations are about as follows:

Drafters, 1700 lbs. and up \$250@275
Drafters, 1550 to 1650 lbs. 150@185
Chunks, 1350 to 1500 lbs. 150@175
Wagon horses, 1050 to 1350 lbs. 110@130
Green Mountain range horses, 950 to 1200 lbs. 50@85

Los Angeles, June 26, 1917.

CATTLE.—The market situation is unchanged from a week ago. While killers are getting all the cattle they want, feeders are not pushing best steers on the

market, but are disposed to sell cheaper stuff, which is finding fairly ready sale. The demand is for cheaper meats rather than for the better "cuts," which are slow sale. The result is killers are using more cows and less steers and this is having a tendency to hold market down for higher priced cattle. Calves coming in less freely, though supply is ample for demand, which is light at old prices.

Per cwt. f. o. b. Los Angeles:
Beef steers, 1000 to 1100 lbs. \$8.50@9.00
Prime cows and heifers 7.00@7.50
Good cows and heifers 6.50@7.00
Calves, per cwt 8.00@9.00

HOGS.—Market past week very quiet. Receipts light, but as arrivals were mainly made up of half grown and half fat hogs, there was little to encourage buyers. Killers only wanted a few hogs. Hot weather and light demand for pork and poor quality of hogs offered, tending to create a draggy and weak market for all except choice grain fed hogs, which continue scarce and command a premium over quotations.

Per cwt. f. o. b. Los Angeles:
Heavy, averaging 250@300 lbs. \$12.00@12.50
Mixed, 200@250 lbs. 13.50@14.50
Light, 175@200 lbs. 13.50@14.50
Rough docked 20 pounds, piggy sows 40 pounds and stags 40 per cent.

SHEEP.—As with cattle and hogs, the market the past week lacked snap. The high price of mutton and lamb causing lighter consumption than previous years. Then, too, the abundance of fruits and vegetables is causing a lighter consumption of meats. Hence the wants of killers have not been heavy and they have been getting enough to supply their wants at old prices, though tone of market is firm. California and Arizona continue to supply most of the demand.

Per cwt. f. o. b. Los Angeles:
Prime wethers 9.00@10.00
Prime ewes 9.50@10.00
Yearlings 10.50@11.00
Lambs 13.00@14.00

North Portland, Ore., June 25, 1917.

BEEF STEERS.—Big supply received for today's market with ordinary to fair orders. Prime steers selling on a strong to higher basis, one load of strictly fat California steers bringing \$10.75, with the bulk of fair grade steers going from \$9.00@9.75. The large string of buyers took large supply in good time. Supply of fair to prime steers does not meet the demand, common and ordinary steers are rather slow, but steady prices ruled generally.

BUTCHER CATTLE.—Strictly choice cows and heifers are strong, with several loads selling at \$8.50@9.00, several good ones bringing around \$8.00, strictly fat dairy bred cows from \$7.25@7.75, ordinary and common cows slow and lower, selling from \$5.00@6.50. Bulls were in good supply with equally as good demand, a bunch of good bulls were sold at \$6.85; top on bulls being \$7.50; calves are unchanged with little demand.

HOGS.—Brisk trade in hogs, demand was excellent, with a comparatively good supply. Prime hogs advanced 25 to 35 cents with several loads bringing \$15.00; bulk of sales from \$15.35@15.50; Eastern market dropped off again today, the hog market here seems to be checked with very few hogs in sight.

SHEEP.—The sheep market ruled generally steady, the demand seems to be checked, at least temporarily, spring lambs selling at an advance of 25 cents, bringing from \$13.00@13.50, shorn yearlings \$9.00@10.00, heavy ewes \$7.50@8.50.

THE RECKLESS SLAUGHTER OF CALVES IS DISCOURAGED.

The widespread agitation against the marketing of dairy and range calves—an agitation both timely and pertinent—is having its effect. The receipts of such stock on the local market have fallen off materially and quotations have been marked up. Declining prices for hay and improved pasturage have encouraged stockmen and dairymen to keep back their young stock. The National Council of Defense has sent out assurances that owners of calves will be well repaid by feeding until next fall or spring and putting on additional weight.

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